

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Name of Property

County and State

Section number _____ Page _____

Name of multiple property listing (if applicable)

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 100003686

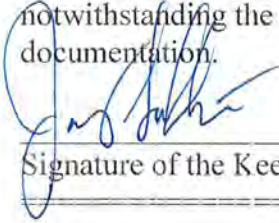
Date Listed: 5/2/2019

Property Name: Carretera Central

County: Caguas, et al

State: PR

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.



Signature of the Keeper

5-2-2019

Date of Action

Section 8: Period of Significance

The period of significance is hereby changed to 1846-1970, to reflect the portions of the roadway that were constructed before officially adopted into the Carretera Central.

Section 10: Acreage of property

The acreage of the property 860 more or less. This calculation is based on the total length of the nominated road, 81.1 kilometers and an arbitrary right-of-way of 30.5 meters. This right-of-way should encompass the roadbed and associated structures.

UTM points represent the beginning and end of the roadway.

The Puerto Rico State Historic Preservation Office was notified of this amendment.

DISTRIBUTION: National Register property file; Nominating Authority (without nomination attachment)



National Register of Historic Places Registration Form

1. Name of Property

Historic name Carretera Central

Other names/site number Military Road/ PR-1/ PR-14/PR-25/PR-735

Name of related multiple property listing N/A

(Enter "N/A" if property is not part of a multiple property listing)

2. Location

Street & Number PR-1 from Km.40 to km. 55.4 / PR-735 from km. 0.0 to km. 2.5/ PR-14 from km. 10.0 to km. 74.0

City or town Caguas/ Cayey/ Aibonito/ Coamo/ Juana Díaz State PR County Caguas/ Cayey/ Aibonito/ Coamo/Juana Díaz

Not for publication Vicinity

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property meets does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance: national statewide local

Applicable National Register Criteria: A B C D

Carlos A. Rubio - Cancela State Historic Preservation Officer

March 5, 2019

Signature of certifying official/Title:

Date

Puerto Rico State Historic Preservation Office

State or Federal agency/bureau or Tribal Government

In my opinion, the property meets does not meet the National Register criteria.

Signature of Commenting Official

Date

Title

State of Federal agency/bureau or Tribal Government

4. National Park Service Certification

I, hereby, certify that this property is:

- entered in the National Register.
- determined eligible for the National Register.
- determined not eligible for the National Register.
- removed from the National Register.
- other, (explain): _____

Signature of Keeper

5-2-2019

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5. Classification

Ownership of Property (Check as many boxes as apply)

- Private
- Public-local
- Public-state
- Public-federal

Category of Property (Check only **one** box)

- Building(s)
- District
- Site
- Structure
- Object

Number of Resources within Property (Do not include previously listed resources in the count.)

Contributing	Noncontributing	
<u>14</u>	<u>0</u>	Buildings
<u>1</u>	<u>0</u>	Sites
<u>66</u>	<u>8</u>	Structures
<u>0</u>	<u>0</u>	Objects
<u>81</u>	<u>8</u>	Total

Number of contributing resources previously listed in the National Register 11

6. Function or Use

Historic Functions (Enter categories from instructions.)

TRANSPORTATION/ road-related

Current Functions (Enter categories from instructions.)

TRANSPORTATION/ road-related

7. Description

Architectural Classification (Enter categories from instructions.)

Materials (enter categories from instructions.)

Principal exterior materials of the property: Asphalt, masonry, brick, stone, metal, concrete, steel, wood

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Summary Paragraph (Briefly describe the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

The **Carretera Central**, with its historic course built between 1846 and 1886, is a stretch of asphalted road of one hundred and thirty-four (134.7) kilometers in length that crosses Puerto Rico in a winding north to south direction connecting the island’s northern capital, San Juan, to the southern city of Ponce. Also known as the Military Road, the 19th century engineering marvel runs from the coastal plains of the Atlantic Ocean to the coastal plains of the Caribbean Sea, cutting its way throughout some of the most challenging terrain, topographically and scenery wise, in the high mountains of the *Cordillera Central*. Along its path, the **Carretera Central** connects San Juan, the town of Río Piedras,¹ the municipalities of Caguas, Cayey, Aibonito, Coamo, Juana Díaz and Ponce (**Fig. 1**). The **Carretera Central**, a linear district, is composed of several contributing resources, among these, the road itself, bridges, historic sewers, and *casillas de camineros*.

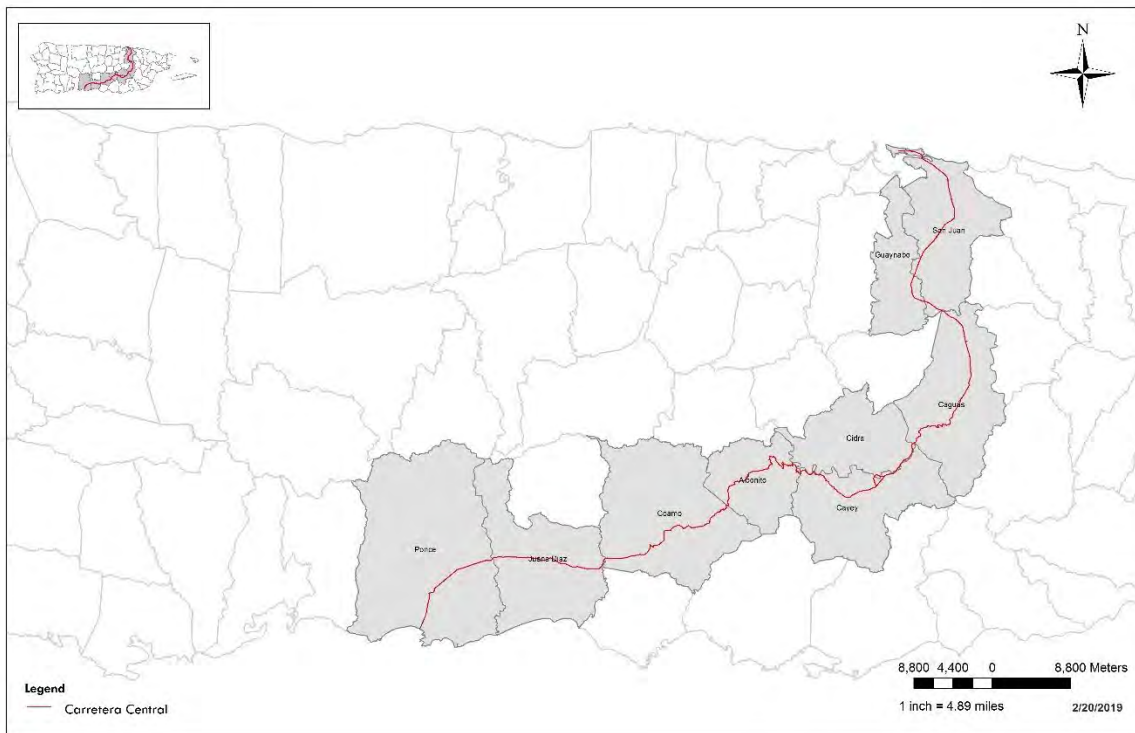


Figure 1. The 134.7 kilometers of **Carretera Central** from San Juan to Ponce. (Map prepared by Eduardo Cancio González, Information System Specialist, PRSHPO, 2019)

¹ Established in 1714, Río Piedras was a separate municipality until 1951, when it became a ward of San Juan.

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Narrative Description (Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable.)

Depending on the source, the length of the **Carretera Central** has been estimated to be between 134, to almost 140 kilometers.² At one time, San Juan’s city hall building was considered the road starting point. The old Santiago Gate, known as *Puerta de Tierra* was also used as the official beginning of the road. To provide a definite starting point, a Royal Decree passed on April 27, 1888, officially established the Marina as Kilometer 0. By early twentieth century, however, the length of the road was estimated using the Governor’s residence (La Fortaleza) as the starting mark, with the 1911 port facility at Playa Ponce as its ending point. Using this last reference, the **Carretera Central** was about 136.7 kilometers in length. However, currently, the historic road is usually measured from the south east corner of *Plaza Colón*, ending at the southern end of the *Plaza de Abolición* in Ponce, making its length approximately 134 kilometers.

The comparison of 19th century maps, like the one shown in figure 1, and present aerial photographs, enforce and sustain the high integrity of the **Carretera Central** in terms of its historical course. With expected deviations due to more than one hundred and thirty years of continuous use and urban development, a large section of today’s asphalted **Carretera Central** traverses practically the very same route of the macadam road finished in 1886.³

Using today’s road designations, as established by the *Departamento de Transportación y Obras Públicas* (DTOP/Department of Transportation and Public Works), the old **Carretera Central**’s route corresponds to the sections identified as PR-25, PR-1 and PR-14. From north to south, PR-25 starts in Old San Juan, running for twelve (12) kilometers until reaching Río Piedras’ town square. Departing Río Piedras, the road then becomes PR-1, traversing for fifty-five (55.4) kilometers passing through Caguas and reaching the western outskirts of Cayey’s urban center. Precisely at the mark of Km. 55.4 in Cayey, the old **Central**’s route becomes PR-14. From this last point, the road runs for seventy-three (73.1) kilometers, passing Cayey’s urban center, and the towns of Aibonito, Coamo, Juana Díaz and Ponce, where it ends at the *Plaza de la Abolición* (Abolition Square). While PR-25 and PR-1 have their starting kilometers in north side of the island, PR-14 numbering starts at the *Plaza de Abolición*.

² PRSHPO’s GIS measured the footprint of the **Carretera Central** at 134.7 kilometers.

³ The **Carretera Central** began to be asphalted during the early years of the 20th century, as the new method to preserve the road system was introduced in the island.

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Today, just like in the 19th century, the **Carretera Central** runs southeast from Old San Juan towards Río Piedras for twelve kilometers. The segment that runs through Puerta de Tierra is currently designated as *Avenida Constitución* (**Fig. 2**). Once it passes the Caño de San Antonio, it becomes Avenida Ponce de León while traversing the Santurce ward and reaching Río Piedras’ town square. However, this entire section, from Old San Juan to Río Piedras, its designated as PR-25 by the *Departamento de Transportación y Obras Públicas* (DTOP).



Figure 2. PR-25 (marked with blue arrows) is the official designation for the entire section of the old Carretera Central from Old San Juan until Río Piedras. From this last point, it’s designated as PR-1.

From Río Piedras, the road (also known as Carretera # 1 since the 19th century), turns southward running for twenty-three (23.7) kilometers reaching Caguas’s town square. From Caguas’ flat terrain, the road starts its southwest, twenty-four (24.1) kilometers course towards Cayey’s town square, entering the eastern extension of the Cordillera Central. In the 1940s, a few kilometers just before reaching Cayey’s urban core, the **Carretera Central** (PR-1) was split with a fork running south towards the town of Salinas, while the original road kept its 19th century course. The southern branch kept the PR-1 designation, while the old road was named Highway 14 (PR-14) (**Fig. 3**).

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Figure 3. The blue arrows indicate the **Carretera Central's** (PR-1) course from Caguas to Cayey. The red arrow shows the point where a branch running south was developed during the 1940s. This extension kept the name PR-1, while the old **Carretera Central** was designated as PR-14. The road running parallel to the east of the **Carretera Central** is PR-52, today's main expressway from San Juan to Ponce. PR-52 replaced almost entirely the old road during the 1970s.

Departing Cayey, the road reduces in width, reaching its historical size of six to seven meters wide. Leaving Cayey, the **Carretera Central** increases its winding climb and torturing curves (for past and present travelers) southwest for nineteen (19.7) kilometers towards Aibonito's town square.⁴ Due to the challenging topography of the Cordillera Central in this area, the section from Cayey to Aibonito was the last one to be built of the entire road; it was also the most expensive section and the one which required the most intensive use of labor, contracted and as well as forced (**Fig. 4**).

⁴ Aibonito is located on a relative high elevation. Actually, its main plaza is the highest in the island at 731 meters (2,401 ft.) above sea level.

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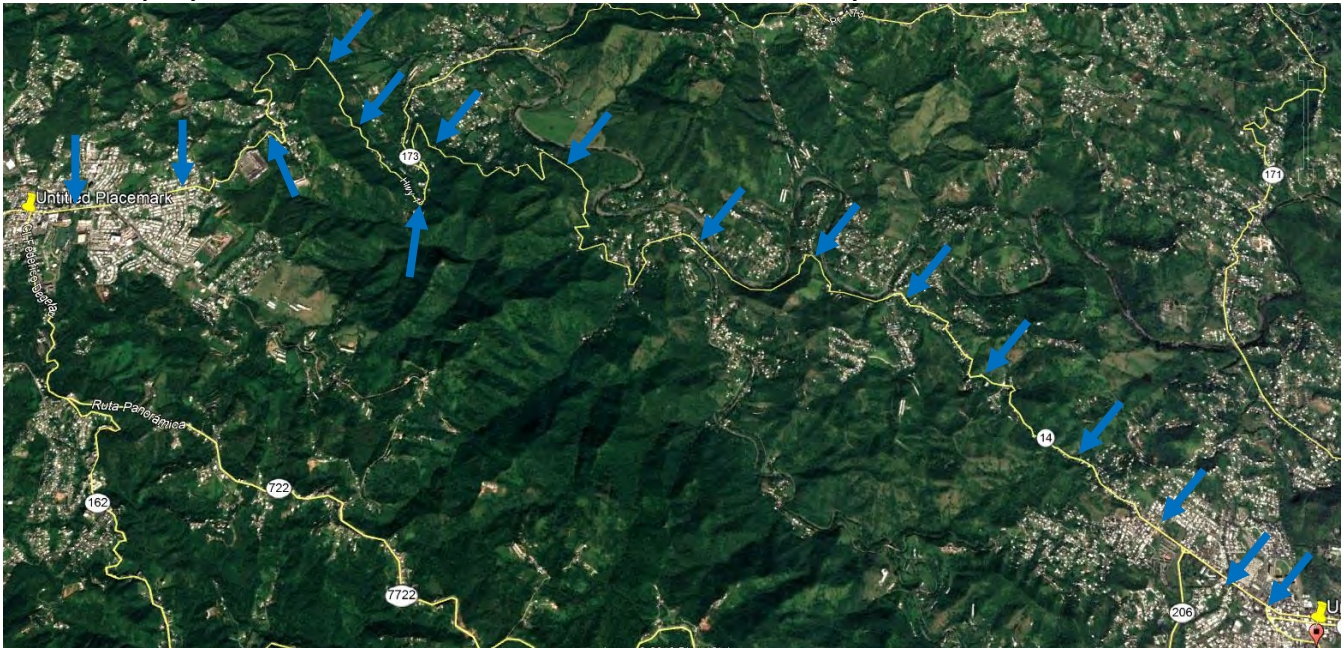


Figure 4. The blue arrows mark the 19.7 kilometers of the highly difficult terrain traversed by the **Carretera Central** from Cayey (yellow pin at the right bottom) to Aibonito (yellow pin at the upper left).

From Aibonito, departing the town on its western end, the road begins its ten (10.5) kilometers of winding and tight downward slope towards the old town of Coamo, still traversing through the extraordinary scenery and hilly landscape of the *Cordillera Central* (**Fig. 5**). In 1898, this section of the road became a site associated with the Spanish American War. The most significant land military encounters of the short conflict took place precisely on this stretch of the old road.

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Figure 5. The 10.5 kilometers of the **Carretera Central**, from Aibonito (upper right yellow pin) to Coamo, at the lower left.

From Coamo to Juana Díaz, the road stretches westward for twenty-six (26.7) kilometers, the longest distance between all the individual municipalities connected by the **Carretera Central** (Fig. 6). To reach its final destination, the road continues along a twelve (12.4) kilometer stretch from Juana Díaz to Ponce. The final leg, from Ponce’s center to Ponce Playa and its port facility, is a six (6.6) kilometer road (today PR-123), which pre-dated the completion of the **Carretera Central** for over fifty years.

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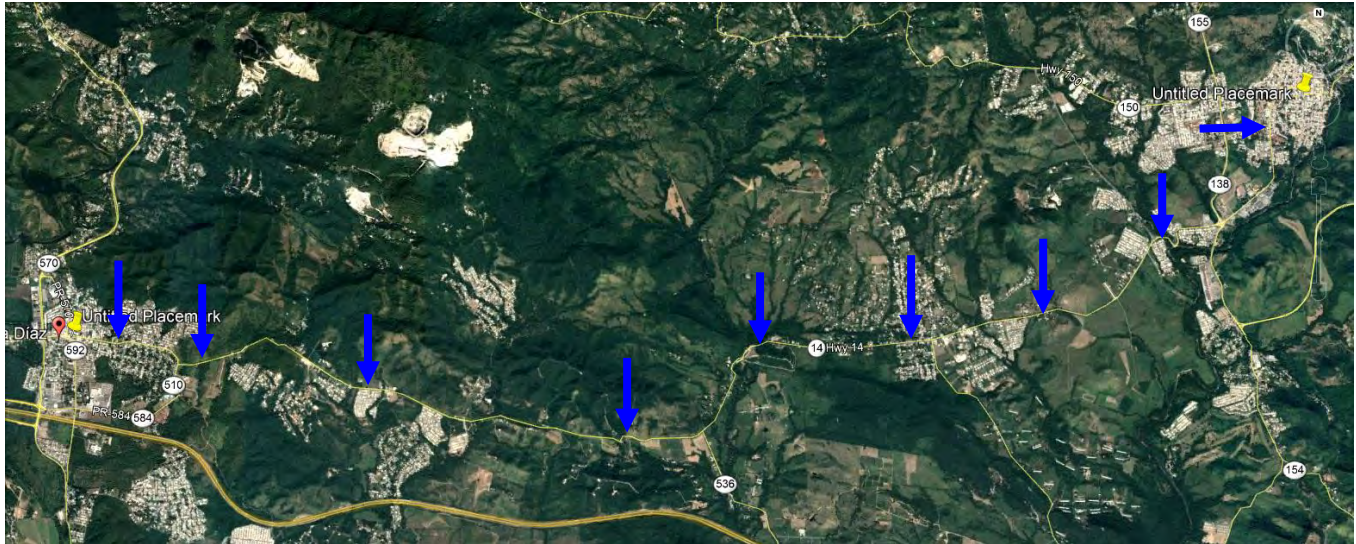


Figure. 6 The **Carretera Central**, from Coamo (upper right yellow pin), to Juana Díaz, (lower left).

There are many built components that contribute to the historic significance of the **Carretera Central**, most of them constructed during the Spanish period or during the early years of the twentieth century. Besides the road itself (the travel-way), the **Carretera Central** is associated with essential structures that are integral parts to its design and function. The bridges in the **Carretera Central**, for example, are one of the most significant functional resources of the historic road.

There are a total of twenty-four bridges along the 134 kilometers of road. Sixteen of those were built by the Spanish government, while construction period for the other eight bridges range between the 1930a up to the 1990s. The 19th century bridges are extremely significant resources in their own rights.⁵

Starting in the northern end of the **Carretera Central**, there is the 1939 *Puente de Martín Peña* (Bridge #185), a reinforced concrete structure that spans 73.5 meters over the *Caño de Martín Peña*. The brick and masonry, 1853, *Puente Río Piedras* (Bridge # 3), the oldest bridge in the **Carretera Central**. *Puente de los Frailes* (Bridge #4), located in the town of Río Piedras with a length of 120 meters, brick and masonry, built in 1855. Located in Caguas, *Pontón de la Concepcion* (Bridge #6), is an 1856, brick and masonry, eighteen meters long structure that spans over Río Cañas. Also, in Caguas,

⁵ National Register of Historic Properties. *Historic Bridges of Puerto Rico, c. 1840-1950*. Multiple Property Submission. 1995

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with an eighteen-meter span over Quebrada Las Quebradillas Bridge # 11, is an 1881, ashlar work foundations, with metal sides mounted in masonry abutments.

Besides Puente Las Quebradillas, in the section of the **Carretera Central** that runs from Caguas to Cayey, there are two more significant bridges. One is Puente La Liendre, located in PR-735, kilometer 0.7. La Liendre is an 1877, seventeen meters long that spans over *Quebrada Beatriz*, built with concrete foundations, and ashlar and masonry works constructed locally, but with its metal parts built in Europe. Located also in PR-735, km 1.3 (an original section of the **Carretera Central**, in Cayey), the 1894, *Puente Arenas* (Arenas Bridge # 466), it's the longest metal bridge constructed during the Spanish government.⁶ Also, in Cayey, *Puente Río Matón* (Bridge #177), nineteen meters, 1886, masonry, ashlar works and metal bridge, located in km. 63.2 in Highway 14.

In PR-14, km. 57.2 in the scenic hills of Aibonito, is the 1892, *Puente Quebrada Honda* (Bridge #176), with its ashlar's masonry works and its metal lattice truss made in Europe. A few kilometers down the very same road, also in Aibonito, is *Puente Quebrada Toíta* (Bridge 178), built in 1892, with ashlar's masonry works for its abutments and foundations, and metal truss. The metal sections for both bridges (Toíta and Honda) were constructed in Europe.

The only brick masonry bridge in the **Carretera Central** on the southern side of the Cordillera Central is the 1862 *Puente General Méndez Vigo* (Bridge # 173). Located on PR-14, km. 30.4, in Coamo, the *Méndez Vigo*, also known as *Puente Las Minas*, witnessed one of the encounters between the Spanish troops and the US soldiers when, to slow down the advancing US forces, the Spanish troops blew-up part of the bridge's upper deck. The US Corps of Engineers later re-built the bridge. Coamo has also the 1879, *Puente Padre Iñigo* (Bridge #174), a fifty-three meters in length, ashlar's masonry works with iron lattices structure, located at km. 34.2 on PR-14. Also, in Coamo, is the 1879, metal and masonry works, *Puente Obispo Zengotita* (Bridge #172), with its twenty-one meters span over Río Descalabrado on Highway 14, km. 23.9. Overpassing Río Cuyón in Coamo also, is the 1882, concrete, ashlar and masonry, iron jalousies *Puente de Las Calabazas* (Bridge #175), located in Highway 14, km. 39.

⁶ Originally, the 2.7 kilometers that currently are designated as PR-735 in Cayey were part of the **Carretera Central**. During the 1940s, that section of the road was straightened, leaving the stretch containing Puente La Liendre and Puente Arenas outside the limits of the PR-1. For the purpose of this nomination, those 2.7 kilometers are considered a contributing tract within the **Carretera Central**.

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In the final stretch of the **Carretera Central** between Juana Díaz and Ponce/ Ponce Playa, bridges are found over the rivers Guayo, Inabón, Jacaguas, Bucaná and Portugués, as they intersect the old road on their way to the Caribbean Sea. All the bridges over these water courses were of wooden construction at the time of the **Carretera Central's** opening in 1886 and were considered of a temporary nature. During the early decades of the 20th century, they were built in solid and permanent material. However, most of the bridges in this section were demolished and rebuilt during the 1980-90s, to allow for the road conversion into a four-lane road. Example of these modern, non-contributing bridges are shown below (**Fig. 7**):



Figure 7. Three modern 1980-90s bridges in the Carretera Central. The first two are in PR-14, Ponce's jurisdiction. The last one is in PR-14, at Juana Díaz's urban center western entrance. In total, there are 24 bridges in the **Carretera Central**, out of which, eight are not contributing resources for the purpose of this nomination.

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Out of the bridges in the southern region in PR-14, the only one that has kept its historic integrity is the *Puente Río Portugués* (Bridge 0145), a 1933, seventy-six meters long, fifteen meters wide, reinforced concrete vehicular and pedestrian bridge supported by steel longitudinal beams, designed in a subtle Art Deco style by well-known engineer Rafael Nones (**Fig. 8 Maps and Photos**) (**Table 1**).

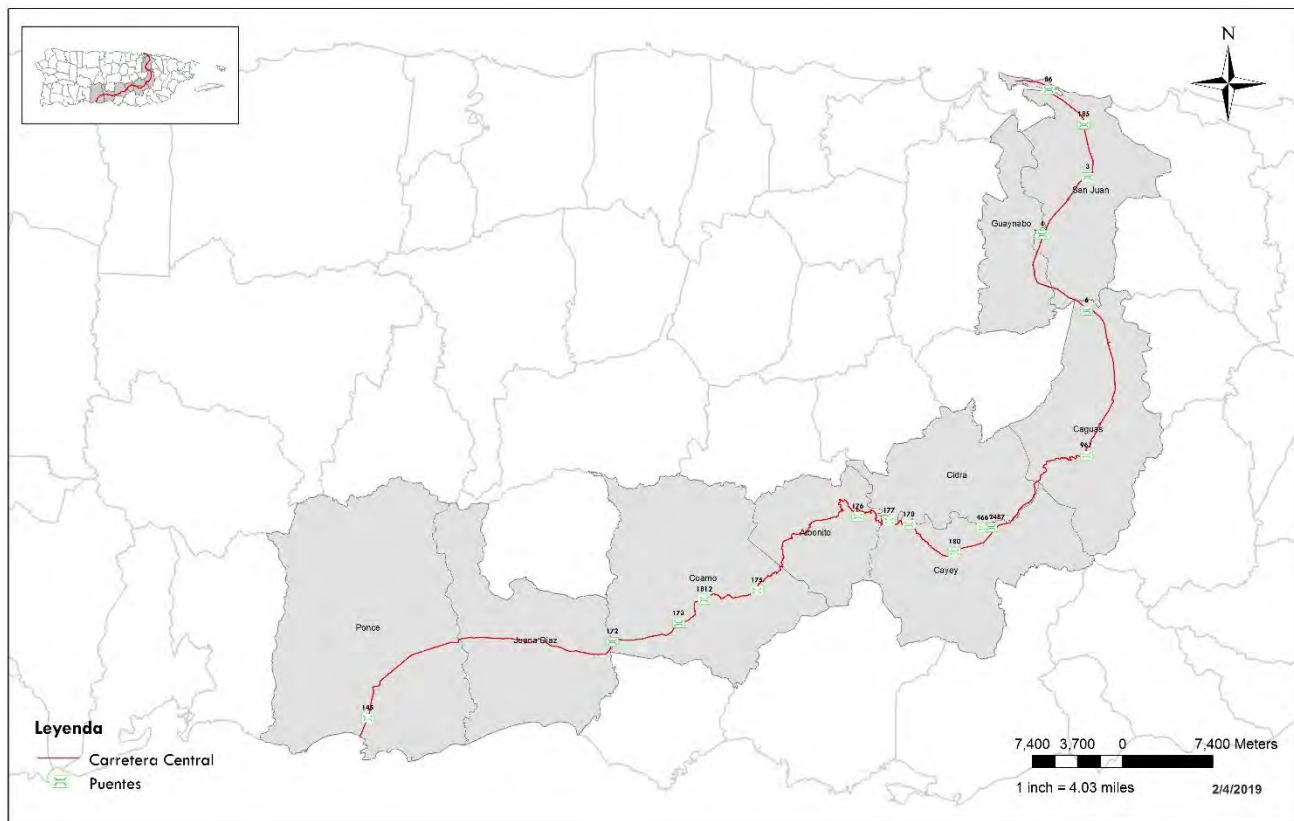


Figure 8. Map shows the location of the most significant bridges in the **Carretera Central**, from north to south: Puente Martín Peña #185; Puente Río Piedras #3; Puente General Norzagaray #4; Pontón La Concepción #6; Puente Las Quebradillas #11; Puente La Liendre #467; Puente Arenas #466; Puente Santo Domingo #180; Puente Quebrada Toita #178; Puente Río Matón #177; Puente Quebrada Honda #176; Puente Las Calabazas #175; Puente Padre Iñigo #174; Puente General Méndez Vigo #173; Puente Obispo Zengotita #172 and Puente Río Portugués #0145. (Map prepared by Eduardo Cancio González, Information System Specialist, PRSHPO, 2019)

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Table 1. The most significant bridges in the **Carretera Central**, eleven (11) of them already included in the National Register. The bridges' numbers are assigned by Puerto Rico's Department of Transportation and Public Works.

BRIDGE	LOCATION	CONSTRUCTION DATE	NRHP (Y=yes) (N=no)
Martín Peña (#185)	San Juan, PR-25, Km. 8	1939	Y
Río Piedras (#3)	San Juan, PR-8839	1853	Y
General Norzagaray (#4)	San Juan, PR-873 Km. 0.8	1855	Y
La Concepción (#6)	Caguas, PR-798, Km. 1	1856	Y
Las Quebradillas (#11)	Caguas, Km. 41.3	1881	N
La Liendre (#467)	Cayey, PR-735, Km. 0.7	1877	Y
Arenas (#466)	Cayey, PR-735, Km. 1.5	1894	Y
Santo Domingo (#180)	Cayey, PR-14, Km. 70.4	1881	N
Quebrada Toita (#178)	Cayey, PR-14, Km. 65.5	1892	N
Río Matón (#177)	Cayey, PR-14, Km. 63.2	1886	Y
Quebrada Honda (#176)	Aibonito, PR-14, Km. 57.2	1892	N
Las Calabazas (#175)	Coamo, PR-14, Km. 38.8	1882	Y
Padre Iñigo (#174)	Coamo, PR-14, Km. 34.2	1879	Y
Gen. Méndez Vigo (#173)	Coamo, PR-14, Km. 30.4	1862	Y
Obispo Zengotita (#172)	Coamo, PR-14, Km. 23.9	1879	N
Río Portugués (#0145)	Ponce, PR-123, Km. 2.9	1933	Y

Figure 8. Images of the most significant bridges in the **Carretera Central**. (Photos, Juan Llanes Santos, 2018-2019)



Puente Martin Peña, San Juan, PR-25, km. 8 (b. 1939)

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Puente Río Piedras, San Juan, PR-8839 (b. 1853)



Puente de Norzagaray, San Juan, PR-873, Km. 0.8 (b. 1855)

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Pontón La Concepción, Caguas, PR-798, km. 1.0 (b. 1856)



Puente Las Quebradillas, Caguas, PR-1, Km. 41.3 (b. 1881)

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Puente Arenas, Cayey, PR-735 (old section of PR-1), km. 1.5 (b. 1894)



Puente La Liendre, Caguas, PR-1 (PR 735), km. 0.7. (b. 1877)

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Puente Santo Domingo, Cayey, PR-14, Km. 70 (b. 1881)



Puente Quebrada Toita, Cayey, PR-14, Km. 64.2. (b. 1892)

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Puente Río Matón, Cayey, PR-14, km. 63.2 (b.1886)



Puente Quebrada Honda, Aibonito, PR-14, km. 57.2 (1892)

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Puente Padre Iñigo, Coamo, PR-14, km. 33.8 (b.1879)



Puente Méndez Vigo (Puente Las Minas), Coamo, PR-14, km. 30.4 (b.1862)

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Puente Obispo Zengotita, Coamo, PR-14, km. 23.9 (b. 1879)



Puente de Las Calabazas, Coamo, Km.38.8 (1882)

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Puente Río Portugués, Ponce, PR-123, Km. 2.9 (1933)

During the 19th century, the macadam method of road construction and pavement was the most commonly used. This method required frequent maintenance, demanding a permanent, diligent and skillful labor force. The Spanish government relied upon the *peón caminero* (road mender) to perform the daily preventive maintenance checks and any required repair of the roads directly under the peninsular government's jurisdiction, as was the **Carretera Central**. Due to the distances and the difficult accessibility to some roads, the *peón caminero* was assigned to live within walking distance of the extension of the road under his care. As such, depending on the location, the position of *peón caminero* came with a permanent house built by the government within his assigned road. Just like the bridges, these houses, locally known as *casillas de camineros* (road mender's houses), became a significant contributing component of the built landscape associated with the **Carretera Central**.

According to the 19th century documentation researched at the *Archivo General de Puerto Rico* (AGPR) in support of this nomination and confirmed in a series of articles published during 1929 – 1930 in the *Revista de Obras Públicas de Puerto Rico* by Juan E. Castillo, archivist of the local Department of the Interior, thirty-three (33) *casillas de camineros* were built along the **Carretera Central**, from San

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Juan to Ponce.⁷ The first *casillas* were built in the section from San Juan to Caguas, with the last ones built in the stretch from Coamo to Ponce, at the southern end of the Cordillera Central. All the *casillas* built in the section San Juan-Caguas were a single-family dwelling, while the others were divided into two similar homes under one roof, separated by a central hallway, having each side a living room and two bedrooms. The roof was built of brick slabs over wooden beams, with mortar floor on the central hallway and pine wood floor on the rest of the building. A small building was usually added on the back of the house, to be used as latrine, stable and/or to shelter the equipment used by the *peón caminero*⁸

(Fig. 9).

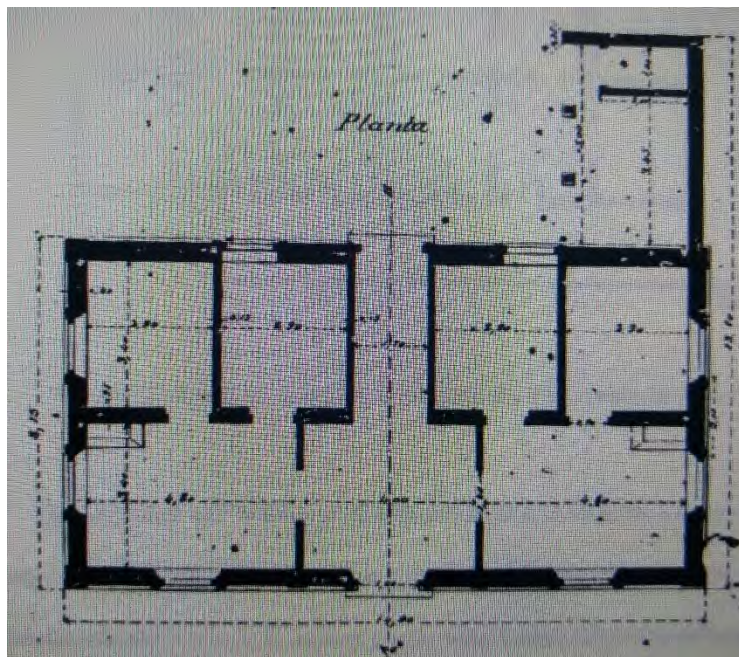


Figure 9. Historic lay-out of a double-dwelling 19th century *casilla de caminero*, main typology in the **Carretera Central**, with its central hallway dividing two identical living quarters, with a shared latrine and supplies shed on the back.⁹

⁷ Juan E. Castillo. *La Carretera Central. Su Historia*. *Revista de Obras Públicas de Puerto Rico*, Diciembre 1929, Año VI, Número 72, 316-320; *Revista de Obras Públicas de Puerto Rico*, Enero 1930, Año VII, Número 1, 21 -28; *Revista de Obras Públicas de Puerto Rico*, Febrero 1930, Año VII, Número 2, 36-41; *Revista de Obras Públicas de Puerto Rico*, Marzo 1930, Año VII, Número 3, 64-68; *Revista de Obras Públicas de Puerto Rico*, Abril 1930, Año VII, Número 4, 96-100; *Revista de Obras Públicas de Puerto Rico*, Mayo 1930, Año VII, Número 5, 126-129; *Revista de Obras Públicas de Puerto Rico*, Junio 1930, Año VII, Número 6, 143-147.

⁸ See, Luis Pumarada O'Neill and María de los Ángeles Castro, *La Carretera Central: un viaje escénico a la historia de Puerto Rico*, Oficina Estatal de Preservación Histórica, Septiembre 1997. See, Sibanacan. Informe Final. *El inventario y estudio del valor arquitectónico, arqueológico e histórico social de las casillas de peones camineros de la isla de Puerto Rico, 1844-1954*. Oficina Estatal de Preservación Histórica, Marzo 1991. See also, Aida Belén Rivera Ruiz, *By the Side of the Road. An interpretative look at the road menders' houses*. Thesis presented to the Department of Anthropology of the College of William and Mary in Virginia for the Degree of Master of Arts, 2001.

⁹ Archivo General de Puerto Rico (AGPR). Fondo: Obras Públicas. Serie: Carreteras. Caja 210. Legajo 580.

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All the extant *casillas de camineros* in the **Carretera Central**, built during the 19th century, regardless of their architectural differences, are made of brick, stone, masonry and wood. Some of the *casillas* have their construction material beautifully and dangerously exposed, while others have stucco applied to their surfaces.

Although the historic documents indicate the construction of thirty-three (33) *casillas de camineros* in the **Carretera Central** by the end of the 19th century, a survey conducted to support the present nomination identified seventeen (17) extant resources (**Fig. 10**). Except for only one *casilla* today located in the jurisdiction of the municipality of Guaynabo on state road PR-8834 (originally part of the **Carretera Central**), all the *casillas* in the section San Juan-Río Piedras-Caguas have been permanently lost. The surviving resources are spread-out along the Caguas-Ponce stretch, mostly concentrated within the Cordillera Central mountain range. Although their historic function has changed the *casillas de camineros* in the **Carretera Central** remain an identifiable resource due to their iconic and repetitious architectural style. Some of them have become private dwellings; others are still public resources administered by government agencies like DTOP or the *Instituto de Cultura Puertorriqueña* (ICP), while others are managed by municipal authorities. Public or privately owned, in use or abandoned, the *casillas de camineros* are a very important contributing component to the **Carretera Central's** historic significance (**Fig. 11**) (**Table 2**).

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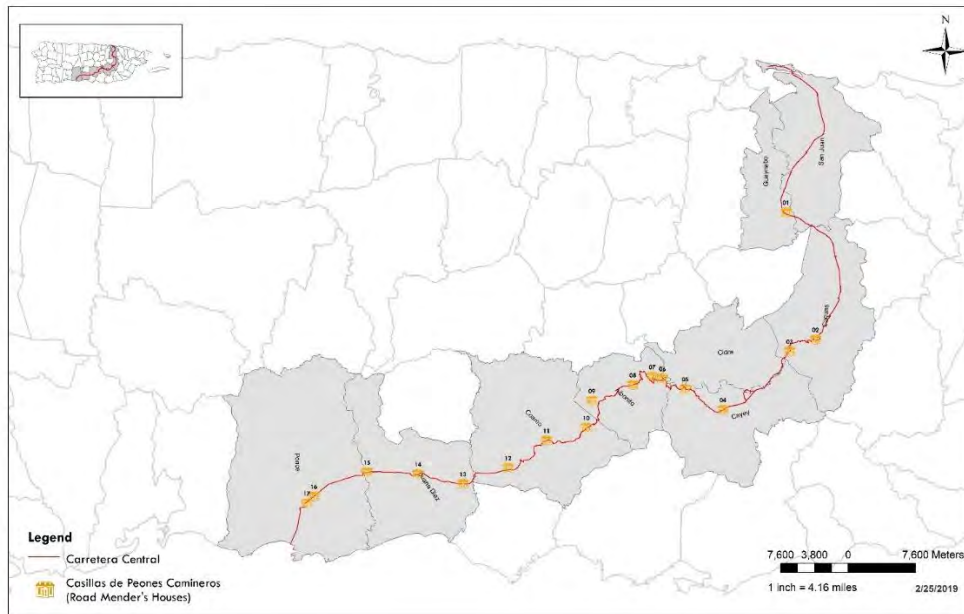


Figure 10. Map with the location of the seventeen (17) *casillas de camineros* in the **Carretera Central** (Map prepared by Eduardo Cancio González, Information System Specialist, PRSHPO, 2019)

Table 2. The seventeen (17) *casillas de camineros* in the **Carretera Central**

CASILLA	LOCATION	MUNICIPALITY
Casilla #1	PR-8834, Km.	Guaynabo
Casilla #2	PR-1, Km. 40.9	Caguas
Casilla #3	PR-1, Km. 47	Caguas
Casilla #4	PR-14, Km. 70.8	Cayey
Casilla #5	PR-14, km. 64.3	Cayey
Casilla #6	PR-14, Km. 59.9	Aibonito
Casilla #7	PR-14, Km. 57.7	Aibonito
Casilla #8	PR-14, Km. 51.7	Aibonito
Casilla #9	PR-14, Km. 45.9	Aibonito
Casilla #10	PR-14, Km. 40.5	Coamo
Casilla #11	PR-14, Km. 34.3	Coamo
Casilla #12	PR-14, Km. 27.8	Coamo
Casilla #13	PR-14, Km. 21.8	Juana Díaz
Casilla #14	PR-14, Km. 16.4	Juana Díaz
Casilla #15	PR-14, Km. 10.3	Juana Díaz
Casilla #16	PR-14, Km. 3.5	Ponce
Casilla #17	PR-123 #1124	Ponce Playa

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Figure 11. Photographs of the seventeen (17) *casillas de camineros* in the **Carretera Central**. The order of the photographs below is correlated with the numbers depicted in Figure 9 AND Table 2. (Photos, Juan Llanes Santos, 2018 - 2019)



Casilla #1. On State Road 8834, in the municipality of Guaynabo. This section of the road was part of the **Carretera Central** (PR-1, km. 22.7). This is the only *casilla de caminero* left designed as a single-family unit. It's currently a private dwelling.



Casilla #2. Currently abandoned, the casilla is in PR-1, km. 40.9, in the municipality of Caguas.

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Casilla #3. Part of a school complex today (*Escuela Luis Muñoz Grillo*), the casilla is located on PR-1, KM. 47, in Caguas.



Casilla #4. Located in Cayey, PR-14, Km. 70.8. Built in 1894, is currently used as a Cultural Center.

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Casilla #5. Located on PR-14, km 64.3, Cayey. Currently a private dwelling.



Casilla #6. Abandoned *casilla de camineros* in PR-14, km. 59.9, Aibonito.

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Casilla #7. This casilla, a private dwelling today, is located in PR-14, km. 57.7, in the municipality of Aibonito.¹⁰



Casilla #8. Located in Aibonito, on PR-14, km. 51.7, this 1885 *casilla* is used today as a Cultural Center, administered by the ICP.

¹⁰ The owner of this casilla, eighty-two years old Mrs. Maria Rolón was born at this very same building. His father was the last *peón caminero* occupying the property under such title.

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Casilla #9. Located in Aibonito in PR-14, km. 45.9. Built around 1880, it is currently used as a Visitors Center. This *casilla* was used as hospital for wounded soldiers during the *Batalla de Asomante* as part of the 1898 Spanish American War.



Casilla #10. PR-14, km. 40.5 in Coamo. Built around 1880, it's currently used as a private residence. This *casilla* witnessed the *Batalla de Asomante* during the Spanish American War of 1898.

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Casilla #11. This *casilla de caminero* in PR-14, km. 34.3, near Puente Río Coamo, witnessed a battle between Spanish and US troops in August 8-9, 1898. Currently used as a Visitor Center in Coamo.



Casilla #12. Located in Coamo on PR-14, km. 27.8. Built around 1880, currently a private residence, this is one of the best preserved *casillas*, with its original doors and windows.

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Casilla #13. An abandoned casilla de camineros in PR-14, km. 21.8, Juana Díaz.



Casilla #14. Abandoned casilla, located in Juana Díaz on PR-14, km.16.4.

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Casilla #15. Located on PR-14, km. 10.3 in Juana Díaz. Built in 1886, this abandoned *casilla* was used by DTOP until the 1950s. It served as a warehouse for an agricultural firm and later became the well-known brothel *El Reloj*.



Casilla #16. Located on PR-14, km 3.5, in the municipality of Ponce. Built in 1886, currently abandoned, the building was used by DTOP well into the 1980s.

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Casilla 17. Beyond recognition, this construction practically absorbed what used to be a *casilla de camineros* at Playa Ponce, PR-123, #1124. Some of the thick masonry walls from the *casilla* still visible in the building's interior.

Many other components, less conspicuous than the bridges or the *casillas de camineros*, but just as essential, were built as part of the engineering needs required to construct a 19th century, 134 kilometers road through a topography that combines flat stretches of land with densely wooded mountain ranges, in a tropical zone. The records indicate that around sixteen (16) *pontones*, one hundred and twenty-one (121) *tajeas* and *tajoas*, usually referred to as *alcantarillas* (drainage sewers), and six (6) retaining walls were built to overcome terrain depressions, to allow passage over small water bodies like streams and creeks, or to allow water running down from the high-grounds to pass under the road without causing damages to either the 19th century macadam fabric or the later 20th century asphalt or concrete road.¹¹

¹¹ Juan E. Castillo. *La Carretera Central. Su Historia*. *Revista de Obras Públicas de Puerto Rico*, Diciembre 1929, Año VI, Número 72, 316-320. Using the 19th century engineering definitions, a pontón is a small bridge with a 4 to 6 meters span; tajeas have a .75 to 1 meter span; and tajoas are even smaller.

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Many of these elements have disappeared due to the expected modern improvements on the road. Many others have been covered by the layers of asphalt or concrete laid on the historic route since the 1920s. Still, each one of the extant components mentioned above are character defining features and contributing resources to the historic significance of the most important road ever built in Puerto Rico.

Constructions like the *pontones* and *alcantarillas* below, all 19th century resources, are found throughout the **Carretera Central**, many unrecorded, undocumented and forgotten by the historic accounts and even by the common user of the road, as many of these resources are not visible from the upper surface. The pictures shown below correspond to selected surveyed resources within the section of the **Carretera Central** (see Section 8), comprised in the municipalities of Caguas, Cayey, Aibonito, Coamo and Juana Díaz, the best preserved section of the old road. (**Fig. 12**)

Figure 12. Municipality of Caguas



PR-1, Km. 43, Caguas. The neighbors near this alcantarilla recalled that this *tajea* is just as high as the one shown in the next page, but sediment has built-up through the years. Both structures are just one hundred (100) meters apart.

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A beautiful and well preserved 19th century tajea in PR-1, Km. 43.1, Caguas

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Municipality of Cayey



A brick and stone alcantarilla, located at PR-1, Km. 51.5, Cayey.



Alcantarilla, PR-1, 50.8, Cayey.

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With PRSHPO staff member in the center to provide scale, the impressive *pontón* at the left is in PR-14, Km. 66.7. The tunnel like *tajera* on the right is located on PR-14, Km. 67.5. The yellow structures at the top in the right-hand picture are the safety blocks at the edge of the above **Carretera Central**.

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The outside and inside of a tunnel like *tajea* located at PR-14, Km. 67.7, in Cayey.

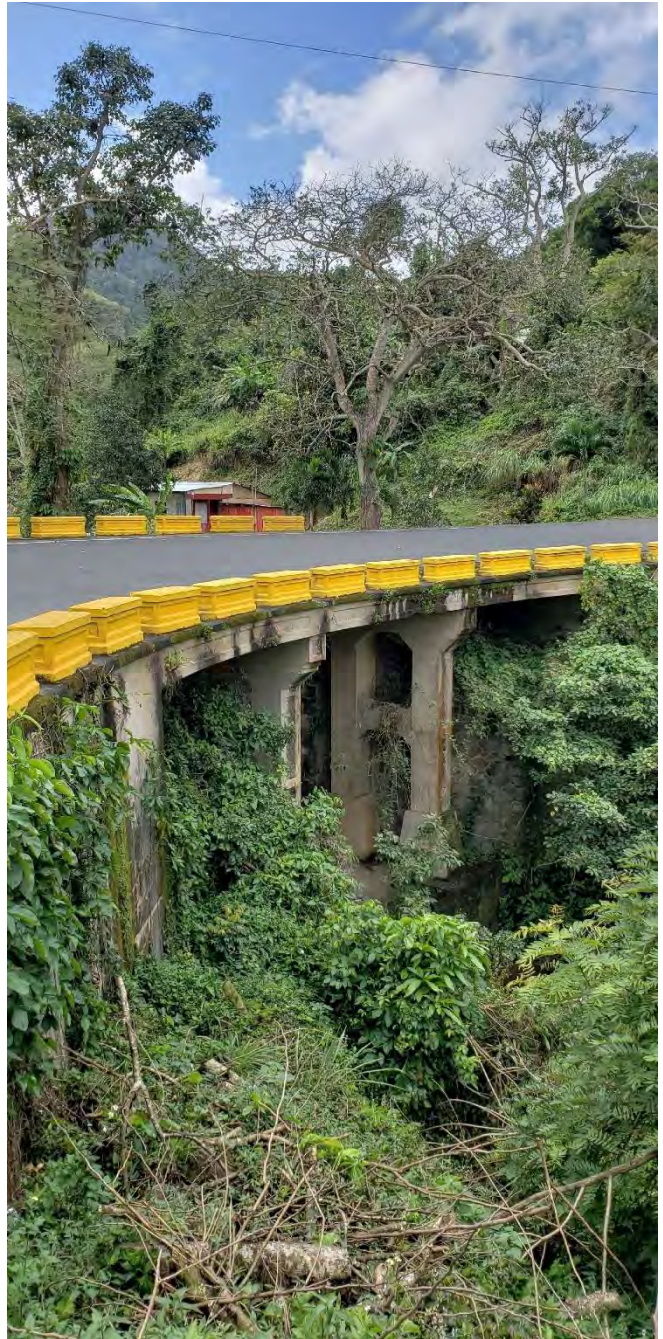
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Municipality of Aibonito

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This impressive *pontón*, known as Puente Gómez, is in PR-14, Km. 61.9 in Aibonito. The picture on the right shows the well-designed and aesthetically early 1930s concrete columns that support the road expansion, allowing for an easier curve as the use of motor vehicles demanded a wider **Carretera Central** (see Section 8).

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These two *alcantarillas* are located four hundred meters apart. The one on the right is in PR-14, Km. 59.4, while the other is in PR-14, Km. 59.0, both in the municipality of Aibonito.

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Views of a well-preserved *alcantarilla* in PR-14, Km 58.7, Aibonito, with the PRSHPO's staff.

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Two pontones in Aibonito. The one at the top is in PR-14, Km. 48.3. The one at the bottom is in PR-14, Km. 51.1.

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The top portion of this impressive *pontón*, in PR-14, Km. 40.3 in Coamo, was partially destroyed by the Spanish troops during the Spanish American War to delay the US Army advance using the **Carretera Central** on their way to San Juan (See, Section 8).

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A narrow one-meter wide *tajera* located in PR-14, Km. 37.5, Coamo



A hidden beautiful *pontón* in PR-14, Km. 37.9 in Coamo.

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Alcantarilla in PR-14, Km. 36.6, Coamo, showing three different construction periods: the late 1920s ziggurat type columns supporting the first short expansion of the road (top picture), the six-meters long tunnel like brick and stone 19th century tajea that supported the original travel-way and the early 1940s arched double column that supports an additional and wider expansion to the **Carretera Central**.

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On the picture above, PRSHPO staff searching for the best route to access the tajera shown below, located at PR-14, Km. 35.4 in Coamo.

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Municipality of Juana Díaz



A brick, masonry and stone alcantarilla at PR-14, Km. 18.9 in Juana Díaz.



A brick, masonry and stone alcantarilla at PR-14, Km. 11.5 in Juana Díaz.

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A wonderful brick and stone alcantarilla that expands the entire width of the road above, allowing water to run through it without causing any damages to the road. The tunnel like structure is located at PR-14, km. 18.0 in Juana Díaz.

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This marvelous brick and stone *tajera*, hidden from the above view, is located at PR-14, Km. 16.7 in Juana Díaz.



Another hidden treasure from the 19th century, this brick and stone structure, is in PR-14, Km. 19.7 in Juana Díaz. Because of its size, over four meters in span, using 19th century standards, the structure could be considered a *pontón*.

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The map below shows the approximate location of the *pontones*, *tajeas* and *tajoas* shown previously. As it can be seen, they concentrate within the municipalities of Caguas, Cayey, Aibonito, Coamo and Juana Díaz, the best preserved section of the old **Carretera Central**. (Fig. 13)

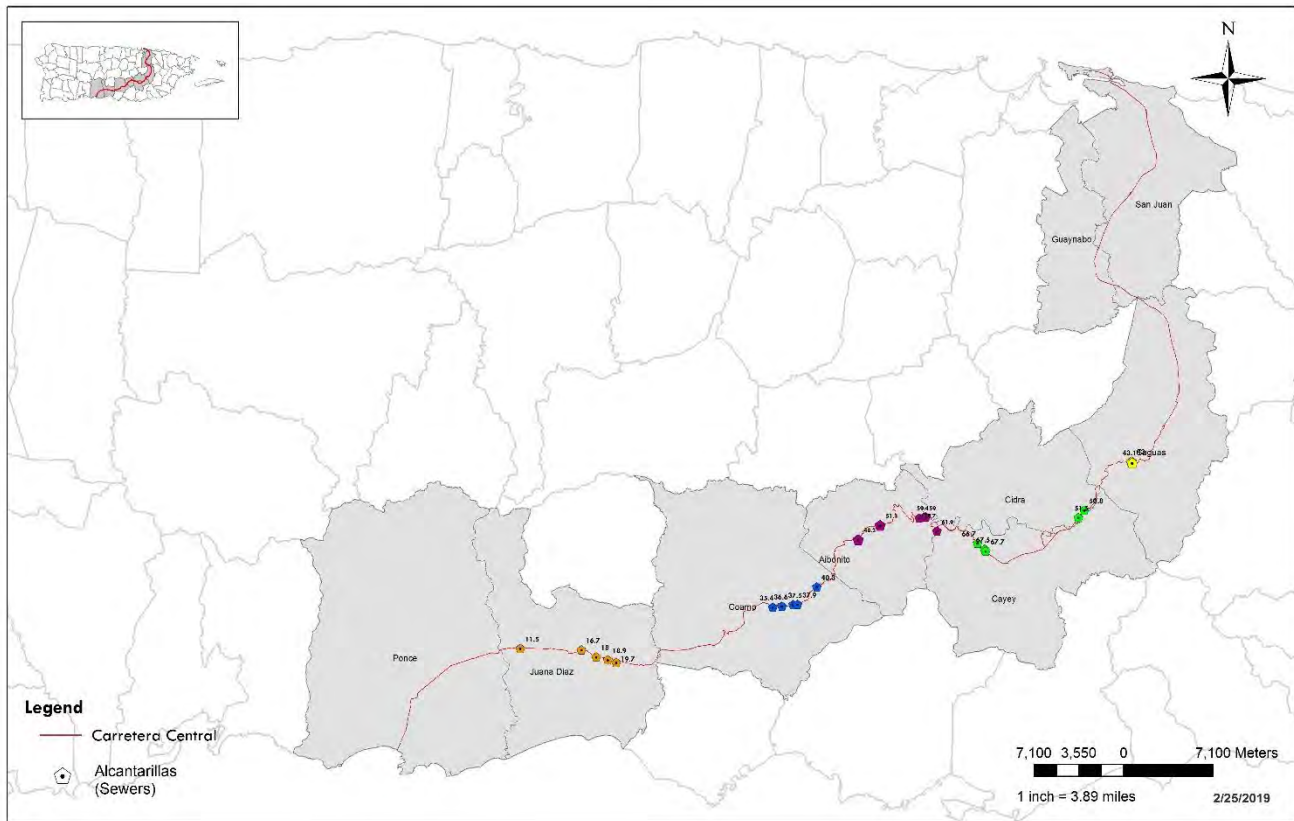


Figure 13. Map showing the locations of the previously shown *alcantarillas* (Map prepared by Eduardo Cancio González, Information System Specialist, PRSHPO, 2019)

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8. Statement of Significance

Applicable National Register Criteria

(Mark "X" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B** Property is associated with the lives of persons significant in our past.
- C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D** Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations

(Mark "X" in all the boxes that apply.)

Property is:

- A** Owned by a religious institution or used for religious purposes.
- B** Removed from its original location.
- C** A birthplace or a grave.
- D** A cemetery.
A reconstructed building, object, or structure.
- E** A commemorative property.
- F** Less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

(Enter categories from instructions.)

Transportation _____

Engineering _____

Social History _____

Period of Significance

1860-1970 _____

Significant Dates

1846-1866 _____

Significant Person

(Complete if Criterion B is marked above.)

Cultural Affiliation

Architect/Builder

Camprubí, Raimundo (engineer) _____

Gadea, Enrique (engineer) _____

Maese, Manuel (engineer) _____

López de Bayo, Manuel (engineer) _____

Lubelza, Timoteo (engineer) _____

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Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The **Carretera Central** is statewide significant under Criterion C in the areas of transportation and engineering. The one hundred and thirty-four kilometers road was built between 1846 -1886, connecting the island's northern political capital, San Juan, with the southern city of Ponce, the most significant economic center during the nineteenth century. Along its route, the **Carretera Central** connected the municipalities of Río Piedras, Caguas, Cayey, Aibonito, Coamo and Juana Díaz. Considered by many locals and foreign observers as the best road in this side of the New World by the time of its completion, the **Carretera Central** was an engineering marvel that crossed some of the most challenging terrain in the island, demanding from its designers and builders, an innovative approach. The engineering's innovations and craftsmanship applied to the **Carretera Central** still evident in many of its extant components like the bridges, road menders houses, sewers and the road itself. The property is also significant under Criterion A in Social History as its design and planning involved not only technical and engineering skills, but also responded to commercial, political and military considerations. The construction of such a long, high quality road through such difficult landscape as the *Cordillera Central* became an island wide effort, demanding a vast use of human resources (forced and free labor). The property's period of significance directly correspond to the **Carretera Central's** initial planning in 1860, until the road was displaced as the main road in the island by Highway 52 in 1970.

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Narrative Statement of Significance (Provide at least one paragraph for each area of significance.)

The Carretera Central: a historic overview

The Carretera Central in the 19th Century

“The finest road in the western hemisphere is to be found in the island of Puerto Rico; in fact, it is a road equaling, for surface and as a feat of engineering skill, any in the world, with the exception of some of the marvelous roadways across the Swiss Alps”. With those words, William Dinwiddie described the **Carretera Central** in his 1899’s work *“Puerto Rico. Its Conditions and Possibilities”*.¹² Praises along the same lines were done by the American traveler and writer Albert Gardner Robinson:

*“I should not know where to go in the United States to find a continuous hundred miles of highway to rival, in its general excellence, the road between Ponce and the capital of the island of Porto Rico”.*¹³

The beauty of the scenery crossed by the **Carretera Central**, specially through the Cordillera Central, was also widely praised by the new arrivals. In 1899, after coming to the island to bring six hundred American flags for the local schools donated by an army post in New York, Lieutenant Colonel Allan C. Bakewell, on his way to Ponce from San Juan, was caught by the imposing landscape:

*“I proceeded to Ponce by way of the military road. A report of my journey would be incomplete without a description of this road. It was built entirely of macadam, and as much care is bestowed upon it as on those in our prominent parks. It might be a road through the Garden of Eden, so verdant and beautiful is the surrounding scenery, so fertile the plants and plateaus. Every turn of the road disclosed some new caprice of nature, some rare blending of light and shade. On every side, over every hill and vale, nature’s green tapestry is spread and draped in all its virgin purity. The air is fragrant and soft like that of a huge conservatory. The poverty of my words prevents me from doing justice to the resplendent beauty of this portion of our Emerald Isle”.*¹⁴

As the US Army began the physical occupation of Puerto Rico, soon to become *Porto Rico*, as part of the military actions conducted during the Spanish American War in 1898, many Americans observers, reporters, adventurers and writers, descended upon the island with their typewriters and Kodak cameras to see first-hand the new acquired territory in the exotic Caribbean. They traveled through the

¹² William Dinwiddie, *Puerto Rico. Its Conditions and Possibilities*. New York: Harper & Brothers Publishers, 1899, 32.

¹³ Albert Gardner Robinson, *The Porto Rico of To-Day. Pen Pictures of the People and the Country*. New York: Charles Scribner’s Sons, 1899, 108.

¹⁴ Wilbur F. Brown, *History of the gift of six hundred national flags to the schools of Porto Rico*. New York. Privately Published by the Lafayette Post, 1899, 27-28.

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island, attempting to capture in their words and images the economic possibilities, the social and political conditions and the cultural practices of the new colony, as seen through the eyes of the new empire. The island's infrastructure, port facilities and land transportation, were quickly evaluated as there were considered essential by the new economic forces and their agents.

The **Carretera Central's** obvious construction challenges, the engineering marvel of its design, planning and undertaking, were highly appreciated and praised by the newcomers, civilians and military alike. Ironically, the history of such an impressive road, with almost forty-years in the making, was practically absent as a subject of interest from our nineteenth century historians. It won't be until the third decade of the 20th century that the well documented work done by Juan E. Castillo, previously mentioned, appeared in the *Revista de Obras Públicas*. More recently, writers like Miguel Meléndez Muñoz, historians María de los Angeles Castro and Guillermo Baralt, and industrial archeologist Luis Pumarada O'Neill, provided a closer academic look at the **Carretera Central's** construction history. While the *Archivo General de Puerto Rico* is our most important provider of primary sources for this nomination, the works produced by the authors mentioned above are the most significant secondary sources.¹⁵

The construction of the **Carretera Central** responded to Puerto Rico's social and economic changes during the 19th century. During the 1500s-1700s, Puerto Rico went through different stages of economic trends and served different purposes within the Spanish imperial design. The island started as a gold producing colony, but the resource was quickly depleted by mid sixteenth century. The scarcity of the precious mineral oriented the local economy towards agriculture. Simultaneously, the Spanish conquest of the mineral rich areas of New Spain (Mexico) and Perú transformed the island from a small contributor in Spain's commercial scheme to a major player in Spain's imperial project. Puerto Rico's geographic position at the eastern edge of the Caribbean made the island (especially San Juan, the Capital) one of the key frontier outposts of Spain's West Indies dominions. The massive military

¹⁵ See, Miguel Meléndez Muñoz, *Cuentos de la Carretera Central*, Barcelona: Ediciones Rumbos, 1963. See, María de los Ángeles Castro, *La Construcción de la Carretera Central en Puerto Rico (Siglo XIX)*. Tesis sometida al Departamento de Historia de la Facultad de Humanidades de la Universidad de Puerto Rico en cumplimiento del requisito parcial para optar al grado de Maestro en Artes. Río Piedras, Universidad de Puerto Rico, 1969. See, Guillermo A. Baralt, *Una de cal y otra de arena. Panorama histórico de la construcción en Puerto Rico, 1493-2004*. Asociación de Contratistas Generales de América, Capitulo de Puerto Rico, 2008. Juan E. Castillo and Luis Pumarada's works have been cited in previous references.

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constructions built in San Juan that turned the city into a first-order military bastion, became the legacy of that period in local history.

However, by the 19th century, Puerto Rico's role in the Spanish imperial policies was inverted in many ways. The island went from being a military outpost to be an important contributor to Spain's economic coffers. Sugar became the most important export commodity for most of the first seven decades of the 1800s. In his 1788 work, Fray Iñigo Abbad y Lasierra indicated that 3,156 *cuerdas*¹⁶ were planted with sugarcane island wide, producing 273,725 pounds of sugar.¹⁷ By 1830, there were 11,000 *cuerdas* covered by the sweet plant, producing over thirty-four million pounds of sugar.¹⁸ In 1862, fifty-five thousand *cuerdas* were used as sugarcane fields.¹⁹ By the time Lasieras's third edition was published in 1866, brilliantly annotated, updated and corrected by José Julian Acosta, Puerto Rico produced 92,511,988 pounds of sugar.

The last decades of the 19th century saw the golden age of the coffee industry in Puerto Rico. Growing in the island since its insertion in 1736, by the early 19th century coffee was one of the main crops produced in Puerto Rico for local consumption. It was also a very significant exporting crop. Alejandro O'Reilly in his 1765 report to the Spanish Crown indicated that coffee was already being exported from Puerto Rico, albeit in small quantities.

Usually associated with the mountain region, during the 18th century and early 19th century, coffee was part of the coastal landscape. The plant was frequently mentioned by Abbad y Lasierra as part of the coastal towns' crops. When describing the region between Salinas and Santa Isabel, Abbad y Lasierra mentioned that "*Cogen mucho café, de que cultivan hermosas plantaciones a lo largo de la costa*".²⁰ When describing the flat coastal lands of Ponce, the East African plant became again the most relevant crop:

¹⁶ One *cuerda*, sometimes called the "Spanish acre" because of their nearly same size, equals to 0.971 acre.

¹⁷ Iñigo Abbad y Lasierra, *Historia geográfica, civil y natural de la isla de San Juan Bautista de Puerto Rico*. Nueva edición, anotada en la parte histórica y continuada en la estadística y económica por José Julián de Acosta y Calbo. Ediciones Doce Calles, 2002, 409

¹⁸ Pedro Tomás de Córdova, *Memorias geográficas, históricas, económicas y estadísticas de la isla de Puerto Rico*. San Juan: Imprenta del Gobierno, 1831-33, Vol. 2, 406.

¹⁹ Francisco A. Scarano, *Haciendas y barracones: azúcar y esclavitud en Ponce, Puerto Rico 1800-1850*. Ediciones Huracán, 1992, 52.

²⁰ Iñigo Abbad y Lasierra, *Historia Geográfica*, 300. ("Coffee is collected in great quantities; grow in beautiful plantations along the coast"). (Translation is ours)

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*“La principal cosecha es la de café: asciende algunos años a 187,932 arrobas que todo pasa a los extranjeros, igualmente que las maderas y ganados sobrantes. Toda la tierra que se extiende a lo largo de la costa está poblada de haciendas de café que fructifica pasmosamente”.*²¹

However, during the years 1800-1840, sugar became the dominant crop in the coastal flatlands, displacing the coffee production and the coffee producers up into the mountain regions. In the highlands, the coffee plant found the ideal fertility, humidity, temperature and shade (as coffee was planted under large shaded trees, hardly available in the coast) for its perfect blossom. Eventually, the Puerto Rican coffee became a coveted commodity highly appreciated and sought after by the gourmet consumers, especially those in the European market. By 1846, a hundredweight of Puerto Rican coffee was sold in the international market for six pesos; by 1860, it was twice that much. By 1886, the price of one hundred pounds sold for twenty-one pesos. While in 1894, it cost thirty-two pesos to acquire one *quintal* (100lbs.) of the best Puerto Rican coffee in the international market.²²

The development of the sugar industry in the initial decades of the 19th century brought significant changes, both in the human geography and the spatial distribution of the production zones. During its early stages, sugar production was mostly concentrated in the northern region of the island. However, the 19th century sugar boom gravitated heavily towards the southern, southwest and southeast coastal regions. The fertile lands south of the Cordillera Central became the new center of economic power. Correlated with the sugar production, the significant increase of coffee and tobacco as international commodities, added an important economical layer developed in the high mountains.

It didn't take long to realize that the new production trends demanded the imperative need of establishing a logical network of roads, able to transport goods and people to and from the interior to port facilities in the coastal towns. An improved road system would also facilitate the proper supervision, from San Juan, of all the political and economic activities conducted in the most productive section of the island, the southern region. It was quickly realized that the land-line connection of the political head (San Juan) with the economical heart (Ponce) was a must. This concern was part of a long up-hill fight for the improvement of the local road network.

²¹ Ibid. 327. (“Coffee is the main crop, some years ascending to 187,932 arrobas all going to the foreigners, just like the surplus of wood and cattle. All the land that extends along the coastline is full of coffee haciendas that are astonishingly fruitful”). (Translation is ours)

²² Guillermo A. Baralt, *Yauco o las Minas de Oro Cafetaleras*, 1756-1898. San Juan: Model Offset Printing, 1984. 37

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By the 1800s, comments related to the poor conditions of the island's roads were extremely common. The naturalist Pierre Ledrú, that arrived in Puerto Rico in 1797, as part of a French scientific expedition, commented that the bad conditions of the roads and the absence of bridges and dinghies to get across the rivers, made the transportation of goods very difficult, doubling its costs.²³ In an 1809 report, Pedro Irizarry, mayor of San Juan, mentioned that:

*"el abandono sin semejante con que se han visto hasta el día los puentes y caminos reales entristece y desanima al hombre más activo y laborioso en la agricultura...Son tan sumamente ásperos, pantanosos, estrechos, montuosos, y peligros, los más de los caminos y puentes de toda la isla, que son más propios para pájaros que para hombres".*²⁴

Even at the time that the **Carretera Central** was being built, the private and public interest demanded that the government develop a coherent road system. In 1882, José Ramón Abad shouted in his work *"Puerto Rico en la Feria-Exposición de Ponce"*:

*"Parece mentira, pero es la verdad, que un viaje de Ponce a Mayagüez, por tierra, cuesta más y absorbe tanto tiempo como una expedición de Madrid a Paris; y para ir de un extremo a otro de la isla se necesita gastar tanto como para ir de cualquier puerto de la Isla a Nueva York".*²⁵

However, all these comments and requests for the improvements of the local roads were not strange on the upper echelons of the island's political structure. Strong attempts for such improvements were made under the governorships of *Capitanes Generales* like Gonzalo de Aróstegui (1820-1822), Miguel de la Torre (1822-1834), Santiago Méndez Vigo and Fernando de Norzagaray (1852-1854), among others. The concern showed by these governors was parallel with the economic and demographic growth of the island. By the beginning of the 19th century, the population ranged around 155,000 inhabitants. By the end of the century, it had reached the amount of almost one million. When estimated, the numbers suggest that the population grew at a pace of 90,000 persons

²³ Eugenio Fernández Méndez, *Crónicas de Puerto Rico. Desde la Conquista hasta nuestros días (1493-1955)*. Río Piedras: Editorial de la Universidad de Puerto Rico, 1981, 343, *Relación del Viage a la Isla de Puerto Rico, en el año 1797 por el naturalista francés, Andree Pierre Ledrú*. (Fragmentos)

²⁴ Eugenio Fernández Méndez, *Crónicas de Puerto Rico*, 361-362, *Informe de Don Pedro Irizarry, alcalde ordinario de San Juan, sobre las instrucciones que debían darse a Don Ramón Power, Diputado por Puerto Rico ante las Cortes Españolas para promover el adelanto económico de la isla*. Año 1809. ("the abandonment without comparison until present time of the bridges and royal roads sadden and discourages the most active and hardworking man in agriculture...They are so rugged, swampy, narrow, hilly, and dangerous, that most of the island's bridges and roads seem to be more suitable for birds than for men") (translation is ours).

²⁵ José Ramón Abad, *Puerto Rico en la Feria-Exposición de Ponce de 1882*, Ponce, 1885, 24. ("It seems unbelievable, but it's true, that a trip from Ponce to Mayaguez, by land, is more expensive and it takes more time than a trip from Madrid to Paris; and to go from one end of the island to the other, costs as much as to travel from any port in the island to New York" (translation is ours).

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per decade. The increase in population, the spatial geography of the production centers, combined with the dynamic of internal and international commerce, demanded a better and dependable road system.

Slowly but surely, improvements were made. Under Miguel de la Torre, a network of municipal roads were initiated, including a solid macadam road from San Juan to Río Piedras, the construction of a navigational channel between the lagoons connecting Santurce, San José and Piñones; and the placements of dinghies to provide transportation in some of the most important rivers in the island.²⁶ On February 26, 1838, in an attempt to provide manpower for needed public works, Governor López Baños passed a royal decree making it mandatory for unemployed *jornaleros* to report to the municipal authorities to work on the local roads. In 1842, Governor Mendez Vigo established the *Junta Directiva de Caminos y Canales*, centralizing in this state designated office, the faculty to acquire funds for road construction. Under Governor Norzagaray, a plan for state roads (first and second order) was drafted by Antonio Sanchez Nuñez, Chief Engineer of *Dirección de Obras Públicas*, agency established in 1854.²⁷ However, it was not until the *Capitán General* Fernando Cotoner y Chacón (1857-1860), that a comprehensive road plan was developed.

Just like Miguel de la Torre had done before, Governor Cotoner traveled the island in order to get a personal understanding of the conditions the roads were in. Departing San Juan on March 5, 1857, going west along the coast, it took over two months for the governor to get back to La Fortaleza, completing the trip on May 10, 1857. Accompanied by a group of assistants, among them, engineer Timoteo Lubelza, a road-plan was drafted along the trip. The memoir, prepared by Lubelza, begins with a narrative describing the bad condition of the roads. Lubelza explained, that since established in 1854, the *Junta de Caminos* had barely completed eight *leguas*²⁸ (about 48 kilometers) of roads; six of them from San Juan to Caguas (through Río Piedras) and the other two *leguas*, from San Juan, through Bayamón, reaching *Sabana del Palmar* (Comerío). The works on the second route were held up by the Governor, as it was advised to utilize the efforts, and the money, to work on extending the completed road from San Juan to Caguas all the way to Guayama, unifying the northern and southern parts of the island. However, even this proposed route was questioned in the very same draft, as it seemed that

²⁶ AGPR. Fondo: Obras Públicas. Serie: Carreteras. Legajo 217. Caja 2317.

²⁷ Luis F. Pumarada O'Neill, *Los puentes históricos de Puerto Rico*. Autoridad de Carreteras y Transportación de Puerto Rico, Diciembre de 1991, 17.

²⁸ A *legua*, as established by 1801, was approximately 20,000 feet. Using this standard, one *legua* equals approximately six kilometers.

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very few municipalities would benefit from it. The plan proposed the construction of three mayor roads: one running through the center of the island from east to west, while the other two would run perpendicular from north to south, sectioning the island in three areas. The municipalities in between would be responsible to build the secondary roads to connect to the three major highways, so the interior towns would have multiple outlets to the coastal cities. It was suggested in the plan also, that to speed up the construction process, the island be divided in four districts named San Juan, Mayaguez, Caguas and Ponce districts, each with a Chief Engineer in charge. Timoteo Lubelza, a figure associated with the eventual construction of part of the southern section of the **Carretera Central**, was designated as Chief Engineer of the Ponce District. By the governor's order, it was responsibility of the four Chief Engineers to join efforts in detailing the works to be done.²⁹

Although sketchy and inconclusive, the plan drafted brought into consideration significant aspects. For one, the need to unify the northern and the southern sides of the island through a continuous road. Also, that the selected route should be well-thought-out, not only from the engineering perspective, but also to maximize the benefits. The proposal also brought into the plan the need for the municipalities to actively participate in the process, as the undertaking was for their benefit.

By 1858, a more detailed plan, known as the *Plan Carretero de la Isla de Puerto Rico*, was developed by the *Cuerpo de Estado Mayor*, the military component in charge of the island's defense.³⁰ As directed by Governor Cotoner, the new *Plan Carretero* considered the commercial and agricultural needs. An additional aspect was included into the road plan, the military defensive needs were considered as well. When carefully read, the economic elements were subordinate to the military provisions.

The plan correctly argued that the island's economy was mostly oriented towards the exportation sugar, coffee and tobacco, which were highly coveted in the United States and European markets. The most important port facilities were located at Ponce, Aguadilla, Mayaguez, Guayama and Naguabo. However, there was an absence of dependable roads connecting this coastal towns among themselves. Just as important, the absence of well-developed roads kept the interior towns in isolation, making impossible or extremely difficult, that their rich agricultural production could reach the ports. As previously stated, by this time coffee and tobacco were produced mostly in the high grounds within the

²⁹ AGPR. Fondo: Obras Públicas. Serie: Carreteras. Legajo 608. Caja 2716.

³⁰ Archivo General Militar de Madrid. Fondo documental de la Sección de Ultramar del Ministerio de la Guerra. Serie: Correspondencia sobre Obras Públicas. Título: Plan general de caminos de Puerto Rico. Código de Referencia: 5632.3.

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mountain range. As expressed in the plan, a homogenous road system would eliminate the interiors dependence and subordination to the coastal cities. The ability to properly trade their coffee, tobacco, cattle and precious woods, would bring to the towns in the interior the economic advantages already enjoyed by the cities in the coast.

The *Plan Carretero de Puerto Rico* included some of the ideas already proposed in Luberza's 1857 draft, but within a much wider scope. One central road was to run across the island from the eastern town of Humacao, traversing through Caguas and Utuado, finishing in Mayaguez or Aguadilla. A transversal road was to run north to south, from Arecibo to Ponce, crossing Utuado. Another road from Guayama to San Juan, crossing Caguas. The two transversal roads actually divided the island in three sections, which explains the creation of six brigades, two per section, to study the engineering requirements and needs of each section. Additional roads were planned to connect Ponce to Guayama, and Arecibo to San Juan, in a road along the coast line. First order roads were also projected for Caguas to Naguabo, passing Gurabo and Juncos. Another from Caguas to Utuado, running through Cidra, Aibonito and Barranquitas. A "*ramal carretero*" (a road for ox-carts) was to connect Humacao to Naguabo, as this last town was considered the best access to Vieques island. Shorter secondary branches were planned to be extended from the road designated as Road 1, which was ambitiously projected to circumvallate the entire island along the coast line (which is accomplish today by PR-2 and PR-3). Completing the network, the municipalities were expected to build multiple roads to connect their urban centers and productive zones to the state roads (**Fig. 14**).

The layout of the *Plan Carretero* had also a military purpose, as previously stated. The narrative of the plan was clear that military considerations should supersede the commercial and agricultural ones. The Old Empire still valued Puerto Rico's strategic importance. The new form of energy used in the maritime transportation, steam, made the island easily accessible: fifteen days from Madrid and London; thirteen days from Bordeaux; seven days from New York; three to four days from Florida. The protection of the colony, now a significant contributor to Spain's treasury, was still a matter of great concern.

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The *Cuerpo de Estado Mayor* viewed two possible scenarios for a military invasion of the island by a foreign country: a direct attack upon San Juan or a blockade upon the city, accompanied by a land attack on an unprotected beachhead, with the last scenario been the most probable.³¹ The road network prepared in the *Plan Carretero*, militarily speaking, divided the island in two sections, the Eastern Sector and the Western Sector, with Caguas and Utuado as the military strongholds on each sector, respectively. The two sites where to relate to the Capital, but far enough from naval gunfire or a land attack. Almost every important first-class road in the *Plan Carretero*, either running east to west or north to south, had Utuado and/or Caguas as a meeting or departing point, facilitating the movement of troops and equipment to protect their sector of responsibility.



Figure 14. An 1860 map, with the *Plan Carretero de la Isla de Puerto Rico*.³²

³¹ Thirty-eight years later, the US forces proved right the *Cuerpo de Estado Mayor*'s analysis, as the blockade of San Juan's port (beginning in May 1898) and a land attack in a distant and unprotected beachhead (Guánica, July 25, 1898) was the basic strategy used for the island's invasion during the Spanish American War of 1898.

³² AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Caja 2652.

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In the 1858 *Plan Carretero de la Isla de Puerto Rico* there is no mention of a **Carretera Central** from San Juan to Ponce. In the plan, the connection between the two cities was made through secondary roads. Despite that omission, sometime around 1860, the idea of constructing a **Carretera Central** to connect the northern political capital with the southern economic capital took center stage in the *Plan Carretero*. However, the *Plan Carretero*, more a wish list than an actual project, moved at a very a slow pace for more than a decade.

Mostly due to lack of funds, less than sixty kilometers were built in the entire island between 1860 and 1872. On that last year, Governor Simón de la Torre finally got 750,000 pesetas allocated from the Ministerio de Ultramar to initiate the construction. But it remained an administrative contribution until 1875, when the monies were raised to 800,000 pesetas and the actual study, planning and construction began.³³ By the time the project went full speed ahead in 1875, the forty-one kilometers between San Juan-Río Piedras-Caguas, and the seventeen kilometers between Juana Diaz and Ponce, had been mostly completed with the initiative and expenses provided by the municipalities themselves, reducing the distance of the future undertaking.³⁴

Between 1875 and 1886, when the **Carretera Central** was officially finished, the construction of the remaining seventy-six kilometers was completed against great odds. The Caguas-Juana Díaz section of the road threaded through the harsh topography of the Cordillera Central and its high mountains, deep valleys, river crossings and natural depressions. To overcome these natural obstacles, routes needed to be properly analyzed and tested with on-foot reconnaissance. Understanding the complex ground layout was a must to maximize efforts and minimize expenses, while maintaining the required quality.

³³ In his work, Juan E. Castillo, indicates that the actual process of construction began in 1874 (*Revista de Obras Públicas*, Diciembre 1929, 318). However, the documentation clearly sustains that it's not until 1875 when site inspections, planning and ground breaking was started.

³⁴ The fact that the section San Juan-Caguas was finished by 1859, and the section Ponce-Juana Diaz was finished by 1862, neither mentioned in the *Plan Carretero*, has made some historians dismiss these sections as part of the **Carretera Central**. For instance, as argued by well-known historian Dra. María de los Angeles Castro in her 1969 master's degree thesis, due to the construction chronology, Prof. Castro considers that the **Carretera Central** consists and refers to the stretch of road from Caguas to Juana Díaz, (see, María de los Ángeles Castro, *La Construcción de la Carretera Central*, 119-120). The construction of those two sections was possible due to the efforts of the mentioned municipalities, not the central government, adding weight to Dra. Castro's argument. However, considering that the early 1860s official documentation from the public works agencies, as well as from the central government and the Ministerio de Ultramar always refer to the "*Carretera de Primer Orden Número 1 de la Capital a Ponce*" when speaking about the **Carretera Central**, its sound to assume that the entire 134 kilometers were conceptualized as the **Carretera Central** from an early start. At the same time, when the central government absorbed those two sections in 1881 as part of the **Carretera Central**, a large section of the Juana Diaz-Ponce stretch had to be re-done to bring the road to the standards of First-Class Road. Thus, for the purpose of this nomination, those two sections are considered part of the 134 kilometers of the **Carretera Central**.

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The challenges opposed by Mother Nature required constant and careful planning. The plans, however, needed to be flexible in order to bring together the needed components for a successful undertaking: equipment, construction materials and human-labor.

Besides the physical ones, many other man-made obstacles had to be overcome before the successful completion of the **Carretera Central**: the recurrent funding problem, the delaying red-tape, the lack of technology, the reduced amount of qualified professionals both in the public and private sectors, the limited abilities of the municipalities to provide economic or manpower assistance and, the always mentioned, lack of laborers.

Throughout the entire construction period, the availability of the monies was always attached to the abundant red-tape. The financial ability of the local government was not as precarious as it is usually stated. A bigger problem than the lack of funds was the centralization and restrictions that came with the granted money. The availability of the monies didn't respond to a local determination. The money was to be available when Spain allowed it. Every determination had to have the approval of the authorities in Spain. Every route, bridge, *casilla de caminero*, construction design and direction, etc, had to be rubberstamped in the *Península* before it was implemented or built. If an approved route had to be changed due to problems or because a better approach was found, it needed the green light from overseas. This over management created a pervasive delay in the decision-making process that had a ripple effect upon the entire undertaking.

As expressed by María de los Ángeles Castro, the absence of specialized administrative agencies until well advanced the 19th century, put a strain on the **Carretera Central's** construction progress.³⁵ The tardiness in the establishment of agencies like *Dirección de Obras Públicas*, also known as *Jefatura de Obras Públicas*, didn't promote the early formation of a cadre of local engineers with extensive experience. The private sector had a similar problem. The lack of a tradition in road building in the island in general, reflected on the inability showed by the private contractors to face an undertaking like the **Carretera Central**. When it began in 1875, almost every section of the Central was announced as an open bid on the local newspapers so that contractors could make their proposals. Most of the time, no proposals were submitted by the established dateline. The work to be performed was then designated

³⁵ María de los Ángeles Castro, *La Construcción de la Carretera Central*, 120.

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as "*Administración*", meaning that the construction was to be financed and done by the *Jefatura de Obras Públicas* itself.

The **Carretera Central** was a macadam-finished road way into the twentieth century. Developed by the Scottish inventor John Loudon McAdam in the 18th century, this method of construction recommended that roads should be raised above the adjacent ground for good drainage and covered with a pavement made of two layers of crushed rocks, first with large rocks, and then with smaller stones; the whole mass well-compacted and bound with fine gravel or slag. In the island, this process translated into a very specific, detailed and painful artisanal undertaking. The entire **Carretera Central**, as a First-Class Road, had two layers of rocks, well rolled-flat and tampered down to a smooth surface. Before the rocks were placed, the existing ground was excavated one foot deep, removed and replaced with good clay to prevent the possible subsidence of the stone layers. The first rock layer was one foot thick, made of stones of one cubic foot in size when laid down on the ground (**Fig. 15**).



Figure 15. Laborers placing macadam.

These stones were hammered down and broken into the size of a regular fist. Once the first layer was done, a second layer of rocks six inches thick was laid on top and hammered to a smaller size than the first layer (**Fig. 16**). The two layers were then covered with an additional, two to three inches thick layer of pulverized dust made from the very same rocks used as foundation.³⁶

³⁶ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 1a. Caja 2106.

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Figure 16. Laborers crushing with hammers *in situ* the hard stones for the first layer.

Once all the three layers of crushed stones were at the required level, a rolling cylinder attached to a cart was used to tamper down the entire rocky mass. The cylinder was rolled over the surface a very specific number of times. First, ten runs were made with an empty cart; then, the cylinder was rolled again ten more times with the cart half-loaded; finally, twenty runs with a full load.³⁷ (Fig. 17)



Figure 17. Two types of rolling cylinders, both used in the **Carretera Central**. The one on the left was the oldest type, more frequently used in the **Central**. Local prisoners, and hundreds of inmates brought from Cuba, many Chinese among them, were used to perform the most physically demanding tasks in the **Carretera Central**, as the ones depicted in all the images above.

³⁷ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 22. Caja 2125a.

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As mentioned, the lateness in the application of technology, was detrimental on the construction expediency. When clearing through the *Cordillera Central*, a large amount of explosives in the form of powder was used. The gunpowder was bought from the field artillery units stationed in the island, mostly in San Juan. The use of explosives was probably the most “sophisticated” technology applied in the **Carretera Central**. Throughout most of the **Central’s** construction period, the shovel, the hammer, the sledge hammer and the pick were the most “advanced” tools employed, with the workers’ muscles as the main energy source. As the years went by, and as allowed by the funds granted, machinery and equipment were acquired and employed to release the enormous pressure upon the workers and accelerate the construction process. In 1879, nearly finishing the Caguas-Cayey section, and during the planning stage of the **Central’s** last and toughest section, the 19 kilometers between Cayey and Aibonito, an *E. S. Blake & Co.* type stone crushing machine was acquired, accelerating the process of crushing the hard stones used for the pavement and the foundation of structures like bridges and *alcantarillas*.³⁸

In 1879, to speed-up the process of the widely needed bricks, which were initially provided from factories in Ponce or San Juan, a complete factory was assembled in Aibonito. Still, the brick making process was slow, expensive, and man-hour consuming, as it required two to three months for the molded bricks to dry before they could be placed in the ovens. This required large warehouses to stock them up before firing, holding up the brick’s availability. In 1880, a *Clayton* type system machinery to produce bricks was acquired. The Clayton, a steam machine, produced strongly pressed bricks with dry air that only required five to six days waiting period before firing, producing in a short amount of time a cheaper brick of better quality.³⁹ Also, during the construction of the Cayey-Aibonito section also, electrical charged cords were used to detonate the explosives from a safe distance, reducing the mortality and injury rate among the workers. To provide the water needed as a construction material, hydraulic ram pumps were installed at different sites to pump up water to the workers construction site level, eliminating the need for the laborers to carry buckets of water to the construction site.⁴⁰

³⁸ Luis Pumarada O’Neill y María de los Ángeles Castro Arroyo, *La Carretera Central: un viaje escénico a la historia de Puerto Rico*. Oficina Estatal de Preservación Histórica, 1997, 8. Authors indicate that two Blake’s were acquired in 1879. Actually, it was just one, used in the section Caguas-Cayey. Authorization to buy a second one was given on May 5, 1880. Each Blake’ stone crusher had a tag price of five thousand pesos.

³⁹ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 39. Caja 2137

⁴⁰ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 23. Caja 2126.

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The lack of means of transportation was also a continuous struggle as thousands of cubic feet of stones, sand, along with equipment and personnel needed to be moved or removed from and to the working sites. During the initial years, depending on the section being worked, much of the construction materials were transported from San Juan or Ponce, based on which one was closer to the working area. However, as the work gangs went deeper into the mountain range, it became harder and more expensive to provide the construction materials from either city. The engineers in charge, like Manuel López Bayo, Enrique Gadea, Manuel Maese, and Raimundo Camprubí, decided wisely to use materials extracted from nearby locations or reuse the by-products produced during the actual construction. For example, in 1875, to avoid delays and reduced expenses, Manuel López Bayo, extremely significant in the planning, design and construction of the **Central's** stretch from Caguas to Cayey and Cayey to Aibonito, while in charge of the early stages of construction of the **Carretera Central** from Caguas to Cayey, determined that the stones needed for ashlar works (*trabajos de sillería*) would not be brought from San Juan, but extracted from the nearby mountains in Caguas itself. The stones to be used for the *mampostería* were to be the very same stones extracted from the ground as the road was built; the bricks were to be acquired in Caguas and the sand for the mortar was to be extracted from nearby Río Caguitas' riverbed.⁴¹

But even obtaining the material at a closer distance, the need for transportation remained a constant struggle. From the *Jefatura de Obras Públicas'* point of view, as they were to benefit from the road's construction, the adjacent municipalities should provide the necessary carts for transport. This provoked a constant fight between the local authorities and the officials from the central government. Adding to the problem was the high costs of transportation, which weighed heavily on the budget. For example, by the early 1870s, a peon's wage was one *peseta* and eighty-seven *céntimos* per month; a bricklayer earned eight *pesetas* with seventy-five *céntimos*; however, it took nine *pesetas* to employ a conductor with a team of oxen; eleven *pesetas* with fifty *céntimos*, if the cart was pulled by four oxen.

Among the obstacles faced during the **Carretera Central's** construction, the lack of laborers is probably the most frequently mentioned by contemporaries and later researchers. Just as the lack of a tradition of road building delayed the formation of a cadre of professionals with experience in the matter; it also delayed the formation of skilled workers able to properly manage the complexity of the

⁴¹ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 22. Caja 2125a.

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process. There were a reduced number of laborers that could properly qualify as bricklayers, even less as quarrymen or stonemasons. Qualified foremen were even harder to find. The laborers employed acquired the experience through on-the-job-training practice, affecting the road's construction expediency. On the other hand, the absence of a formally contracted workforce facilitated quick turn-overs. The trained laborer would disappear from work when he decided to do so, taking with him the learned skills, as no legal bound/contract was designed to force him to stay.

The way that the working class responded to the demands from the Establishment (government, landlords, etc.) in providing their work capacity was determined precisely by the way they produced and re-produced their material life. The agricultural mode of production, the laxity of land tenure rights and its enforcement, the flexibility of exchanging work for commodities, the not-so-firm established concept of private property with its legal and mental constrictions as implemented under a full-blown capitalist society, allowed the social possibility for the working class to sustain their physical lives without binding themselves to a regular job or wage. At the time of the Central's construction, the workers' basic needs (shelter, food) could still be satisfied without their total immersion into the wage-earning working market. In 1882, Manuel Maese, one of the engineers associated with the **Carretera Central** commented that:

"El bracero de esta isla tiene a su disposición cosas que le facilitan su menudo estilo de vida y que no promueven su interés por trabajar. Sus casas (sus pobres chozas) las construyen de yaguas, material que no les cuesta nada. Se alimentan de frutos del país que consiguen sin trabajar. Se someten a un régimen de trabajo, sólo cuando tienen una gran necesidad por devengar algún salario y una vez que obtienen la cantidad que necesitan, se ausentan de sus tareas".⁴²

By the time the construction of the section Caguas-Aibonito began in 1875, slavery had been abolished and coercive labor policies like the "*Libreta de Jornaleros*" had been suspended, making it harder for the state or municipal authorities to obtain forced labor. However, coercive laws against vagrancy were still in effect and were used to make those punished by it to work at the **Carretera Central**, at half the pay when compared to a regular worker.⁴³

Through the years of construction, different incentives were implemented by the central government and the municipal authorities, to increase the participation of free laborers. By the 1870s, the monthly wage of a *jornalero* could vary from one *peseta* with eighty-seven *céntimos* for a peon

⁴² AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 23. Caja 2126.

⁴³ Juan E. Castillo, *La Carretera Central*, Diciembre 1929, 318.

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(that was three *reales* per day), to fifteen *pesetas* for a master carpenter. The wages were increased throughout the years to attract and keep a steady flow of free workers. By 1880, the peon's wage was ranging between three and half *reales*, to six *reales* per day. The wages were adjusted according to the location, to make them more competitive and appealing. For example, *jornaleros* working at the **Carretera Central** in Aibonito in 1880 were paid three and half *reales*; those working in Juana Díaz, were paid five *reales*; while the ones working nearby Ponce or San Juan, were paid six *reales* per day. The difference was based on how much an agricultural worker was paid on the very same location. That is, the authorities kept the wages for those working in the **Carretera Central** slightly higher than the ones offered by the private sector in agriculture.⁴⁴ In 1880, attempting to retain the workers motivated to stay, a fund was established by the central government to provide free basic medical care to the *jornaleros* at the working sites.⁴⁵ In 1880, as indicated by Juan Castillo, an increase in pay to one *peso* per day was given to those workers employed in the hardest task, *machaqueo* (stone crushing). As he correctly mentioned, one *peso* per day was a very good wage for the time.⁴⁶ Actually, it was more than that. The increase given in 1880 was one *peso* and twenty-five *céntimos* per cubic meter of crushed stones, not per day. That is, *jornaleros* working in the *machaqueo* could make a substantial wage if able to produce a cubic meter or more. Of course, easier said than done. According to contemporaries, even the more skillful and stronger *jornaleros* averaged one third of a cubic meter of crushed stones in a day's work.⁴⁷

The municipalities had an active part in providing a work force for the **Carretera Central's** enterprise. As required by the government, the towns impacted by the construction (San Juan, Río Piedras, Caguas, Cayey, Aibonito, Coamo, Juana Díaz and Ponce) were to provide as many free laborers as possible, assistance to transport *jornaleros* to and from the working sites, and assist in finding or even building the accommodations (quarters) for those laborers that remained at the sites during the work week. In many instances, however, the municipalities were not as effective as the central government expected, especially the towns in the Cordillera Central, like Cayey, Aibonito and Coamo, with budgets known to be limited. However, the municipalities kept trying to provide laborers and were

⁴⁴ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 47. Caja 2144.

⁴⁵ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 25. Caja 2127.

⁴⁶ Juan E. Castillo, *La Carretera Central*, Diciembre 1929, 318.

⁴⁷ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 23. Caja 2126.

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more successful as the incentives were improved. In 1878, Cayey was providing one hundred laborers daily for the works on the Caguas-Cayey section, while building the needed quarters.⁴⁸

In some instances, the local authorities became watchful keepers of the *jornaleros'* interests under their jurisdiction, exposing the poor working conditions or the unfairness of the wage system to the central government. For example, in 1876, José Maria De la Vega, mayor of Cayey, reported to the central government that during a visit to a work site in the **Carretera Central** he found many of the *jornaleros* sleeping out in the open, among the bushes, exposed to the elements. The mayor also complained that the practice of paying once a week (on Saturdays), left the workers without currency to pay for their day-to-day needs, especially food. De la Vega also reported, that the owners of the *ventorrillos* (small shops) inflated the prices of their products, taking advantage of those worker with some savings. The mayor threatened not to provide any more workers until the situation was resolved.⁴⁹ A similar complaint was also raised to the central government in 1877 by Caguas' mayor, indicating the hardship inflicted upon the *jornaleros* because of the once a week payment policy, which unable the workers to cover their daily needs.⁵⁰ In 1883, along the same lines, the mayor of Aibonito complained that the laborers were getting paid late at night on pay-days, resulting in attacks by local bandits to steal their hard-earned money. It was suggested by the engineer in charge, Enrique Gadea, to increase the presence of police officers (*Guardia Civil*) on paydays, not only because of the incidents mentioned by the mayor, but also to restrain certain illegal activities (fighting, drinking, betting) in the premises of the pay-warehouse. However, even with the medical benefits, transportation, lodging (when available), better wages, and the watchful efforts of the local officials, the presence of free workers remained intermittent throughout the construction years.

To compensate the low employment rate of free workers, by 1874, according to María de los Ángeles Castro, *confinados* (inmates) began to be used in the **Carretera Central**.⁵¹ Inmate labor was strongly used in the entire length of the Caguas-Juana Díaz section. On July 12, 1877, the *Jefatura de Obras Públicas* formally authorized the use of *confinados* in the Caguas-Cayey works, with their quarters and wages, as well as those of the security guards, to be covered by the road's construction budget.⁵²

⁴⁸ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 39. Caja 2137.

⁴⁹ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 24. Caja 2126.

⁵⁰ Ibid.

⁵¹ María de los Ángeles Castro, *La Construcción de la Carretera Central*, 106.

⁵² AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 24. Caja 2126.

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On September 18, 1877, the central government authorized that every *confinado* in the island, not employed in public works, be moved to work at the **Carretera Central**, as long as they had the required physical strength and work attitude.⁵³ In 1879, through the Ministerio de Ultramar, an arrangement was done with Cuba to provide three hundred inmates for the **Carretera Central**. The *confinados* from Cuba, with many Chinese among them, along with the hundreds provided by the local penal system, were used to perform the most undesirable and dangerous jobs, like the *machaqueo* and the handling of explosives.⁵⁴

The presence of *confinados* had influence even in the type of construction materials to be used. On December 1877, Enrique Gadea, engineer in charge of the Caguas-Cayey section at the time, suggested the use of stones with high silicate content (extremely hard to be crushed manually) for the macadam pavement in those areas where the *confinados* were stationed. If other type of labor was used, then Gadea suggested the use of gravel from the river beds, which hardly needed to be crushed. The engineer also recommended to congregate the *confinados* to one area, and to use them exclusively for the crushing of the hard stones. It seems that the last suggestion became the practice. By August 1880, it was reported that at the *Alto de Las Cruces*, one of the highest points on the road from Caguas to Cayey, there were one thousand two hundred and sixty-seven (1,267) inmates exclusively working in the *machaqueo*.⁵⁵

This last number is significant. In some of the contemporary histories about the **Carretera Central**, the relevance of the three hundred inmates sent from Cuba to sustain the works being done is emphasized. However, credit should also be given to the obvious hundreds of unknown local prisoners that were forced to work at the **Carretera Central**. The majority of the 1,267 inmates reported in Caguas by August 1880, were locals. In a letter dated November 1880, the authorities indicated that they were still waiting for Cuba to send the remaining one hundred and seventy-three (173) inmates to complete the three hundred agreed upon.⁵⁶

The use of *confinados* presented the official authorities the advantage of extending the working load and hours. As ward to the state, the *confinados* could be exploited with much longer working hours than the regular free laborers. Reports submitted by the *sobrestantes* (overseers) explicitly

⁵³ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 47. Caja 2144.

⁵⁴ José Lee Borges, *Los chinos en Puerto Rico*. San Juan: Ediciones Callejón, 2da Edición, 2015.

⁵⁵ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 25. Caja 2127.

⁵⁶ *Ibid.*

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indicated that they worked the *confinados* from sunrise to sundown, allowing one hour to hour and a half for resting and eating in a work day.⁵⁷

The use of *confinados* imposed a logistic. They were organized in working brigades, sometimes arranged by their skills, strength, or even the length of their sentences. The Third Brigade, for example, was organized on June 26, 1879, with the first one hundred and twenty-seven (127) *confinados* that came from Cuba. By 1885, the brigade was made of inmates serving ten to twenty years, but mostly, life sentences. It was ordered that the brigade was not to be split-up, it would remain under heavy and constant surveillance day and night, and it was to remain separated from other workers, whether free laborers or *confinados*. To prevent escapes and to keep the required discipline, the guards assigned to the Third Brigade were instructed to shoot without hesitation. By 1880, a Fourth Brigade was formed along the same lines. These were inmates with long sentences, those with behavior problems that had shown a poor disposition to work, those that had repeatedly attempted to escape, and those that were "*suspicious and depraved*". The Fourth Brigade, used in the Cayey-Aibonito-Coamo section, had more guards assigned to it than any other brigade.⁵⁸

From a cost and functional stand point, the use of *confinados* had its pros and cons. The rate of the *confinados*' wage was kept at one third of the lowest pay earned by a free worker, representing a substantial saving. However, those savings had to be used to cover the salary of the *guardias civiles*, the rented shelters for guards and inmates, foodstuff and medical supplies. Normally the entire force of *confinados* could not be directly used in work related matters. Many of the support tasks had to be performed with the same inmates: managing the livestock (*rancheros*), carrying and providing drinking water for the workers (*aguadores*) and carrying and helping the sick at the temporary clinics. It was estimated that, one third to half of the *confinados* were assigned to supportive works, reducing the actual construction workforce.⁵⁹

As with any type of coerced workforce, the inmates showed lack of urgency or interest on the assigned workload, affecting the swift progress of the road's construction. The problem of the daily absenteeism among the *confinados*, due to real or pretended sickness, was also constant. The living conditions placed upon the inmates didn't precisely contribute to improve the attitude of the reluctant

⁵⁷ Ibid. Letters dated November 3, 1880; November 8, 1880.

⁵⁸ Ibid, Letters dated October 12, 1880; January 12, 1885.

⁵⁹ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 23. Caja 2126.

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workforce. Just as with the free laborers, the municipalities that were to directly enjoy the benefits of the road's construction were responsible for the construction of the living quarters for the *confinados* in their jurisdiction. As reported by the engineers, the shelters were of very poor quality, not even able to hold the slightest rains. On the other hand, the quality and amount of the foodstuff provided didn't compensate the amount of the workload nor the physical strength required to accomplish it.⁶⁰

To improve the efficiency and motivation, the task system was sometimes implemented. A daily task was assigned to a reduced group of *confinados*, if completed, the inmates could either finish their working day earlier or request another task, for an additional pay.⁶¹ The money incentive was used as well, but in more specific and demanding situations. In 1884, for example, while completing the last section of the road, Cayey-Aibonito, engineer Manuel Maese was faced with a stretch called *Peñon de Pelaez* that was described as extremely difficult due to the harsh topography, and the hardness of the rocky ground, reporting that it would take months to complete this section alone. Maese divided the stretch in two sections and brought two brigades (First and Third) of *confinados*, assigning a section to each brigade. The engineer took upon his own to promise two hundred (200) *pesos* as a reward to the brigade that completed the assigned section faster. The money was to be divided equally among the entire brigade. One month later, Maese reported that the stretch was completed. The Third Brigade was the winner. However, Maese requested for the First Brigade also to receive a monetary award, as they completed their section an hour and a half behind the Third Brigade.⁶² The *Jefatura the Obras Públicas* disbursed the promised money without any objections.

Regardless of the difficulties caused by using *confinados*, the successful completion of the **Carretera Central** rested heavily in many ways upon the broken shoulders of this local and foreign coerced forced. As viewed from the actual period of construction, the most important benefit of using *confinados* wasn't the money saved, but that their presence guaranteed a continuity of the works, even slow and laboriously.⁶³ Solely depending on the free laborers, the construction of the **Carretera Central**, more than likely, would have taken longer, if completed at all.

⁶⁰ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 47. Folio 132. Caja 2144.

⁶¹ María de los Ángeles Castro, *La Construcción de la Carretera Central*, 101.

⁶² AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 39. Folio 131. Caja 2137.

⁶³ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 45. Folio 132. Caja 2142.

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On April 15, 1886, Engineer in Charge Enrique Gadea, requested authorization to transfer all the *confinados* out of the **Carretera Central** back to San Juan to complete their sentences. Gadea indicated that all works were done.⁶⁴ The road was finally completed. Taken into consideration the construction of the San Juan-Río Piedras-Caguas section as part of the efforts to connect the Capital with the southern coast, the construction of the **Carretera Central** was a forty-year undertaking.

The opening of the road had an immediate effect upon the transportation and communication between the northern and southern coasts. Finally, a first-class road united the Capital with the leading economic section of the island, connecting along the path between San Juan and Ponce, the towns of Río Piedras, Caguas, Cayey, Aibonito, Coamo and Juana Diaz. Following the 1860 *Plan Carretero*, the **Carretera Central** was expected to become the umbilical cord from which branches were to be extended unifying the island in a logical road network.

The new road made travel time manageable. With a good set of horses, a passenger's carriage could depart from Ponce in the cool afternoon hours and make it to Coamo in three hours, using this last town as an overnight resting stop. Departing at the break of dawn from Coamo, it would take nine to ten hours to make it to San Juan. Ox carts carrying merchandise between the two cities took three days, as the drivers would sometimes stop at night and sleep in their carts alongside the road.⁶⁵ On occasions, it would be the opposite, with the ox carts moving at night, while resting during the daylight hours.

The completion of the road had a ripple effect. The prices of the land within the areas impacted by the road skyrocketed. Many companies were created to provide land transportation, either for passengers or products.⁶⁶ Towns like Caguas and Coamo developed local businesses to provide lodging for the travelers that could afford it. Alongside the **Carretera Central**, especially within sections of the Cordillera Central, a chain of small shacks was built by local to sell agricultural and homemade products to the travelers, including the fiery version of rum known as *pitorro*.⁶⁷

Once finished, the arduous and constant road conservation remained the main responsibility of the *Jefatura de Obras Públicas*, as the **Carretera Central** was under the Ministerio de Ultramar jurisdiction. A new type of worker arose to be employed as the first line of defense on the road's conservation, the *peón caminero* (road mender). Copies of the regulations in effect in Spain pertaining road conservation

⁶⁴ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Legajo 25. Caja 2127.

⁶⁵ Luis Pumarada O'Neill y María de los Ángeles Castro, *La Carretera Central*, 5.

⁶⁶ María de los Ángeles Castro, *La Construcción de la Carretera Central*, 126.

⁶⁷ Albert Gardner Robinson, *The Porto Rico of To-Day*, 119-120.

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and the organization of the road menders' service were sent from Madrid in June 1867, to Puerto Rico, Cuba and Philippines. These were to be revised and adjusted to the local circumstances.⁶⁸ By August 2, 1867, the local "*Reglamento de organización y servicio de los peones camineros de la isla de Puerto Rico*", was signed and approved by Miguel Martínez de Campos, Inspector General of the *Jefatura de Obras Públicas*.⁶⁹ However, much before instructions came from Spain on how to organize a corps of *peones camineros*, a set of instructions had already been in effect in the island through the 1865's "*Reglamento de los trabajos que han de practicar los peones camineros*", which explained in detail the tasks that the *peones* were to performed in their sectors.⁷⁰

The combination of both regulations provides a wider view on the process of selecting and organizing the *peón camineros* force, and their actual work load comes to surface. There was supposed to be one *peón caminero* per every three or five kilometers on the First-Class roads. To qualify as a road mender the men had to be more than twenty, but less than forty years old; had to have completed military service or been a farmer; free of physical disabilities; of known good conduct; with experience in construction and they required to know how to read and write. The *peón* had to live in or very close to his assigned road section. A uniform was required, to be paid by the peon himself, consisting of long blue linen pant, white linen shirt, a Panama hat and a metal badge with the number of kilometers assigned to him. The *peón caminero* was to perform the duties of a police officer enforcing the laws related to the road's conservation and safety. He was to do his rounds armed with a provided carbine. In a small leather bag, the peon was always supposed to carry a notebook on which his supervisor would comment on his performance, as a record for future promotions or pay raise. Failing to have the notebook with him, would cost him a day's wage; losing the notebook, three days' pay, besides paying for the new one.

The *peón* was required to work seven days a week, from sunrise to sunset, with short rests for lunch, dinner and a snack period in between. He was not to suspend his daily tasks because of the weather, be it extreme heat or heavy rain. In case of fire, natural or provoked, the *peón* was to do everything possible to protect the road's integrity, reporting the incident, and physically cutting down trees and bushes near the roadside that could feed the fire. In case of an earthquake or hurricane, the

⁶⁸ Archivo Histórico Nacional (AHN), Ultramar, 392, Expediente 3 (Portal Archivos Españoles, PARES).

⁶⁹ Ibid., 393, Expediente 3 (PARES)

⁷⁰ Francisco Ramos, *Apéndice al Prontuario de Disposiciones Oficiales*, Puerto Rico, Imprenta de González, 1867, 267-273.

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peón caminero was required to walk his entire sector, as soon as it was over, to evaluate the damages to the road, to support structures (bridges, culverts, etc.) and to identify landslides or susceptible areas for possible landslides. The peon had twenty-four hours to submit his assessment report to his superiors.

Besides his daytime duties as a mender, night rounds were required to enforce the safety laws, on his assigned section. This was due to heavy traffic conducted during night-hours on the **Carretera Central**, taking advantage of cooler temperatures. The duty of the *peón caminero* as a “police” officer, had a direct impact upon his wage. According to the *Reglamento de Conservación y Policía de Carreteras*, a revised version published in the *Gaceta Oficial* on August 25, 1874, the *peón caminero* was entitled to one third of the fine imposed on those that violated the traffic rules and laws on the state roads.⁷¹

Every two days, the *peón caminero* was required to cover his entire sector, to evaluate conditions not only of the road’s *afirmado* (pavement), but also bridges, culverts, roadsides, retention walls, and even the wood-line along the road. Any problem with the *afirmado* had to be quickly repaired. If the undertaking was beyond his individual capacity, the peon had to promptly report the problem to his immediate supervisor, the *Peón Capataz* (foreman) or the superior *Sobrestante* (overseer), to form a *cuadrilla* (work gang) with other *peones camineros* from the nearby areas to resolve the problem expeditiously. Structural problems with the road or its components found by the supervisors, not properly reported by the *peón caminero* on his assigned section, could result on his dismissal or in having his wage suspended for an extended period to “contribute” to the needed repairs.

As mentioned earlier, after the road’s completion, many new arrivals highly praised the quality of the **Carretera Central**, calling it the best road in the Western Hemisphere. Without a doubt, those praises were the result of the daily tasks performed by the *peones camineros* and their demanding working agenda throughout the years. These workers took care of the **Carretera Central**, and other state roads, way into the late 1950s, when they were replaced by new technology and new ways to organize the workforce under the *Departamento de Obras Públicas*.⁷²

⁷¹ AGPR. Fondo: Obras Públicas. Serie: Carreteras y Puentes. Sub-serie: Asuntos Generales. Legajo 617. Expediente 779. Caja 2740.

⁷² El Mundo. Ante Mecanización. Desaparecerá el caminero de carreteras de la Isla, 20 de septiembre de 1957, 19. By 1957, there were 1,100 designated peones camineros, 519 fully active. As they were replaced, the government made sure that the

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In 1898, twelve years after the **Carretera Central** was completed, the road built to serve the economic, military and political project of the Spanish government in Puerto Rico, became the main avenue of approach of the invading US military ground forces towards the conquering of the island's capital as part of the Spanish American War. After San Juan's bombardment in May 12, 1898, and the city's port blockade, the attention of the US' strategists turned towards the southwest, the most productive and the least militarily built section of the island. On July 25, 1898, the military occupation of Guánica took place. Two days later, three battleships departed from Guánica towards Ponce, arriving at the city's port on July 27, 1898, with ground troops setting foot ashore in Playa Ponce during the early hours of July 28. Ponce's Custom House in Playa Ponce became General Nelson Miles's headquarters. With Ponce's occupation, the southern entrance to the **Carretera Central** came successfully under the US Army's control (**Fig. 18**).

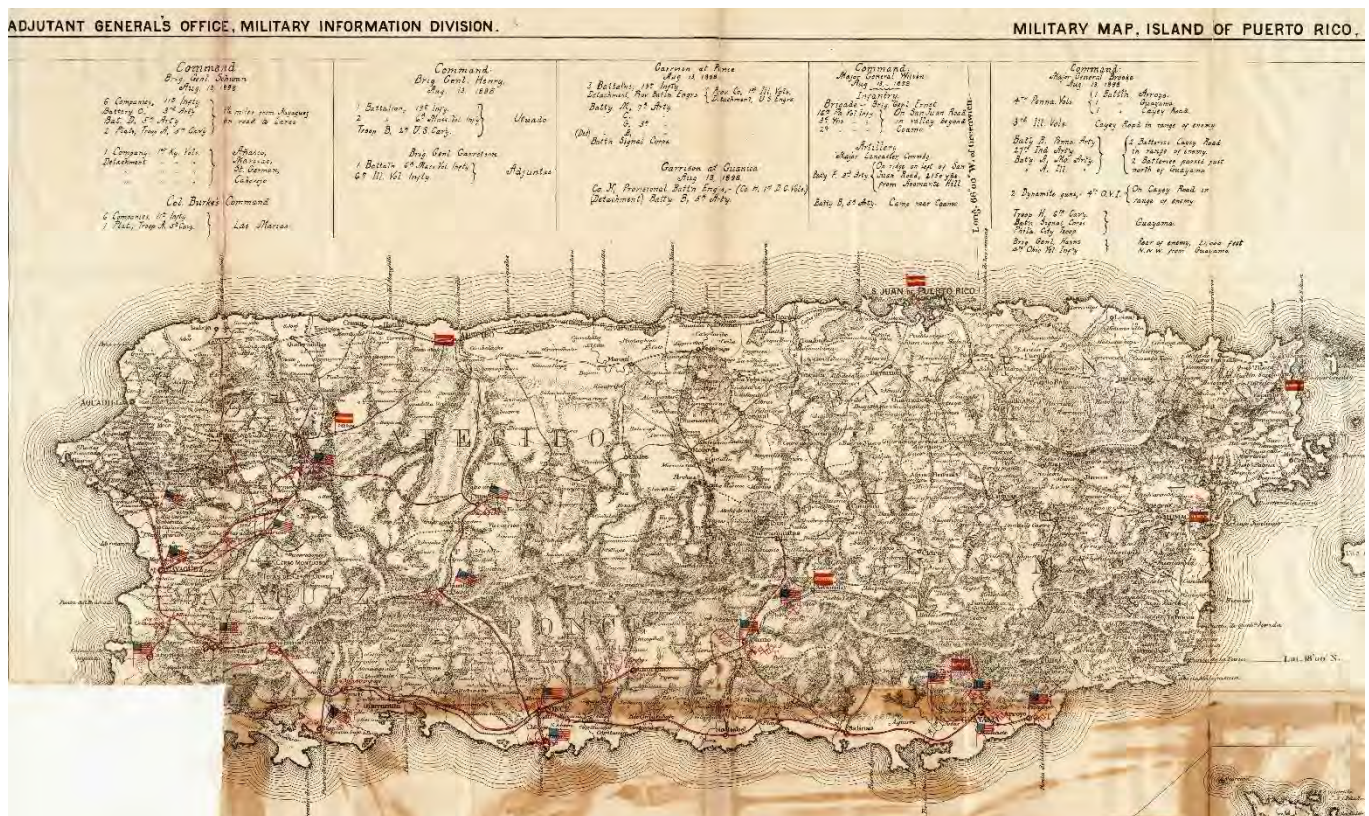


Figure 18. The 1898 map that was annexed to the Report of the Major General Commanding, indicating the location of the US and Spain military forces by November 1898. The routes planned to be used by the US troops were marked in red. The **Carretera Central** is shown in red from Ponce to Coamo, with the dates August 9 and 12 (battle dates) written at the site of the military encounters.⁷³

peones were given priority into been employed as regular workers in the new roads' work gangs. Those occupying the position of Peon Capataz were also given the opportunity to fully acquire the ownership of the *casillas de camineros*.

⁷³ Archivo Nacional Digital de Puerto Rico. Código de Referencia: 20170727_134859.

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The very same day that Ponce was occupied, the Spanish troops used the **Carretera Central** to retreat, passing Juana Díaz and Coamo, with the plan of reorganizing their forces in a defense position, in Asomante, a sector two miles from Aibonito's urban center. The retreat from Ponce to Aibonito took two days. Two hundred and forty-eight infantrymen with forty-two officers were left by the Spanish at Coamo, under the command of Rafael Martínez Illescas, to provide safe cover while the rest of the forces concentrated in Asomante. Illescas was ordered to hold and delay the advance of the US forces moving up the **Carretera Central**, providing adequate time to set-up defensive positions. The strategy rested upon attracting the US forces into the high, narrow and sinuous section of the **Carretera Central** in Asomante, far from the naval gunfire support of the US' ships at Ponce. In that location, the Spanish forces would have control of the high ground, forcing the possible attackers into an uphill battle, with limited natural shelter and the **Central** as the only line for a frontal attack. In Asomante, the Spanish military concentrated 1,280 infantry soldiers in trenches, 70 mounted cavalry soldiers and two pieces of field artillery, with a hasty battery placed at the highest point in Asomante.

In the early hours of August 9, 1898, the American forces, using the **Carretera Central**, reached the outskirts of Coamo, facing Illescas' men just east of Padre Iñigo Bridge. By eight in the morning, the advancing American regiment faced-off against the hasty defensive position used by Illescas, both initiating their counter fire. Slightly an hour later, Illescas was mortally wounded, along with Captain Frutos López, second in Command. With another three soldiers dead and several wounded, the Spanish officer in charge, surrendered the remaining of his 167 troops (**Fig. 19**).



Figure 19. Casilla de Camineros in Coamo, located on PR-14, km. 34.3, to which the dead and the wounded Spanish soldiers were taken after surrendering to the American troops on the morning of August 9, 1898.

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Not all of Illescas' troops were captured however. Some officers and regular troops escaped into the mountain side, and using old trails attempted to reach their comrades in Aibonito. Part of the US cavalry went in pursuit of the fleeing soldiers, but when they had them within reach, the Americans came under fire from the guns of the entrenched Spanish troops at Asomante, pushing the US cavalry into a quick retreat. For the next two days, the US commanders (Wilson and Ernst), assisted by local personnel, worked in the development of a plan to surround the Spanish defensive positions. The plan was to launch a frontal attack as a distraction while most of the troops would use an old *camino carretero* to reach the town of Barranquitas, and from there reach the **Carretera Central**, coming from behind upon the Spanish troops in Asomante. In the morning of August 12, 1898, the Americans put their plan into action moving troops and artillery pieces in a frontal attack but were stopped dead on their tracks by the Spanish sharpshooters and field artillery, resulting in two Americans casualties and several wounded. That very same day, August 12, the US troops received orders from Washington to cease all actions, as a peace accord was being negotiated with Spain. In the morning of August 13, the Spanish commanders received similar instructions. The *Splendid Little War* was over. The stretch of the **Carretera Central** Coamo-Aibonito was the site of the last encounter of the military conflict that sent the history of Puerto Rico into a totally different course.

Writer Albert Gardner, starting at Ponce, travelled the entire **Carretera Central** all the way to San Juan right after the cease fire in August 1898. When reaching the Asomante sector, he went through the American and the Spanish check points, both forces still holding their defensive lines, while the surrendering terms were being negotiated. After observing the defenses built by the Spanish forces in Asomante, Gardner concluded that the cease fire came right on time as the US force would have had a very difficult task accomplishing its mission:

*"The confidence of the Spanish commander in the strength of his position was wholly warranted. The road presents point after point of the greatest exposure, from which but a mere handful of men could attack effectively only for the few brief moments during which they could withstand or outlive the fire of the enemy; flank movements could be made only by long severe climbing of hill-sides standing at very steep angles. It is necessary to admit that the arrival of the notice of cessation of hostilities may have meant our salvation from a sanguinary conflict, if not from a temporary defeat."*⁷⁴

⁷⁴ Albert Gardner Robinson, *The Porto Rico of To-Day*, 112.

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William Dinwiddie, who also travelled the **Carretera Central**, provided a similar assessment:

“It was this stretch that the Spaniards soldiers commanded from an impregnable position on the mountains. It would have proved a fearful trap had our men marched into it, since, from the trenches which crowned the high hills, the artillery and small arms could have annihilated an army of ten thousand men easily as the three thousand men who were preparing to advance when the messenger arrived with the news of peace... Our military men who have seen this deadly and picturesque position agree that it would have involved great loss of life, if not utter rout, had the assault been ordered.”⁷⁵

These two American writers provided what could be considered the last impressions of the **Carretera Central** by the turn of the 19th century. In the chapter dedicated to the **Central**, Dinwiddie mentioned many of its attributes and functional elements: *“the finest road in the western hemisphere”*; *“built by the Spanish government at an approximate cost of four million dollars”*; *“it is macadamized from end to end with finely-broken calcareous rock, which cements itself into an almost solid floor”*; *“it has good bridges over the numerous fast-flowing streams”*; *“every few kilometers are found substantial single-storied houses, with red roofs, called “camineros”, in which the road-tenders lived, whose duty it was to keep the road up to the high standards originally set by its promoters”*.

In Dinwiddie’s memory, the natural setting of the **Carretera Central** was also a main character: *“it is impossible to describe the beauties of scenery, the unsurpassed variety of emerald vegetation, and the charm of wonderful sunsets and more remarkable sunrises along the highway”*; in the Cordillera Central, *“the landscape was carved in surprising forms, with the elegance and symmetry of rounded hills and deep-set valleys, and everywhere covered with the magnificent foliage of a climate warmed by a torrid sun, and watered copiously, day after day, by a moisture-laden atmosphere”*.

The distribution of the economic patterns in their respective topography, now connected by the **Carretera Central**, was also part of Dinwiddie’s experiences: *“Way down in the valleys, lining the banks of the mountain streams, were the sugar cane fields, and on the larger plantations the high chimneys of the sugar boiling houses..”*; *“Between Aybonito (sic) and Cayey we began to notice the coffee-bushes, covered with berries turning red, and, in the early morning, troops of women and children trudged by us, swinging closely-woven baskets in which they gather the coffee beans”*; *“Cayey is the great tobacco center and the place of manufacture of the finest cigars on the island”*.⁷⁶

⁷⁵ William Dinwiddie, William Dinwiddie, *Puerto Rico. Its Conditions and Possibilities*, 36.

⁷⁶ *Ibid*, 32-39.

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The Carretera Central in the 20th Century

By the time the island was transferred to the United States in 1898, the **Carretera Central** was the only road fully completed as part of the 1860's *Plan Carretero de Puerto Rico*. The Plan proposed a total of 880 kilometers of roads. The total of kilometers built by Spain by the time its sovereignty over Puerto Rico ended varies according to different sources. In 1891, the new Chief of the Jefatura de Obras Públicas, Eduardo Cabello, indicated the completion of 235 kilometers, with another 54 under construction. However, in 1897, Chief Engineer Baldomero Donnet reported lower numbers with 230 kilometers completed and 30 under construction.⁷⁷

The massive report submitted by Brigadier General George Davis in 1900, to the War Department indicated that the Americans found 158.72 miles of completed roads in what he called "*Porto Rico*", which equals about 255.4 kilometers.⁷⁸ However, a more accurate estimate was done in 1919, concluding that the length of roads built under Spain amounted to 267.4 kilometers (**Fig. 20**).⁷⁹ Either way, the number fell far short of the projected *Plan Carretero*.

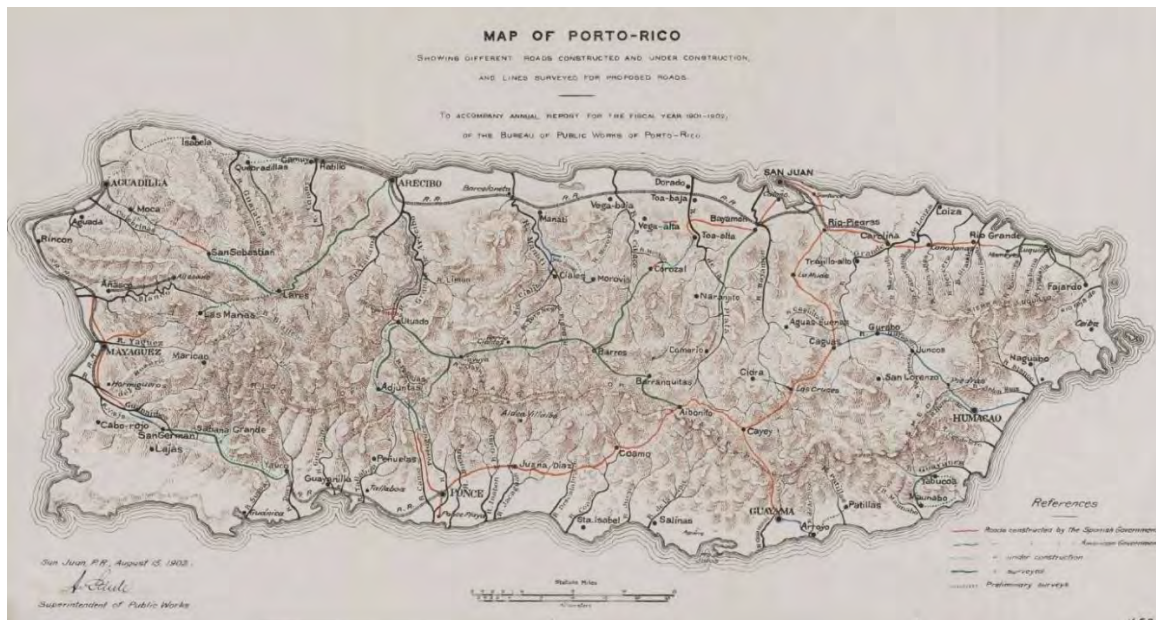


Figure 20. A 1902 map showing major roads built up to that time, indicating those built by the Spanish government. Out of the 255 kilometers built by Spain, as reported by the new US administration, 134 corresponded to the **Carretera Central** alone.

⁷⁷ Fernando Saenz Ridruejo, *Ingenieros de Caminos en Puerto Rico, 1866-1898*. *Anuario de Estudios Atlánticos*, num. 55, 2009, 325-326. Cabildo de Gran Canaria. Las Palmas de Gran Canaria, España.

⁷⁸ Annual Report of the War Department for the Year ending June 30, 1900. Military Government of Porto Rico from October 18, 1898 to April 30, 1900, 205.

⁷⁹ Report of the Governor of Porto Rico to the Secretary of War. 1919. Washington Government Printing Office, 1919, 404.

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In one way or another, the economic, political, social and administrative way of life of the island was re-arranged under the new US administrators. By General Order No. 102, dated April 30, 1900, Brigadier General George W. Davies established the Department of the Interior. Cayetano Coll y Toste was appointed acting Commissioner of the Interior and held that position until June 15, 1900. The approval of the Foraker Act on April 12, 1900 brought a civil government upon the island. Coll y Toste was replaced as Commissioner of the Interior by W. H. Elliot, appointed commissioner by the President of the US. Hunt promptly organized the department in different boards, bureaus and divisions. The Board of Public Works, composed of three members, was given the care of public buildings, matters relating harbor shores and lands, railroads, streams, canals, irrigation, marsh lands, aqueducts, and of course, roads, highways and bridges.⁸⁰

Just as under Spain, the construction of roads became a central point in the new authorities' agenda. In his first annual report, Charles H. Allen, the first civilian governor designated under the Foraker Act, exclaimed that *"the crying need of the island is above all roads. It is an imperative necessity to devote every dollar which can be spared from the surplus revenue to the construction of permanent roads"*.⁸¹ The urgency for more roads was evident right from the start under the military government that lasted eighteen months in power. Nearly a million dollars was allotted to the military authorities for road construction. However, the works conducted during the military government were scattered over the island, roads were built in detached sections and scarcely a single highway was completed. Allen wanted to use the money allocated to filling up the gaps between roads already finished.

For the first decade after 1898, road construction plans were quite hasty, with emphasis given to speed over quality. The need to quickly increase the mileage of roads was understandable. The economic and social development of the island strongly depended on a reliable network of roads to connect the rural and the urban centers; to properly move the agricultural products from the mountain region to the coastal cities and vice versa; to efficiently move the construction materials to build the much-needed school houses in the rural sectors, among other projects. In other words, the new authorities were highly aware that roads were required to make the island a productive addition to the US, while also providing the avenues of approach to spread the new political and cultural project. As

⁸⁰ First Annual Report of the Governor of Porto Rico. Charles H. Allen, Governor. May 1, 1901. Washington: Government Printing Office. 1901, 314.

⁸¹ Ibid., 73-74.

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such, quick and temporary constructions were considered more relevant than quality and permanence. By 1919, twenty years after the US' occupation, there were an additional nine hundred and twenty-two (922) kilometers of road, increasing to one thousand three hundred and thirty-four (1,334) kilometers by 1924.

Many of the roads constructed during the early years of the 20th century were built along the coast, where the island's topography made the construction relatively easy and inexpensive, without giving primary importance to the requirements of building first-class permanent roads. The aim was to extend as quickly as possible the means of communications and transportation. Under this initial policy, arrangements were made to facilitate traffic, and thus a considerably large number of road structures were built of wood, instead of masonry, and no bridges were provided over river crossings if they could be forded. The construction of roads during the first decade of the 20th century was therefore notable for the speed in which it was carried out, but the resulting network lacked planning and permanency.

Besides short time construction, reducing cost was also an important goal among the policy makers during the first years of the last century. Accepting as correct the figures given in the 1900' report by General Davies, the cost of the 253.6 kilometers of roads built by the Spanish government until 1898, amounted to \$3,484,627.00, an amount described as excessive. A simple calculation provides the average of \$13,740.00 construction's cost per kilometer. During the twenty years interval of 1898-1919, nine hundred and twenty-two (922) kilometers were built at a total expense of \$5,970,956.⁸² This was an equivalent to an average cost per kilometer of \$6,476.00, almost 50 percent of the cost of roads per kilometer built during Spain's regime upon the island.

However, once again, the reduction in production cost was accomplished at the expense of quality. One of the steps taken to reduce expenses was the abandonment of the *peones camineros* system, eliminated from 1905 to 1914. The practice installed during those ten years was the one in vogue in the United States, allowing sections of the road to deteriorate to a certain extent and then make periodical repairs, using a work gang.

⁸² Report of the Governor of Porto Rico to the Secretary of War. 1919. Washington Government Printing Office, 1919, 403.

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Eventually, the suspension of the *peones camineros* was defined as a mistake. In the 1919 Report of the Governor, the 1909-1914 suspension of the *peones camineros* was described as “*evidently disastrous to many sections of roads which rapidly deteriorated. Experience demonstrated the convenience and necessity of reestablishing the Old Spanish system*”.⁸³ With the system of employing a gang of men to make repairs every now and then, the small defects passed unnoticed until they grew to such proportions that extensive repairs had to be made. The work needed would be more expensive, and the method unsuitable for traffic, since the roads could never be continuously maintained in good conditions. Realizing this, the *peones camineros* system was re-installed in 1915. Each peon was placed in charge of about three kilometers of road, under the supervision of a foreman (*peón capataz*) who cared for eighteen to twenty-four kilometers. Both foremen and road menders were under the supervision of an overseer (*sobreestante*), who oversaw approximately one hundred kilometers of road. Besides taking care of all the details to properly preserve the road, the *peones* were again assigned the role of exercising police powers to enforce the proper observance of the laws, rules and regulations governing the public use of insular roads.

Throughout all the changes in policies and approaches to the development of the local infrastructure enforced during the first decades of the twentieth century, the **Carretera Central** remained the most significant road within the island network. The road was always recognized as a great achievement. In the 1919 Report, it was described as “*a splendid work of engineering, which surely gives credit to the engineers in charge of its survey and construction*”.⁸⁴ In 1924, Guillermo Esteves, the first Puerto Rican to be designated Commissioner of the Department of the Interior, in charge of all public constructions, mentioned that the **Carretera Central** was a masterpiece “*that could be seen as a model to our engineers today*”.⁸⁵

Not only was the **Carretera Central** the most essential road in the transportation system in the island, but it was also the most significant as a mean of communication. When the US arrived in 1898, 1,240 kilometers of wire lines connected almost the entire island in a telegraph network with forty-one offices, divided in four districts: San Juan, Ponce, Mayaguez and Humacao. The San Juan District’ office, located at La Fortaleza, had its lines running along the **Carretera Central** to Río Piedras and Caguas. The

⁸³ Ibid. 420.

⁸⁴ Ibid. 403.

⁸⁵ Guillermo Esteves, Desarrollo de las Obras Públicas de la Isla de Puerto Rico. Revista de Obras Públicas de Puerto Rico. Año 1. Enero de 1924. Num 1.

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Ponce District had its office in Ponce Playa, with its lines running along the **Carretera Central** to Juana Diaz, Coamo, Aibonito and Cayey. By mid-1920's, the **Carretera Central** was still the main avenue carrying not only the telegraph, but also the modern telephones lines (**Fig. 21**).

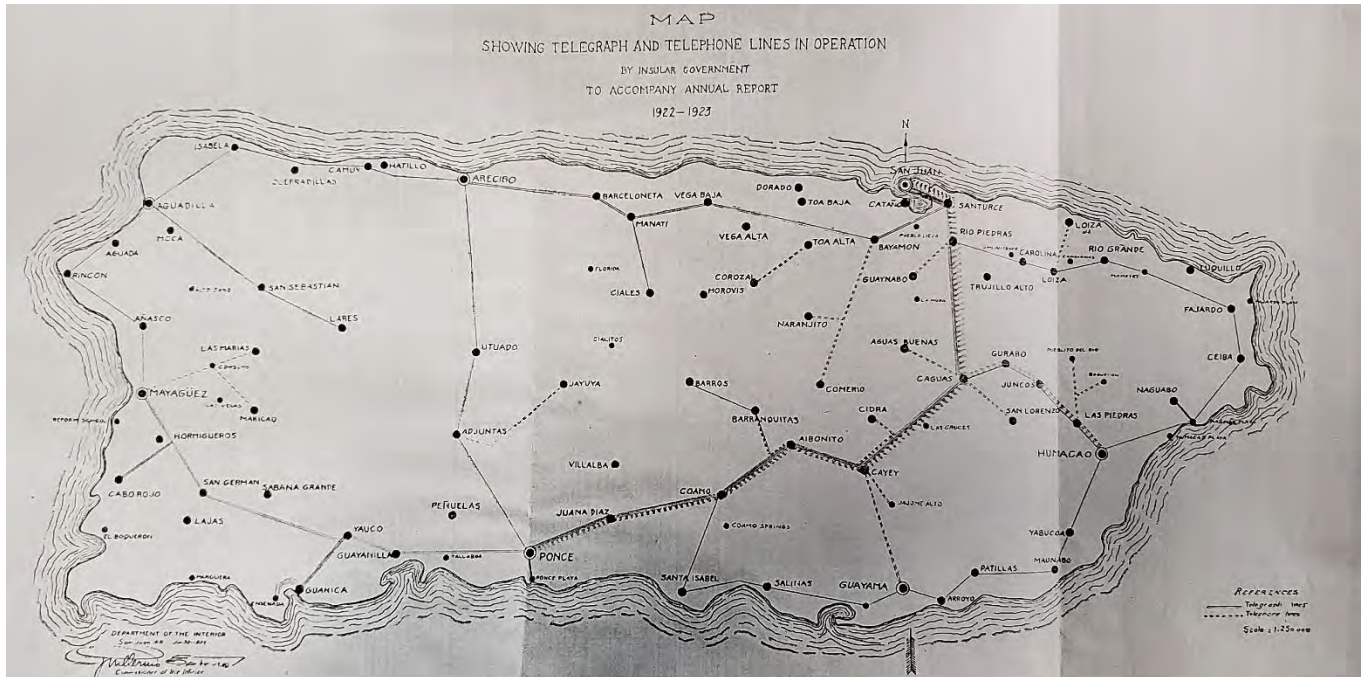


Figure 21. Map depicting active telegraph and telephone lines by the mid-1920s, showing the **Carretera Central** as the main carrier.⁸⁶

Despite its engineering qualities and its essential services in transportation and communications, the **Carretera Central**, as expected, had to submit and adapt to the new requirements in road construction and added functionalities. Simply looking at the value of the imports and exports, an idea can be formed of the great increase of traffic over the insular roads that took place in the first twenty years of the twentieth century. By 1901, that value was of \$17,502,103.00; \$68,595,074 by 1910; and \$143,383,314.00 by 1918. The numbers reflect an increase in the internal exclusively transported over land, providing an indirect assessment of the pressure placed upon the island's road network, especially upon the **Carretera Central**, the major road connecting the two most important port cities, San Juan and Ponce.

⁸⁶ Revista de Obras Públicas de Puerto Rico. Año I. Septiembre de 1924. Número 9. 307.

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The increase in over-land commerce, brought the equally increasing use of motor trucks and automobiles, with their natural destructive effect upon macadam roads. In the year 1906, there were 99 motor vehicles in Puerto Rico; 309 by 1910; in 1918, there were 4,529; and 4,769 by the following year. A study conducted in 1905, showed that during a twenty-four hours period, 1,400 gross tons passed over the **Carretera Central**'s section of San Juan- Río Piedras, including weight of vehicle and load. By 1910, for twenty-four hours, 2,286 gross tons passed over this section.

The damaging effects upon the major roads carrying increasing loads and destructive motor vehicles required different approaches to their maintenance and repair. Some of the new trends were to increase the thickness of the macadam, make an expensive selection of the material employed and improve the method of construction. It was also necessary to resort to more frequent resurfacing of the macadam in the old roads.

However, the **Carretera Central**, became the first recipient of a new pavement material. The heavy traffic, combined with the destructive effects of the motor vehicles and the rain waters of the mountain region, induced the administrators to undertake the use of asphalt and bituminous materials to pave the sections of heaviest traffic. The first tests with such pavement were made in 1909, with a machine brought from England the previous year at a cost of \$4,500.00. With a capacity of 1,000 gallons of asphalt, the new pavement was tested in the **Carretera Central**' stretch of road from San Juan to the Martin Peña Bridge in 1910-1911. By the late 1920s, practically the entire historic road had a new pavement.

By the early 1930s, the new pavement on the **Carretera Central** allowed a faster automobile trip of slightly over three hours from Ponce to San Juan. Still, the road's tight curves and steep inclines and elevations, pushed authorities into developing alternate routes, like the late 1920's road between Cayey and Salinas (which later was popularly known as "*la Piquiña*"). By the 1940s, the stretch of the **Carretera Central** from Cayey to Ponce was designated as PR-14, while the added section from Cayey to Salinas, extended by that time from Santa Isabel to Ponce, was designated PR-1, the old name for the entire **Carretera Central**.

As larger and heavier cargo-trucks increased their loading capacity, as the exigency of commerce demanded and imposed faster delivery schedules, as faster and friendlier routes for land transportation of goods and people weighted heavily in the economic patterns, and even as leisure driving became a

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more common cultural trend, adjustments upon the **Carretera Central's** alignment (horizontal and vertical) were applied. In some instances, the realignment included the widened and/or straightened of the road, by-passing narrow stretches or even leaving out narrow 19th century bridges. This was done by the end of the 1940s, when a by-pass was made in Cayey, left-out a section of PR-1 containing two narrow bridges, *La Liendre* and *Arenas*. The sections that contained the *Norzagaray*, the *Río Piedras* and the *Concepción* bridges were eventually left out of the northern stretch of PR-1 as well. Some of these left-out sections run parallel to the designated PR-1.

More significant changes came upon the historic road during the 1970s and 1980s. During the early 1970s, with 614,202 motor vehicles registered in the island, Highway 52 (*Autopista Luis A. Ferré*) was completed, replacing the **Carretera Central** as the main route between San Juan and Ponce. With its wide and straight sections and its multiple exists and branches connecting many towns, Highway 52 allowed for faster commercial and personal transportation. During the 1980s, the integrity of the southern end of the **Carretera Central** was compromised as the stretch between Juana Diaz and Ponce was widened to transform it into a four-lane road, causing the permanent loss of many original components, like culverts and bridges and the destruction or abandonment of old *casillas de camineros*.⁸⁷

As these changes were forced upon the **Carretera Central**, compromising the integrity of extended sections of the historic structure, the road moved from center stage as the most important travel-way in our communications and transportation system, to an alternate side-way road within the urban context of towns like San Juan, Caguas and Ponce. However, in the municipalities within the Cordillera Central (Cayey, Aibonito, Coamo, and in rural sections of Caguas and Juana Díaz), the old road remains a mayor route. It is precisely in these last five municipalities where structural elements and components associated with the historic, engineering and commercial significance of the **Carretera Central** are strongly present.

⁸⁷ Luis Pumarada O'Neill y María de los Ángeles Castro, *La Carretera Central*, 55-60.

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Carretera Central: the sections

According to the document *“The Preservation Office Guide to Historic Roads”*, every road is comprised of three parts: the road, the roadside and the setting.⁸⁸ Understanding the main distinctive elements that form the basic components of these three sections and how they complement each other, is the only possible way to articulate the character defining features that collectively define a historic road. In the **Carretera Central**, its travel-way, that is, the area of the road historically designed and dedicated to the movement of vehicles, people and goods, 19th or 20th century, it’s a contributing resource. By the time of its completion in 1886, the pavement in the **Carretera Central**, the durable or semi-durable surface of the travel-way, was done in macadam. However, during the early years of the twentieth century the road began to be asphalted with bitumen, in some instances with the macadam been removed or simply just covered, becoming part of the subsurface providing a stable base support on which to lay the new surface. The application of macadam as a construction method, however, remained in use past the first twenty years of the 20th century. The possibility of layers of different construction materials mixed in the **Carretera Central**’s composition, especially on the sections less affected by modern interventions, makes the subsurface of the **Carretera Central** a potential archeological resource, adding weight to the significance of its travel-way.

Besides its travel-way, when evaluating the significance and integrity of any road, the alignment of the resource is most definitely an important aspect to be considered. Horizontal alignment refers to the road’s movement to the left or right, in other words, its curves. While the vertical alignment refers to the road’s movement up and down, its hills. Even with expected changes on its course due to road improvements and interventions on its grading for mandatory safety reasons within the last one hundred and thirty-two years of continuous use, the alignment of an extended part of the **Carretera Central**, remains extremely close to its original course and design, reflecting a high level of integrity upon the road’s historic character.

The ability of the road’s structures in transmitting their significance and their association with the road itself is also an important aspect when determining the historical character of a road. Essential structures that are integral to the road’s design and function include bridges, culverts, retaining walls

⁸⁸ Paul Daniel Mariot, *The Preservation Office Guide to Historic Roads. Clarifying Preservation Goals for State Historic Preservation Offices, Establishing Preservation Expectations for State Transportation Departments*. June 2010.

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and others.⁸⁹ As previously shown, the **Carretera Central** retains many of the original structures purposely designed and built during the 19th century and/or very early 20th century to sustain the road's engineering mission: bridges, *pontones*, *tajeas*, *tajoas*, retaining walls, among others.⁹⁰

The roadside is the second area that needs to be considered in determining any road's historical significance. The roadside is composed of the elements and structures that are immediately adjacent to the road and enhance its function, use or safety. Elements associated with the roadside include: the right of way, swales, barriers and signs, among others. The **Carretera Central's** roadside has all these mentioned elements easily identifiable. Many of them, like the safety barriers, respond to very early construction periods. However, in its roadside, the **Carretera Central** has among its associated resources one that is unique: the *casillas de camineros*. As the road menders system was not practiced within the continental United States, the resource is not part of the US road construction legacy, making the sixteen *casillas de camineros* in the **Carretera Central** a very special property statewide and in the US built context as well.

The setting is the third aspect that needs to be considered in assessing a road's significance and integrity. The setting refers to the area beyond the right-of-way, with elements like landscape features (parklands, natural areas, plantings), character (rural, suburban or urban in nature), and the view-shed (encompassing everything that can be seen from the road at a close or far distance).⁹¹ When completed in 1886, the character of the **Carretera Central** incorporated an urban and rural landscape. Departing San Juan and ending in Ponce, the road traversed and united the urban core of six municipalities, making the urban component a significant element of the road's setting. On the other side, as the **Carretera Central** was the first state-sponsored, first-class rated road built through the harsh and "virgin" terrain of our "continental divide", the Cordillera Central, the rural landscape and the rural view-shed were a dominating aspect, highly praised by the 19th century travelers that transited through its challenging winding course in their horse-pulled carriages. The view of the farm lands with their coffee or tobacco crops (in the highlands) or the never-ending sugarcane crops (in the coastal plains),

⁸⁹ Ibid., 12.

⁹⁰ Out of the twenty-four bridges located within the **Carretera Central**, eleven are included in the National Register of Historic Places: *Puente Martín Peña*, *Puente Río Piedras*, *Puente General Norzagaray*, *Pontón La Concepción*, *Puente Arenas*, *Puente La Liendre*, *Puente del Río Matón*, *Puente General Méndez Vigo*, *Puente Padre Iñigo*, *Puente de Las Calabazas* and *Puente Río Portugués*. Some of these bridges have no equals within the US context.

⁹¹ Op. Cit., 17.

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became part of the collective memory and experiences deeply associated with the **Carretera Central**. Even though that by the time it was completed the road traveled throughout some relatively dense populated areas (the urban cores of San Juan, Río Piedras, Caguas, Cayey, Aibonito, Coamo, Juana Diaz and Ponce), the rural character of its route with the greenish landscape, the isolated deep valleys and the magnificent views from the high grounds became part of the cultural imagery expected to be found within the **Carretera Central**'s setting.

The relationship of these multiple areas provides the analytical base to properly determine the integrity of a road and its ability to convey its historic significance. That is, the built resources that conform the travel-way, the roadside and the setting, should and must be combined with the understanding of the construction materials, the historic context and engineering approaches, to determine which sections of the **Carretera Central**'s 134 kilometers better represent the historic significance of the property.

Few historic roads, if any, exist unchanged and unaltered since first conceived and constructed. Many historic roads have a history of evolution and changes that present the modern observer and researcher with an array of layers, alignments, materials, alterations, accommodations, and even loses over the years. Most definitely, it will be impossible to pretend to nominate the 19th century **Carretera Central** to the National Register of Historic Places in its entirety, because as expected, the resource evolved through time under new pavement material, realignments, safety and speed regulations, traffic volume, new types of motor vehicles, among many other structural, commercial and social requirements placed upon it.

Regardless of the difficulty of finding the unchanged and unaltered old road, the past is still the departure point to analyze the historic, engineering, and social significance of today's **Carretera Central**. Only with an understanding of the road's history and its current status can a proper evaluation of the resource's integrity be accomplished. That was precisely the guiding objective of the developed previous historic context. A brief look at the individual sections, however, needs to be done to identify and designate the contributing tracts of the old road.

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San Juan-Río Piedras Section (PR-25)

Today's footprint of the old **Carretera Central** is mostly found within state roads PR-25, PR-1 and PR-14. The road's mileage extension has two starting points, one in San Juan going south, and one in Ponce going north. PR-14 starts at Ponce, with its kilometer 0.0 at the east corner of the *Plaza de la Abolición de la Esclavitud* (Calle Mayor, local street), running north through Juana Díaz, Coamo, Aibonito, and ending-up at Cayey's kilometer 73.1. From the northern starting point, PR-25/PR-1's kilometer 0.0 is located at the south-west corner of Plaza Colón, in Old San Juan, running south towards Río Piedras, Caguas and ending-up at kilometer 55.4, meeting PR-14 in Cayey.

The **Carretera Central** was completed in 1886. The section of thirty-five (35.7) kilometers between San Juan and Caguas was finished in 1871; the twenty-five (25.1) kilometers between Caguas and Cayey, the ten (10.5) between Aibonito and Coamo, and the twenty-six kilometers between Coamo and Juana Diaz were completed by 1881. In the years 1875 and 1880, respectively, the Ministerio de Ultramar took charge of the provincial road joining Juana Diaz and Ponce (12.4 kilometers) and that joining the city of Ponce with Ponce Playa (6 kilometers), officially adding these two as part of the Military Road. The last portion of the **Carretera Central** to be built, between Cayey and Aibonito, with a length of nineteen (19.7) kilometers, was finished in 1886.

The stretch between San Juan to the Río Piedras' town square had an extension of twelve kilometers. Three projects were drawn for this section, with Caguas as their ultimate destination, passing one of the projects through Guaynabo, one through Río Piedras, and a third one somewhere in between. Due to the avid requests from the authorities in Río Piedras, the town was included within the route. Very little is known about the construction process of these first twelve kilometers, due to lack of primary sources. It was mostly built by the administration, but private contractors like Juan Bertoly, Juan Oliver, and Gustavo Heinacher were also involved in the early period of construction. The contract given to Bertoly in 1851 provides certain information about the road: it was built using the macadam system and it was approximately eight meters wide.⁹² It is safe to assume that the width of the travel-way was to be kept evenly along the entire road from San Juan to Río Piedras. Two significant bridges were built as part of these twelve kilometers: the San Antonio Bridge and the Martin Peña Bridge. The original structures crossing the water obstacles on both locations dated from the early sixteen century.

⁹² AGPR. Fondo: Obras Publicas. Serie: Carreteras. Caja 2106.

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Today, there is the *Puente Guillermo Esteves* (Bridge # 86), a reinforced concrete structure built in 2010, and the 1939 *Puente de Martin Peña* (Bridge #185), a reinforced concrete structure that span 73.5 meters over the *Caño de Martín Peña*. The documentation sustains that several *casillas de camineros* were built along the San Juan – Río Piedras section. However, all of them have been lost.

The loss of functional components like all its *casillas de camineros* and the main one of significant bridges (*Puente Guillermo Esteves*), along with the loss of structural elements like *alcantarillas* and *tajeas*, greatly reduce the integrity of this section's travel-way and roadside and its ability to transmit its historic association with the **Carretera Central**. **As such, the San Juan - Río Piedras section is not considered a contributing tract to the Carretera Central.**

Río Piedras-Caguas Section (PR-1)

The 23.7 kilometers between Río Piedras and Caguas were divided in four sections as part of its construction plan, with the first two sections running from Río Piedras to Quebrada Arenas and the other two, from Quebrada Arenas to Caguas. All the work conducted was done by the government, except for 4,340 feet, built by Gustavo Steinacher, a private contractor, extending from Río Piedras Bridge to Quebrada Beltran. The first two sections were completed by 1851, and the last two were done by 1856. By the time of its completion, the width of the stretch oscillated between seven to twenty-four meters. To provide for its proper maintenance, five *casillas de camineros* were built along the route. Except for one casilla, today in the municipality of Guaynabo, now in a by-passed stretch of road designated PR-8834, all the other four *casillas de camineros* in the Río Piedras-Caguas section have been lost.

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Some of the earliest and most impressive bridges in the **Carretera Central** were built specifically for this section (**Table 3**).

Table 3. Source: Juan Castillo, La Carretera Central, Su Historia. Revista de Obras Públicas de Puerto Rico. Enero 1930, Año VII, Número 1, 22.

Name	River
Río Piedras Bridge (1853)	Río Piedras
Puente Norzagaray (1855)	Quebrada Frailes
Puente Latorre	Río Bairoa
Puente Isabel II (Las Damas)	Río Caguitas
Puente Quebrada Arenas	Quebrada Arenas
Pontón La Concepción (1856)	Río Cañas

As parts of the Río Piedras-Caguas section were deviated, straightened and widened, due to urban sprawl, larger and heavier vehicles, increase in speed limits but with added safety regulations, and continuous re-pavements, some of its significant components were either lost or by-passed. The last is true precisely with three of the above-mentioned bridges: Río Piedras, Norzagaray and La Concepcion, currently located in state roads PR-8839, PR-873 and PR-798, respectively, and no longer part of the PR-1. The Las Damas Bridge, crossing over Río Caguitas into Caguas’ urban core, had a tortuous history on its own. For a long time, it was a wooden bridge. By 1858, it became a suspension bridge, first one ever in the island and the Antilles. This bridge lasted until 1861, when it was destroyed by a river flood. By 1870, a new metal and masonry bridge was in place, to be destroyed by another river flood in 1899. In 1907, a one hundred feet, Bow String metal frame type with concrete abutments bridge was inaugurated at the crossing. Finally, the present bridge is a non-contributing modern 1990s construction.

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The development and modernization of the Río Piedras-Caguas section had a tremendous adverse effect upon other functional components as well. Twenty-four sewers (ranging from one to 3.5 meters in width) and seven *tajeas*, mostly build during the 19th and early 20th century were still extant resources in this section by the early 1930s. However, most of those resources have been lost, with the very few remaining precisely in the by-passed' sections that are no longer part the official PR-1.

The loss of functional components like the *casillas de camineros*, the loss of structural elements like bridges, *alcantarillas*, and the re-routing of large parts of the Río Piedras- Caguas branch, by-passing sections that contain contributing elements (bridges, *alcantarillas*), greatly reduce the integrity of this section's travel-way and roadside and its ability to transmit its historic significance as well. **As such, the Río Piedras-Caguas section is not considered a contributing tract to the Carretera Central.**

Caguas – Cayey Section (PR-1/PR-14)

This section of the **Carretera Central** is about twenty-five (25.1) kilometers in length, being one the hilliest areas with long and continuous stretches like the Alto de las Cruces, an ascending slope than runs for approximately seven thousand meters along PR-1, from Kilometer 41 to Kilometer 48. The groundbreaking for the construction of the Caguas – Cayey section began on September 7, 1875, and it was formally finished on June 15, 1881.⁹³ This section was designed by Civil Engineer Manuel López Bayo, also responsible for the planning and design of the Cayey – Aibonito section.

To properly locate the best route from Caguas to Aibonito, destination of Bayo's project, became an enterprise on its own. In order to reach Aibonito, the undertaking required to face-up the unavoidable challenges of the Cordillera Central. The engineer properly recorded a detailed memoir of his efforts to find not only the most technically feasible route, but the most economically advantageous as well.⁹⁴ Not having any maps that could help in identifying the possible routes, there was no other choice but to conduct an intense reconnaissance of the area, facing the sometimes-impenetrable vegetation. Bayo physically surveyed the existing *caminos de herraduras* but found these confuse as they didn't respond to a though-out plan, but instead were the result of the communication's needs of the immediate local inhabitants.

⁹³ Juan Castillo, La Carretera Central, *Revista de Obras Públicas de Puerto Rico*, Año VII, Número 2, 37.

⁹⁴ AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 22. Caja 2125a.

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Finally, Bayo identified three possibilities: passing the road through Cidra, stretching the road alongside the river bank of La Plata River all the way to Aibonito, by- passing any urban center, or passing the road through Cayey. To start, Bayo considered the material wealth produced by Cidra. With a population of 5,317 inhabitants by 1873, Cidra was producing 2,000 quintals of coffee, 1,000 of tobacco and 2,000 of rice. Passing the road through the town, to finally reach Aibonito involved the construction of 38,878 meters of macadam road. The second alternative seems to have no positive economic impact upon the area, as La Plata river bank was pretty much desolated. Besides, the closeness of the current could become a destructive force during floods. The sinuosity of the river's alignment implied similarly, a sinuous road. In the other hand, passing the road through Cayey, the third alternative, implied connecting the road to a town inhabited by 10,000 people that by 1873, was producing 15,000 quintals of coffee, 500 of sugarcane, 3,000 of tobacco, 6,000 liters of rum and 3,000 bushels of rice.

Obviously, running the road through Cayey was a better choice from the economic point of view. Bayo reached other conclusions that supported choosing Cayey as the middle point in the road between Caguas and Aibonito. Through Cayey, the estimated length for the Caguas-Aibonito stretch was of 38,203 meters, 675 meters less than that if it was ran through Cidra. The route would be less hilly, once passed el Alto de Las Cruces. After reaching Río La Plata, the slopes were gentler and flatter all the way to Cayey's urban center. Beyond, Cayey, of course, López Bayo was aware of the rough and hilly terrain from Cayey to Aibonito. Just like in the Río Piedras – Caguas section, the route from Caguas to Cayey was divided into four sections: the first stretch from km. 40.7 to km.45.3, half of the Alto de Las Cruces' climb, approximately 4,637 meters; the second, from km. 45.3 to km. 51.9, reaching the Encanto Ravine, a length of 5,855 meters; the third stretch was from km. 51.9 to La Plata River at km. 55.6, for length of 4,436; and the last stretch been of 4,802 meters from km. 55.6 until reaching Calle Comercio, Cayey's main street at km. 60.8 (**Fig. 22**).

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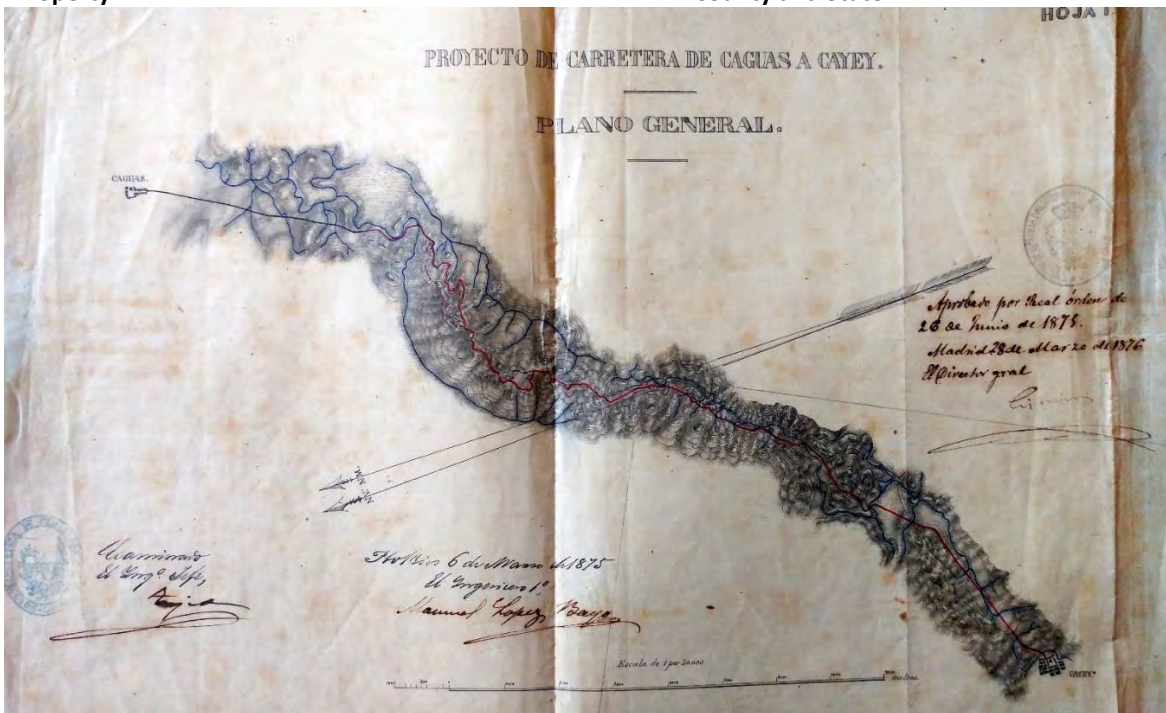


Figure 22. López Bayo's 1875 propose route, in red ink, of the **Carretera Central** from Caguas to Cayey.⁹⁵

Bayo's propose route departed from the very end of the five kilometers already built from Caguas' urban center towards Alto de Las Cruces, depicted as a solid black line at the upper left corner in the above figure. This made the propose construction to be slightly over twenty kilometers. Although the route was studied and planned by Bayo, most of the actual construction was done under the direction of civil engineers Raimundo Camprubí and Enrique Gadea, with the participation of Manuel Maese by February 1882. However, by that later date, the section Caguas – Cayey was finished and open since June 1881.

By the time it was finished, the twenty kilometers from Caguas – Cayey, with an approximate construction cost of \$14, 050 per kilometer, included nine *pontones*, thirty-six *alcantarillas*, and thirty-three *tajeas*. The route also required the construction of three significant bridges: *Puente Las Quebradillas* (Puente #11), *Puente Quebrada Beatriz* (also known as *Puente La Liendre* or Puente #467) and *Puente Río La Plata* (**Fig. 23**). The first two were designed by López Bayo himself, while the author of *Puente Río La Plata* (Puente Arenas) was engineer Mariano Sichar.

⁹⁵ AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 36. Caja 2134.

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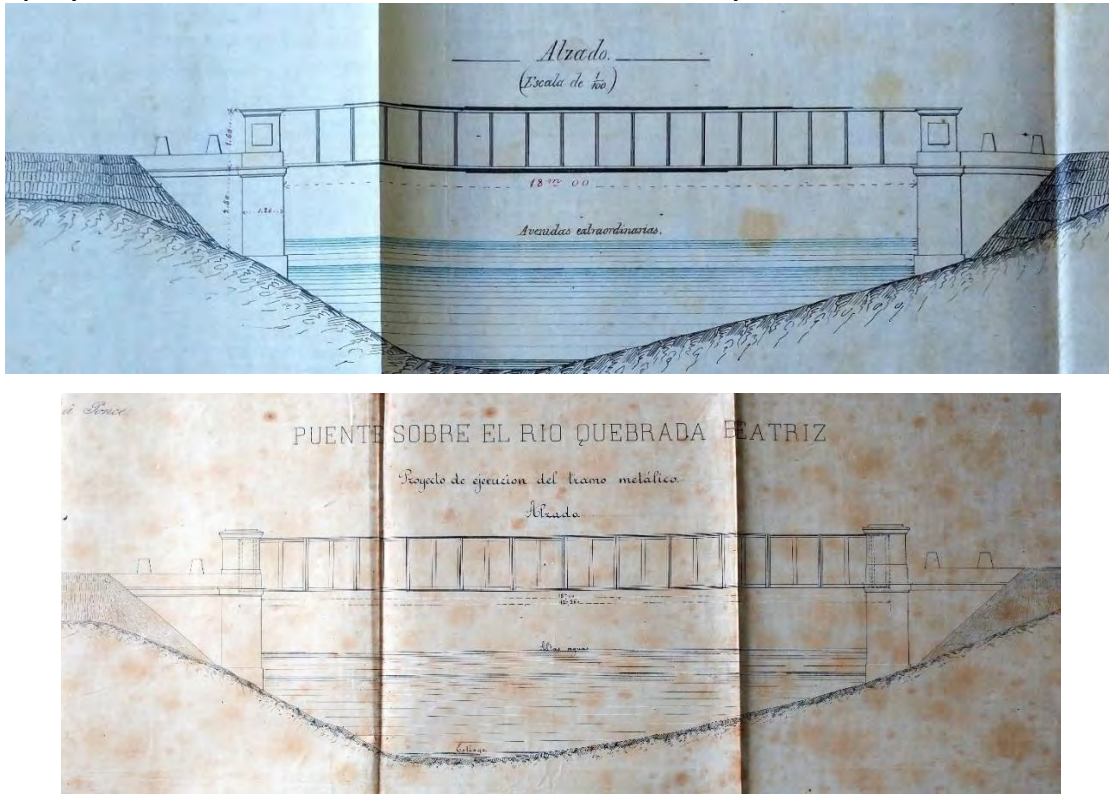


Figure 23. Detail of Lopez Bayo's 1875 drawing for Puente Las Quebradillas (top) and Puente Quebrada Beatriz.⁹⁶

The documents pertaining to the first two bridges mentioned above are illuminating. The metallic sections were done in Europe. The local engineer, in this case Lopez Bayo, made a general design for the needed bridges. Details of particular significance, like the design of the metal parts, were done by specific engineers. A recurrent name extremely associated with many metal bridges in the **Carretera Central** (and in the island in general) was José de Echevarría, who had the title of Public Works Commissioner, assigned to Paris, France. Once the design was approved, Echevarría was responsible to announce that the government of Puerto Rico was accepting public bids among the European companies specialized in such construction. Later, he would send to Puerto Rico the final bids with his recommendations (**Fig 24**).

⁹⁶ Puente Las Quebradillas, AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 22. Caja 2125a. Puente Quebrada Beatriz, AGPR, Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 26. Expediente 3-192. Caja 2127.

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Comparamos a las proposiciones presentadas por varias fabricas para la construccion del material del tramo metalico para un puente sobre el Corriente de las Quebradillas, en la isla de Puerto Rico.

Casas proponentes	Domicilio	Localidades en que tienen los talleres	Puertos de embarque	Peso total en toneladas de 1000 ^{ks}	Precio por tonelada Frances.	Precio total Frances	Dias de construccion	Observaciones
<i>Eugene Rollin & Co</i>	<i>Braine-le-Comte (Belgica)</i>	<i>Braine-le-Comte</i>	<i>Anvers (Belgica)</i>	<i>22.000^{ks}</i>	<i>305⁺</i>	<i>6710⁺</i>	<i>4 meses</i>	
<i>E. Baudet</i>	<i>Paris</i>	<i>Argenteuil (Francia)</i>	<i>Havre (Francia)</i>	<i>22.000</i>	<i>350</i>	<i>7700</i>	<i>3</i>	
<i>Imbert freres</i>	<i>St. Chamond (Francia)</i>	<i>St. Chamond</i>	<i>Marsella (Francia)</i>	<i>21.960</i>	<i>360</i>	<i>7905.30</i>	<i>4</i>	
<i>Hamilton's Windsor Iron Works Limited</i>	<i>London</i>	<i>Liverpool (Inglaterra)</i>	<i>Liverpool</i>	<i>22.000</i>	<i>360</i>	<i>7920</i>	<i>3</i>	<i>La conversion de libras esterlinas a francos se ha hecho al tipo de 25.20 por libra.</i>
<i>Compagnie de Fives Lille</i>	<i>Paris</i>	<i>Fives Lille (Francia)</i>	<i>Embarque (Francia)</i>	<i>21.960</i>	<i>380</i>	<i>8345</i>	<i>7</i>	
<i>H. Roussel</i>	<i>Paris</i>	<i>Paris</i>	<i>Havre</i>	<i>21.960</i>	<i>400</i>	<i>8784</i>	<i>4</i>	
<i>H. Socet et Co</i>	<i>Paris</i>	<i>Montataire (Francia)</i>	<i>Havre</i>	<i>22.267</i>	<i>396.70</i>	<i>8833.30</i>	<i>5</i>	

Nota.- Se han pedido tambien proposiciones a los constructores F. Rigolet y Societe anonyme de Constructions Fenechambault que contestaron no poder encargarse; el primero por no poder competir en precios con las casas belgas; la segunda por tener otros trabajos y no poder ejecutar los puentes sino en plazos demorados largos, que fueran probablemente aceptados.

Paris 15 de Febrero de 1877
El Ingeniero jefe
José de Echevarría

Figure 24. An 1877 document, signed by José de Echevarría, showing the European companies that placed a bid for the construction of the Puente de Las Quebradillas for the Carretera Central in Caguas, Puerto Rico. The company *Eugene Rollin and Cia*, from Belgium, with the lowest bid, was the one recommended by Echevarría. The company ended-up building the metallic components for both, Puente de Las Quebradillas and Puente Quebrada Beatriz (Puente La Liendre).⁹⁷

Once the contract was assigned, an initial payment of 25% of the total amount was given in advance to the awardee. At the job's completion, and after been inspected and provisionally accepted by the Resident Engineer, a disbursement of 50% of the cost was given to the contractor. The Resident Engineer inspected the metal parts completely assembled at the European factory. If it passed the inspection, every part was numbered, identified and dismantled, to be later re-assemble like a puzzle once in the island. An additional 15% was paid as the pieces were delivered to the port of shipment. The remaining 10% was paid once the entire bridge was mounted in its destination and a reasonable amount of time has passed, making sure that every part was functioning to standards.

⁹⁷ AGPR, Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 23-24. Caja 2126.

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On February 28, 1877, José de Echevarría wrote to the General Governor of Puerto Rico recommending that the contract for the metal section for *Puente de La Quebradilla* be given to the Belgian company *Eugene Rollin & Co.*, who agree to do the job for 6,710 francs. The Resident Commissioner mentioned that *Rollin* had been doing this type of jobs for a long time and have already built a metal bridge for the city of Mayaguez (La Marina). By May 24, 1877, the contract was awarded to *Rollin*. On February 9, 1878, engineer Enrique Gadea, indicated that the metal sections for both Puente Quebradillas and Beatriz, built by *Rollin*, had arrived in San Juan, Puerto Rico, in the very same boat, a Danish ship named "Galeón".⁹⁸

The other significant bridge built during the 19th century for the section Caguas- Cayey was Puente Arenas, with the longest span of any bridge built in Puerto Rico during the Spanish government. When the **Carretera Central** was officially open in 1886, the structure was a temporary wooden construction. Designed in 1889 by engineer Mariano Sicchar, who was then the District Engineer at Ponce, and built by 1894, Puente Arenas is considered the most important metal bridge built in the island during the Spanish colonial times, showing remarkable European elegance and workmanship (**Fig. 25**).

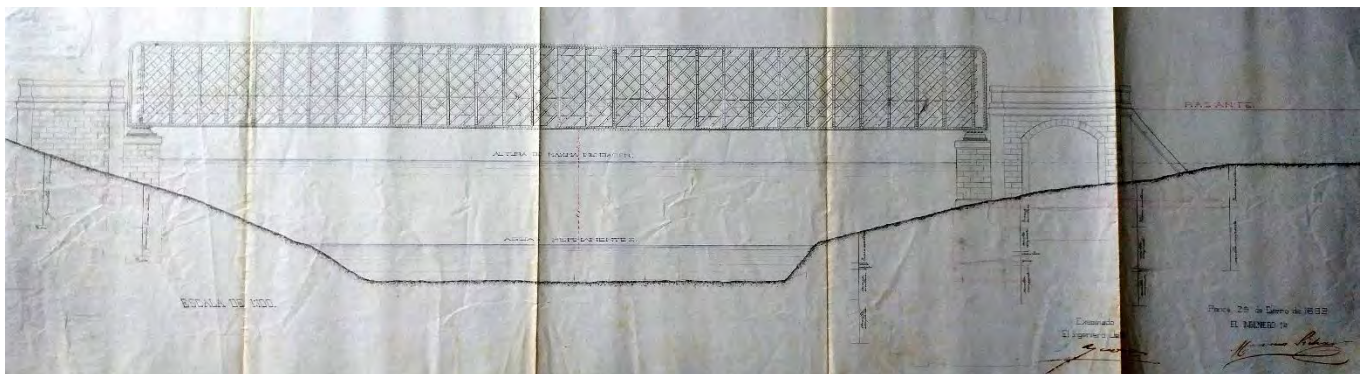


Figure 25. Mariano Sicchar's 1889 drawing for Puente Arenas. The 23,623-pound steel truss was built by the prominent Belgian firm Nicrisse and Decluve for 56,221 pesos. Julio Larrinaga, well-known engineer, oversaw the assembling of the impressive structure in 1894.⁹⁹

Besides the functional components on the travel-way (bridges and *alcantarillas*) for the Caguas – Cayey section, Lopez Bayo included in the 1875's budget the construction of four *casillas de camineros*, evenly aligned along the road, becoming the most essential component of the **Carretera Central's** roadside. Each *casilla* was to accommodate two peons and their families. Using the same layout for all

⁹⁸ AGPR, Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 127. Caja 2127.

⁹⁹ AGPR, Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 23,24. Caja 2126.

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of them, the casillas were to have masonry, brick and rock walls; a water cistern of brick walls and vault; a roof made of three layers of thin bricks, supported by wooden (ausubo) beams and girders; a shed on the back covered with roofing boards; two wooden doors for the exterior, six wooden doors for the interior and eight wooden windows; wooden floors for the interior, but the central hallway separating the living quarters was to be of bricks. The *casillas de camineros* was a common resource within Spain building legacy as the road menders system dominated the road construction in most of Europe. However, the *casillas* developed in Puerto Rico were larger in size (a double dwelling opposed the single dwelling used in Spain), with more windows for air circulation due to the local hot climate, and square in their layout, opposed to the rectangular shape in the Peninsula. The local *casilla de camineros* was considered an improvement upon Spain's version (**Fig. 26**)¹⁰⁰



Figure 26. Three of the *casillas de camineros* built along the section Caguas-Cayey. The first two (from left to right) are located at PR-1, km. 40.9 and km. 47, respectively. The third one is located at PR-14, km.70.8

As previously mentioned, when evaluating the significance and integrity of any road, the alignment of the resource it's most definitely an important aspect to be considered. Horizontal alignment refers to the road's movement to the left or right, its curves. While the vertical alignment refers to the road's movement up and down, its hills. Among the most significant characteristics of the section Caguas – Cayey it's the remarkable integrity of the travel-way's alignment. A considerable large portion of today's footprint impressively follows Bayo's 1875 proposal for the road (**Fig. 27**).

¹⁰⁰ AHN, Ultramar, 403, Expediente 4 (PARES). The improvements were designed by engineer Raimundo Camprubí and approved by Royal Decree on April 13, 1875. This means, that most of the casillas de camineros built in the Carretera Central' section San Juan- Río Piedras-Caguas were most definitely a single dwelling building, as the extant resource in Guaynabo.

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Figure 27. The image presents an overlapping of Bayo's 1875 drawing with the propose route from Caguas to Cayey, and a 2018 Goggle's map view with today **Carretera Central**'s footprint.

The section Caguas – Cayey of the **Carretera Central**, when observed and analyzed, considering and understanding the distinctive extant resources in the road, the right-of-way (roadside) and the setting, presents a great level of integrity, allowing the property to convey its historic significance. **The PR-1 stretch from Km. 40 in Caguas to Km. 55.4 in Cayey, with its entire functional and supporting component (bridges, casillas de camineros, culverts, pontones, tajeas and tajoas) is identified and designated as a contributing section to the Carretera Central's historic significance.**

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Cayey-Aibonito Section

The project for this tract was prepared by engineer Manuel Lopez Bayo and executed by Raimundo Camprubí, Enrique Gadea and Manuel Maese. Bayo's design was approved by the central government in Spain in February 18, 1878. However, Bayo's plan was prepared in March 3, 1876.¹⁰¹ The engineer estimated in its initial plan that the 19,268 kilometers between Cayey and Aibonito were to be finished in three years. Construction of this section began on September 25, 1879 and it was finished in 1886, taking eight years to complete the undertaking, five years over the estimated time.

Lopez Bayo's 1876 memoir pertaining this section is just as illuminating as the one prepared for the Caguas-Cayey section. The brilliant engineer started his narrative reminding the future readers the importance of the **Carretera Central**, the most significant road proposed in the *Plan Carretero*, and the one that would bring the greatest commercial and agricultural benefits, unifying the political capital, San Juan, with Ponce, the richest city in the island. At the same time, in this memoir, the author comments on the development of the entire undertaking, as he mentioned that by the time he was preparing the document, the **Carretera Central** was completed in its section from San Juan to Caguas; from Ponce to Juana Diaz and from Juana Diaz to Coamo; and that the Aibonito to Coamo and Caguas to Cayey section were under construction. The only tract left, was the 19 kilometers between Cayey and Aibonito.

Some of the most challenging obstacles within the **Carretera Central's** 134 kilometers were found in the Cayey-Aibonito section. The mighty Río de La Plata was a determining presence that had to be considered throughout the entire plan. Lopez Bayo did an intense reconnaissance, surveying the river's banks, searching for the most cost effective and technically feasible route. Lopez disregarded the existing trails and opted for following the river flow, surveying both river banks. The engineer found, that even that it had very rocky steep slopes, formed by huge loose rocks entangled with the roots of the dense surrounding vegetation, the left bank was the shorter and cost-effective route (**Fig. 28**).

Cayey and Aibonito's differences in altitude was also an unavoidable factor. The first sits in the beautiful la Plata River Valley about 365 meters above sea level, while Aibonito sits in a flat plateau surrounded by the Cordillera Central's mountains at about 731 meters above sea level. The difference in altitude between the two towns, the sinuosity of Río La Plata' riverbed and the harsh topography of

¹⁰¹ AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 36. Folio:130. Caja 2134.

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the Cordillera Central, demanded the construction of a winding, narrow and with tough climbing sections road between both towns.

The route selected was estimated to be 19,268 meters in length from the western end of Calle Comercio in Cayey's urban center to the eastern extension of Calle San Jose in Aibonito's urban center. Considering the means of transportation, ox-carts for agricultural products and passengers' coaches, it was suggested by Bayo, to reduce the width of the road along this section to six-meter wide, with four-and-a-half meter macadam pavement for transit and one-and-a-half meter of massively compacted rock dust equally divided on each side for pedestrians and horse-riders.

Just like in the Caguas-Cayey tract, the Cayey-Aibonito road was divided in four sections: 4,218 meters from Cayey's center to Quebrada Toita; 4,403 meters from Toita to the crossing over Río Matón; a steep climbing of 5,315 meters in length from Río Matón to Quebrada del Tronco; and finally, 5,330 meters from Tronco to Aibonito's urban center (Calle San Jose). Bayo suggested that the construction should start at each town simultaneously, working toward each other, until meeting somewhere in between. Open to bids twice, no private contractors made any proposals and the *Jefatura de Obras Públicas* took charge of the undertaking.



Figure 28. Manuel López Bayo's 1878 propose route, in red ink, for the Cayey-Aibonito section, keeping the **Carretera Central** along the "left" bank of Río La Plata.¹⁰²

¹⁰²AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Caja 2125a.

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The nineteen kilometers between Cayey and Aibonito was the last track to be built in the **Carretera Central**. The area’s harsh topography required a constant revision of the construction plans. Due to the difficulties in accessing and transporting construction materials, the engineers in charge used an array of innovations to successfully complete the works: rocks from the river beds to be used for macadam pavement; the acquisition of rocks crushing machines; the construction of a brick factory in Aibonito to facilitate their acquisition equipped with machinery to accelerate the production process; electric fuses for the explosive devices, among others.

The section was also the one that required the most intensive use of labor. Hundreds of free laborers were provided by the towns of Cayey and Aibonito. However, forced labor was the backbone of the undertaking. After the completion of the Caguas – Cayey section in 1881, every available *confinado* was brought to work in the Cayey-Aibonito area, intensively using the hardest and toughest brigades of inmates (First, Third and Fourth Brigades). By the time it was finished, it came out to be also the most expensive section of the entire **Carretera Central**. According to Juan E. Castillo, the final cost for this track was \$534,637, which averaged around \$27,590 per kilometer, in 1930’s dollars.¹⁰³ The section required the construction of three bridges (**Table 4**).

Table 4.

Bridge	Location	Length	Material	UTM’s
Quebrada Toita	PR-14 km. 65.5	15 meters	Metal and masonry	E-796809 N-2007601
Río Matón	PR-14 km. 63.2	18 meters	Metal and masonry	E-795157 N-2007852
Quebrada Honda	PR-14 km.57.2	13meters	Metal and masonry	E-792520 N-2008205

Two of the bridges mentioned above were built after the **Carretera Central** was officially open in 1886. The iron lattice girder bridge over Quebrada Toita was built in 1892; the iron lattice girder bridge over Quebrada Honda was also built in 1892. The iron elements for both bridges were ordered from the firm *Nicrisse & Decluve* in Belgium (**Fig. 29**). Both bridges were design by Manuel Maese in 1887 and assembled in their present location by Puerto Rican engineer Tulio Larrinaga.¹⁰⁴

¹⁰³ Juan E. Castillo. *La Carretera Central*, *Revista de Obras Públicas de Puerto Rico*, Marzo 1930, Año VII, Número 3, 66.

¹⁰⁴ Luis F. Pumarada O’Neill, *Los puentes históricos de Puerto Rico*. Centro de Investigación y Desarrollo. Recinto de Mayagüez. Universidad de Puerto Rico. Autoridad de Carreteras y Transportación de Puerto Rico, Diciembre de 1991, 80.

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Figure 29. Partial views of Puente Quebrada Honda's surface and abutments. Its narrowness allows incoming vehicles in one direction at a time. Also, a partial view of the **Carretera Central** with its tight curves.

The bridge over Río Matón, designed by Manuel López Bayo himself, was built in 1886, and is considered one of the most attractive solid-web iron lateral girder bridges in the island, with impressive abutments of brick and stone elements (**Fig. 30**). This section also required the construction of two *pontones*, one over Quebrada Rabanal, and another over Quebrada Matón Arriba. Additionally, eighty-five (85) *alcantarillas* and seventeen (17) *tajeas* were built as well in this section.

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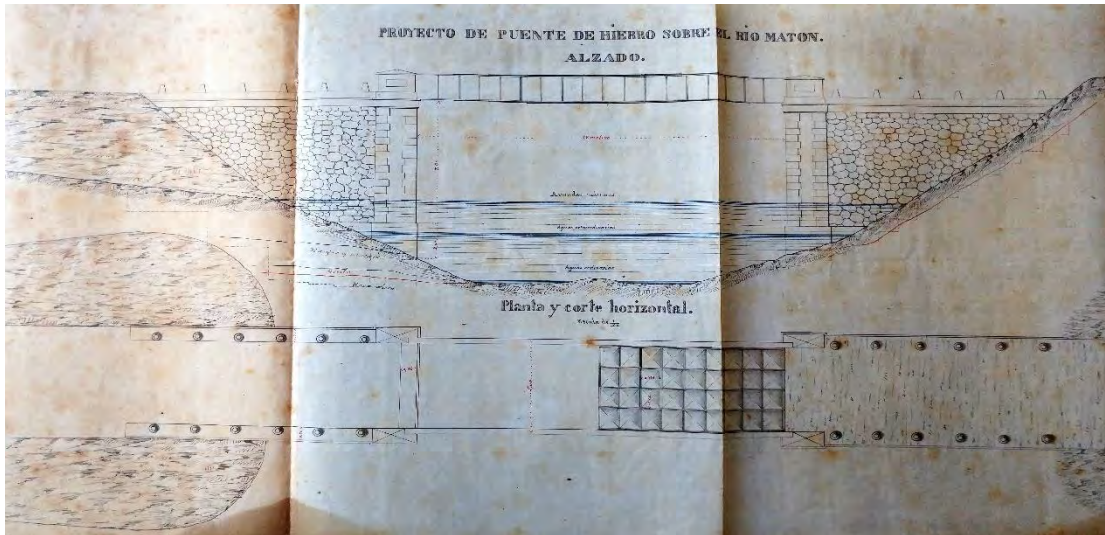


Figure 30. Above, a detail of Lopez Bayo's drawing for the Río Matón Bridge, signed on May 3, 1876.¹⁰⁵ Below, a surface view of Puente Río Matón and the Carretera Central

The components mentioned above (the travel-way, bridges, culverts, etc) are essential structures integral to the road's design and function. Aside from the functional structures in the road, there are other elements, as part of the right-of-way, that are adjacent to the road and enhance (or previously did) its function. In the **Carretera Central**, the most significant of these right-of-way elements are the

¹⁰⁵ AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 36. Caja 2134.

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casillas de camineros, built as residential/workshop units for the workers once responsible for the daily maintenance, preservation and policing of the road. The buildings became significant component of the Right-of-way built landscape (**Fig. 31**) (**Table. 5**).

Figure 31. The four *casillas* along the **Carretera Central** in the section Cayey-Aibonito.



Casilla de Caminero #5



Casilla de Caminero #6



Casilla de Caminero #7



Casilla de caminero #8

Table 5. The numbers assigned to the casilla correspond to the Casillas' Site Map in Section 7.

Name	Location	Ownership	UTM
Casilla de caminero #5	PR-14, km.64.3, Cayey	Private dwelling	E-795986 N-2007920
Casilla de caminero #6	PR-14 km.59.7, Aibonito	DTOP (abandoned)	E-793573 N-2008972
Casilla de caminero #7	PR-14 km. 57.7, Aibonito	Private dwelling	E-792441 N-2008981
Casilla de caminero #8	PR-14 km.51.7, Aibonito	ICP	E-790247 N-2008015

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The *casillas de camineros*, however, are not the only components that could be considered part of the right-of-way in the **Carretera Central**. Particularly in the section Cayey-Aibonito, there are extant structural resources from an early construction period used to enhance the utility and safety of the road itself, like the barriers below. A barrier is a safety feature designed to protect the vehicles from hazardous situations, today commonly constructed as guardrails or walls. As seen in the black and white early 20th century picture below, the safety barriers in the **Carretera Central** were normally built in the form of conical posts. Some of these early safety posts can still be found along certain tracts of the present travel way (**Fig. 32**).



Figure 32. Left, photo of an early 20th century section of the Carretera Central near Cayey showing the safety barriers. On the right, similar safety posts along the tract Cayey – Aibonito, PR-14, km 60.¹⁰⁶

The section Cayey-Aibonito has also the only known component purposely built in the **Carretera Central's** right-of-way (roadside) to function as a wayside or overlook, designed to provide access to a scenic view, which could serve as a mean of interpretation or just to add a pleasant feel to the road (**Fig. 33**)



Figure 33. The overlook, located in PR-14, km.57.8, Aibonito (UTM, E-792520 N-2008893). The construction materials and design of supporting walls suggest early 20th century construction period.

¹⁰⁶ For the 1900 photo see, Report of Military Governor of Porto Rico, from October 18, 1898, to April 30, 1900. Washington, Government Printing Office, 1900, 160.

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Just like the Caguas-Cayey section, the Cayey-Aibonito track, planned and designed by engineer Manuel Lopez Bayo, has among its significant qualities the remarkable integrity of the travel-way's alignment. Today's route impressively follows the very same footprint as when the road was completed in 1886 (Fig. 34).



Figure 34. In the images above, the arrows indicate the **Carretera Central's** footprint in 1886 and 2018. A close look clearly shows an undeniable match between today's footprint and the road as it was built one hundred and thirty-two years ago.

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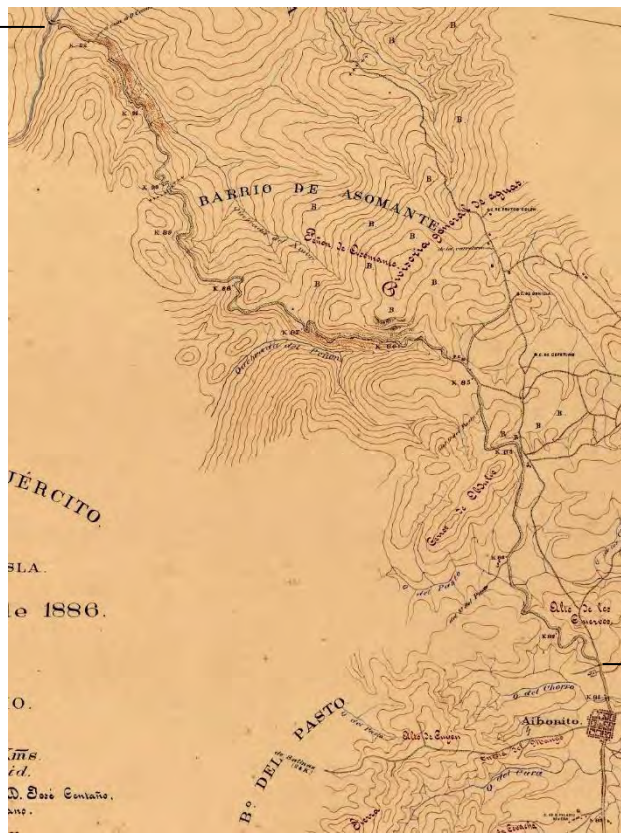
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The nineteen kilometers that comprise the length of the **Carretera Central** between Cayey and Aibonito, contain a multiple variety of resources in its road, in the right-of-way and in the setting, with a high degree of integrity. The entire tract greatly contributes to the **Carretera Central's** ability in transmitting its historic significance. **As such, the entire nineteen (19) kilometers of the PR-14 section from Cayey to Aibonito is identified and designated as a contributing section to the Carretera Central's historic significance.**

Aibonito – Coamo Section

Together with the section Cayey-Aibonito, the seventeen kilometers between Aibonito and Coamo were a great engineering challenge at the time of its construction. Considered among the roughest sections of the **Carretera Central**, the well-known *Cuesta del Asomante* in Aibonito is its most difficult tract. The *Cuesta del Asomante* is a very steep slope that runs for approximately seven and a half kilometers (**Fig. 35**).

Lowest point in La Cuesta de Asomante



Highest point in La Cuesta de Asomante

Figure 35. A partial view of an 1886 map showing the seven and half tortuous kilometers that comprised La Cuesta de Asomante in Aibonito

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The difference in altitude between the Cuesta del Asomante and Coamo's urban center provides an idea of the designing and construction difficulty that the section presented during its development. Asomante sits at six hundred and seventy-five (675) meters above sea level, while Coamo's urban core is one hundred and eighteen meters above sea level. The difference of 557 meters between the two points required that the road had to closely follow the contour lines embracing the mountains to create manageable slopes. The result was a road of seven kilometers with an extreme zigzag horizontal alignment.

The first project for this section was done by the military engineer Timoteo Lubelza in 1861, who also worked the one from Coamo to Juana Diaz. Even with Lubelza's plan approved by royal decree in August 12, 1862, no undertaking took place until 1874, when the construction began by the Jefaturas de Obras Públicas.

From 1874 until its completion in 1881, the Aibonito – Coamo section faced many problems.¹⁰⁷ The original budget worked by Lubelza had to be re-adjusted as the idyllic numbers face reality. The transportation costs were higher than expected due to the harsh location within the Cordillera Central. The local municipal authorities had the obligation for the daily supply of ox-carts and drivers to assist in the equipment and personnel movement from and to the working sites, but this was rarely the case. There were problems finding free laborers that would commit to the hard-working conditions. Many of the engineers in charge (Raimundo Camprubí, Enrique Gadea) complained constantly about the lack of support from the local municipal administrators, both in Coamo and Aibonito, in this matter too. The cities were required to supply laborers, either free or coerced, like those charged with vagrancy or forcing the un-employed to contract themselves to the Jefatura de Obras Públicas. The living quarters for the free workers and the many *confinados*, which were supposed to be provided by the municipal authorities, were usually described by the engineers as in extreme poor conditions.

By September 1876, engineer Camprubí requested from the central government that any available prisoner from any jailhouse in the island be sent to work in the Aibonito-Coamo section. It was also the very same engineer who a year later complained about the poor living conditions of the *confinados*, the low quality of their foodstuff and the high absenteeism among the *confinados* due to health conditions, faked and real.

¹⁰⁷ AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Folio 132. Caja 2142.

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By July 1877, the *Jefaturas de Obras Públicas* complained directly to the governor about the lack of support from Coamo and Aibonito. Even accusing the local officials in Coamo of delaying the construction process for personal benefits. It was indicated that three hundred (300) inmates and seventy (70) guards had their quarters nearby Coamo's urban center, and of course, were expending their hard-earned money in the local market and stores, contributing to Coamo's economy.¹⁰⁸ On July 27, 1877, the governor sent a hard-worded letter to both towns, strongly indicating that unless cooperation was given to the *Jefatura de Obras Públicas'* personnel, all works would to be suspended and left incomplete, while every guard and *confinados* was to be removed from the location and sent somewhere where they can useful. The threat worked its magic. The construction ran a lot smoother afterwards, with both municipalities trying to meet their quotas of workers and equipment, especially the ox-carts. By august 1878, Camprubí submitted a report indicating that the works on the road itself were almost completed and that the inmates could be send to other locations, mentioning that he was going to keep sixty of them to work the final details. The section was finished by March 1879, but without the needed bridges over the rivers Cuyón and Coamo. By the time it was finished, it was proved that the initial budget proposed by Lubelza was way off. In 1861, he indicated that it would cost \$278,312 to build the entire tract (37.4 kilometers) from Aibonito to Juana Diaz. Actually, it took \$209,760 to build just the 17 kilometers between Aibonito to Coamo.¹⁰⁹

In the Aibonito-Coamo section, three brick masonry *pontones*, twenty-nine brick masonry *alcantarillas* and seventeen brick masonry *tajeas* were built. Also, two significant bridges: Puente Las Calabazas, designed by Raimundo Camprubí and José de Echevarría, is an iron lattice girder bridge, twenty-one meter long, completed in 1882; and Puente Padre Iñigo, a structure of iron lattice girder type, with abutments and pier of rubble masonry with ashlar edges (**Table 6**). The wrought iron parts were done by *Eugene Rollin & Co.*, Belgium, while its general design was done by Raimundo Camprubí (**Fig. 36**).

¹⁰⁸ AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Caja 2144.

¹⁰⁹ Juan E. Castillo. *La Carretera Central*, *Revista de Obras Públicas de Puerto Rico*, Abril 1930, Año VII, Número 4, 99.

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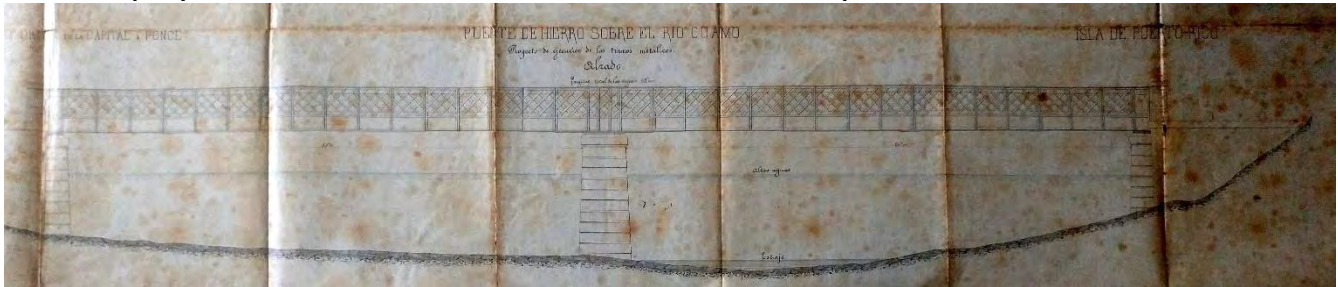


Figure 36. Above, José de Echevarría’s drawing for *Puente Padre Iñigo*, signed on December 25, 1876, in Paris, France. Below, the bridge in 2019.¹¹⁰

Table 6

Bridge	Location	Length	Material	UTM’s
Puente de las Calabazas (b. 1882)	PR-14 km. 38.8	21 meters	Metal and masonry	E-784345 N-2007973
Puente Padre Iñigo (b.. 1879)	PR-14 km. 34.3	53.2 meters	Metal and masonry	E-780091 N-2001233

¹¹⁰ For the 1876’s drawing, see AGPR. Mapoteca. Fondo: Obras Públicas. Serie: Carreteras y puentes. Exp. 1-185. Plano 18.

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Three casillas de camineros were built in the Aibonito – Coamo section (**Fig. 37**).



Figure 37. The first casilla, upper left, is located in Aibonito on PR-14, km. 45.9 (UTM E-786298 N-2006062). Built around 1880, it is currently used as a Visitor Center. The second casilla, upper right, built around 1880, located on PR-14, km. 40.5 in Coamo (UTM E-784964 N-2003035), is currently a private residence. The last casilla, located on PR-14, km. 34.3 (UTM E-780163 N-2001337), near Puente Padre Iñigo, is currently used as a Visitor Center in Coamo.

Just like the previous two sections, (Caguas-Cayey and Cayey-Aibonito) the Aibonito-Coamo tract has among its significant qualities the remarkable integrity of the travelway’s alignment. Practically, today’s entire route follows impressively the very same footprint as when the road was completed in 1886 (**Fig. 38**).

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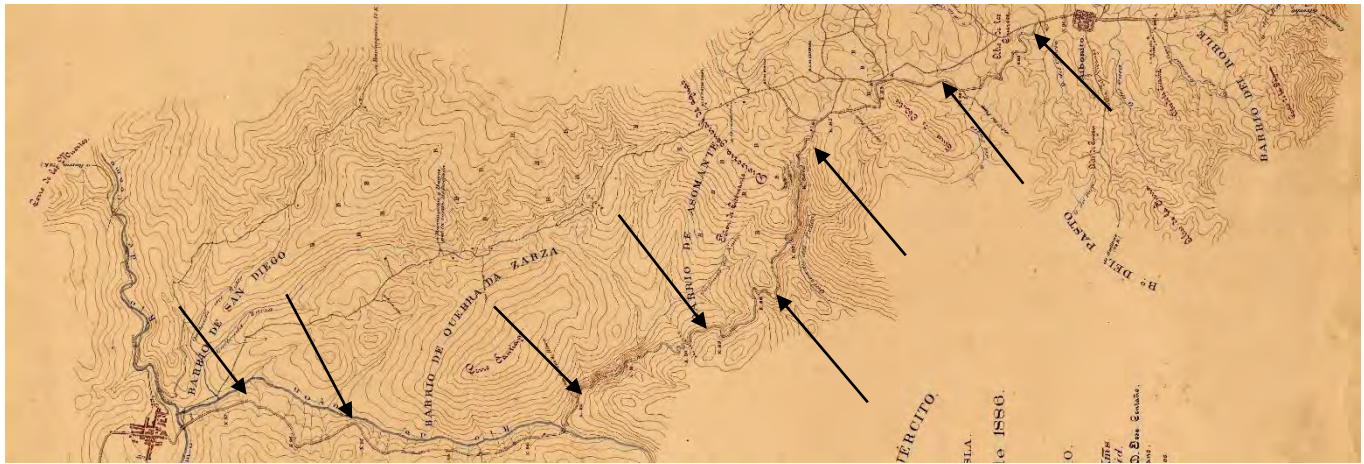


Figure 38. Above, a partial view of the 1886 map draw by the Spanish Corps of Engineers. Below, a Goggle 2018 view of the Aibonito-Coamo section. The upper right-hand corner yellow pin marks Aibonito's location; lower yellow pin is Coamo's. The arrows are approximately pointing towards the very same features in both images to show the remarkable similarity of the alignment of both footprints.

The Aibonito-Coamo section has a superb integrity in many of its components. The road's alignment perfectly matches the 19th century footprint. The integrity of the many extant components on the road, right-of-way and setting, easily allows the section to convey its historic significance. Additionally, as the

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site of the last military encounters between Spain and the United States during the Spanish American War of 1898, this section of the **Carretera Central** carries a historic layer of great significance that goes beyond its engineering qualities and the integrity of its components. **The seventeen kilometers between Aibonito and Coamo, with all the extant resources on its road, right-of-way and setting are identified and designated as a contributing section to the Carretera Central's historic significance.**

Coamo – Juana Díaz section

When measure from Coamo's town square to Juana Diaz's town square, the length of this section of the **Carretera Central** is slightly over twenty-six (26) kilometers. A road between the two municipalities preceded the **Carretera Central** by many years, more than likely been just a *camino vecinal* of rough design and planning to allow for passage of pedestrians and horse riders (*caminos de herraduras*). By 1858, Coamo made the economic arrangements to initiate the construction of a more permanent road towards Juana Diaz, acquiring the services of Timoteo Lubelza for the planning of the first 4,174 meters, which also included nine (9) *tajeas*.¹¹¹ The very same year, Juana Diaz allocated the amount of \$4,407 for the construction of 2,828 meters towards Coamo.

As the years went by, many other studies and plans were conducted, but little was built. Actual work started in 1864, and still, by 1872, only six (6) kilometers were completed. In 1873, the *Jefatura de Obras Públicas* took over the construction with free laborers and *confinados* as the working force. The project was divided in four sections. One section was 3,907 meters from Río Coamo to Río Minas. The second, from Minas to Río Descalabrado with a length of 6,392 meters. The third track, of 4,138 meters in length from Descalabrado to Río Cañas. The last track was 5,775 meters long from Cañas to Juana Díaz.¹¹² By the time the stretch was finished in 1881, this section had three (3) *pontones*, twenty-six (26) *alcantarillas* and thirty-five (35) *tajeas*.¹¹³

It also had two major bridges, *Puente General Méndez Vigo* and *Puente Obispo Zengotita*. The General Méndez Vigo Bridge, located in PR-14, km. 30.4, is named after General Santiago Méndez Vigo, Spanish governor of Puerto Rico from 1840 to 1844. The structure is the only masonry bridge extant in the southern segment of the **Carretera Central**. The bridge was designed by engineer Timoteo Lubelza

¹¹¹ AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Folio 133. Caja 2145.

¹¹² Ibid. Legajo 49.

¹¹³ Juan E. Castillo, *La Carretera Central*, *Revista de Obras Públicas de Puerto Rico*, Mayo 1930, Año VII, Número 5, 128.

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with a budget of 15,405 pesos and constructed in 1862. During the Spanish - American War of 1898, the bridge's original vault was blown up by elements of the Spanish forces, under the direction of the Spanish Commander Rafael Martínez-Illescas, to cover their retreat to the mountains north of the city of Coamo and to delay the advance of a U.S. Army column approaching from Ponce. The bridge's demolition succeeded in slowing the advance of a battalion of the 2nd Wisconsin Volunteer Regiment. Shortly afterwards, A Company, of the provisional battalion of engineers based in Ponce, started repairs to the bridge. However, further work was carried out in 1898 by the First Regiment of the Fifth battalion of the U.S. Corps of Engineers. This unit of the U.S. Corps of Engineers rebuilt the bridge's vaulted arch using similar construction materials and techniques as those used in the original 1862 construction (**Fig. 39**).

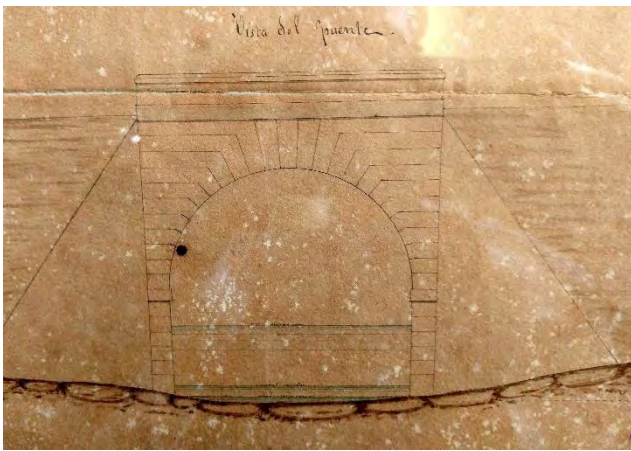


Figure 39. Partial view of Timoteo Lubelza's 1859 drawing for the Puente Méndez Vigo and the 2018 structure.¹¹⁴

The other bridge, *Puente Obispo Zengotita*, located in km. 23.9 in PR-14, spanning over the Descalabrado River, is a wrought iron, single-span lattice girder bridge finished in 1879. The first project for a bridge on this location was done by Timoteo Lubelza in 1859. However, the 1879 bridge resulted from a combined effort between Raimundo Camprubí, responsible for the design of the fabric works, including the ornamental buttresses carved with native marble extracted in Juana Diaz, and José de Echevarría, who designed the metal sections. The metallic structure came from the Belgian iron works *Eugene Rollin & Co* (**Fig. 40**).

¹¹⁴ For Lubelza's drawing see, AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 49, 51,52. Caja 2145.

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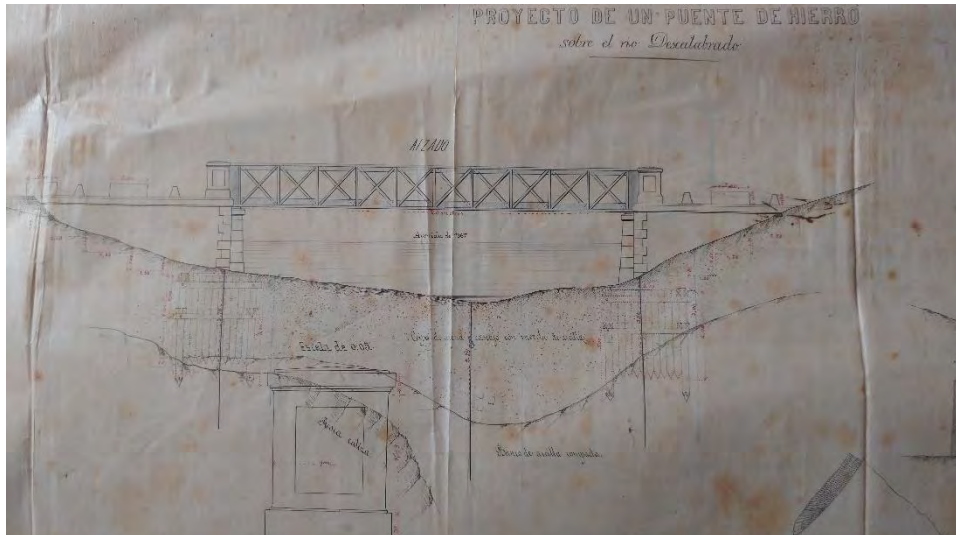


Figure 40. Above, detail of the Raimundo Camprubí's 1874 drawing for the bridge over Río Descalabrado. Below, a partial view of the structure, 2018.¹¹⁵

The bridges are not the only significant structural components that can still be found in the Coamo-Juana Díaz section. There are other structures integral to the road's design and function, built during the 19th century, still conveying the section historic significance (see, Section 7).

¹¹⁵ For Camprubí's drawing, see AGPR. Fondo: Obras Públicas. Serie: Carreteras y puentes. Legajo 49, 51,52. Caja 2145.

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Along the regular elements and structures that are immediately adjacent to the road and enhance its function, use or safety, just like in the other sections, the most important component in the right-of-way in this section are the three *casillas de camineros* shown below (Fig. 41)



Figure 41. The first *casilla* above (left to right) is located in Coamo on PR-14, km. 27.8. Built around 1880, is currently a private residence. The other two abandoned *casillas* are located in Juana Diaz.

The Coamo-Juana Diaz section has a superb integrity in many of its components. The integrity of the many extant components on the road, right-of-way and setting, allows the section to convey its historic significance. Additionally, the site around *Puente Méndez Vigo* has a historic layer of great significance that goes beyond its engineering qualities, as it is associated with the Spanish American War of 1898. **As such, the twenty-six kilometers between Coamo and Juana Díaz, with all the extant resources on the road, the right-of-way and the setting are identified and designated as a contributing section to the Carretera Central’s historic significance.**

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Juana Diaz-Ponce section

The stretch of the **Carretera Central** from Juana Díaz to Ponce has a length of slightly over twelve (12.4) kilometers. The construction of the road was a local enterprise accomplished mostly by the combined effort of both municipalities. A local road (*camino de herradura*) existed between the two cities since the early 19th century. The poor quality of the road was a constant problem, as the stretch was practically inaccessible during rainy season. Although the topography between the two towns is mostly flat, the road crossed over five river courses: Jacaguas, Guayo, Inabón, Bucaná and Portugués.

In 1860, both towns requested the assistance of the central government to complete the undertaking. Engineer Niceto Blajot was assigned to work on a general plan for the entire section, including the re-routing of the existent road. However, the engineer indicated that there was no need to change to travel-way, but to improve the existing one.¹¹⁶

During the following years, improvements were made on the road's pavement, grading and size. However, it remained a municipal road (Second-Class), developed by Ponce and Juana Diaz, both mostly using "*prestación personal*" (compulsory community work) to acquire the needed funds and labor. It wasn't until 1880, that the section came under the jurisdiction of the *Jefatura de Obras Públicas*, becoming an official section of the **Carretera Central**. Immediately, the *Jefatura* assigned different engineers (Mariano Sichar, Rafael Ravena) to work in the improvements in bringing it to the standards of a First-Class road, and building three *casillas de camineros* along the route.

The construction of the bridges over the mentioned rivers was probably the most demanding undertaking faced in this section of the **Carretera Central**. By the time the entire **Central** was officially open in 1886, the bridges over those water courses were wooden, provisional structures. It wasn't until the twentieth century that the bridges were built in solid materials: wrought iron and concrete bridge over Jacaguas in 1899, an iron bridge over Río Guayo in 1903, and reinforced concrete bridges for Inabón (1913), Bucaná (1914) and Portugués (1918). For the final stretch, Ponce to Ponce Playa, a wooden bridge was built in 1895 by the private firm *Ponce Railway Light*. In 1933, this last bridge was replaced by a reinforced concrete vehicular and pedestrian structure supported by steel longitudinal beams.

¹¹⁶ Juan E. Castillo, *La Carretera Central*, *Revista de Obras Públicas de Puerto Rico*, Junio 1930, Año VII, Número 6, 143.

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The last bridge mentioned, known as Puente Playa Ponce, it is actually the only extant bridge from the early 20th century. In the 1980's, the Ponce's section of the PR-14 towards Juana Díaz was widened to make it a four-lane road. In the process most of the original culverts (*alcantarillas*) were destroyed. Just like the culverts and the road itself, all the early twentieth century bridges in Ponce's PR-14 were also destroyed, with the exception of the 1933 *Puente Playa Ponce*. The destruction of resources directly associated with the **Central** in the 1980s, was mostly done in the section under Ponce's jurisdiction. Only two extant *casillas* still at Ponce's old **Carretera Central**, one of them beyond recognition (see Section 7). (**Fig. 42**).¹¹⁷ Due to the irreplaceable loss of resources on the road, the right-of-way, and the setting, the entire PR-14 (10 kilometers in length) comprise under Ponce's jurisdiction do not contribute to the historic significance of the **Carretera Central**. **However, the two (2.4) kilometers remaining of the Juana Diaz-Ponce 12.4 kilometers section, starting at PR-14, Km. 10, comprise within Juana Díaz's jurisdiction, retain the original footprint and many contributing components within the road itself, the right-of-way and the setting. These twenty-four hundred meters are a contributing tract to the Carretera Central's historic significancel.**

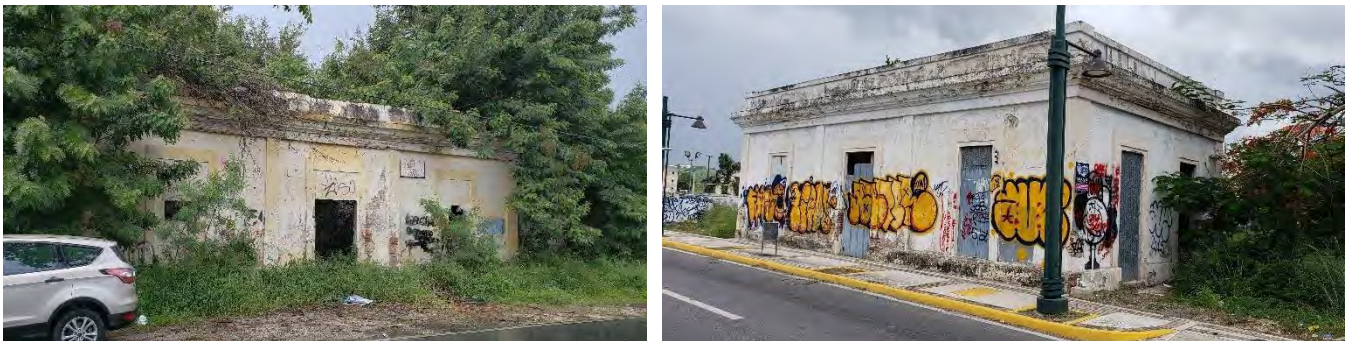


Figure 42. The last two identifiable *casillas de camineros* in the Juana Díaz – Ponce section of the **Carretera Central**. The casilla on the left is located on PR-14, km. 10.3 in Juana Díaz. Built in 1886, the abandoned building was used by DTOP until the 1950s. Later was used as a warehouse for an agricultural firm and later became the well-known brothel *El Reloj*. The other *casilla* is located on PR-14, km 3.5, in the municipality of Ponce. Built in 1886, currently abandoned, the building was used by DTOP well into the 1980s. The first casilla is within the contributing section of PR-14 under Juana Diaz's jurisdiction. The one on the right, however, falls within the PR-14 section in Ponce identified as a noncontributing tract.

¹¹⁷ Luis Pumarada O'Neill y María de los Ángeles Castro Arroyo. *La Carretera Central: un viaje escénico a la historia de Puerto Rico*, 55.

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Summary of contributing resources

Based on the research of primary and secondary sources, along with a survey and documentation of the one hundred and thirty-four (134) kilometers that comprise the old **Carretera Central** (today's PR-25, PR-1, PR-14, PR-735) it was concluded that eighty-one kilometers, with one hectometer (81.1 km.) retain a substantial amount of resources in its travel-way, right-of-way and setting, allowing this stretch to be able to transmit its historical significance and convey its association with the old **Carretera Central** (**Fig. 43**). The contributing section (81.1 km) is a continuous stretch comprise in PR-1, PR-735 and PR-14. In PR-1 the contributing section starts at kilometer 40 in Caguas and ends at kilometer 55.4 in Cayey, connecting with PR-14 at the last point. Under Cayey's jurisdiction, there is PR-735, with an additional 2.7 kilometers of contributing tract. In PR-14, the contributing section runs from kilometer 10.0 in Juana Diaz and ends at kilometer 74.0 in Cayey. Altogether, the length of the linear district, 81.1 kilometers, represents over sixty (60.5%) percent of the entire length of the old road.

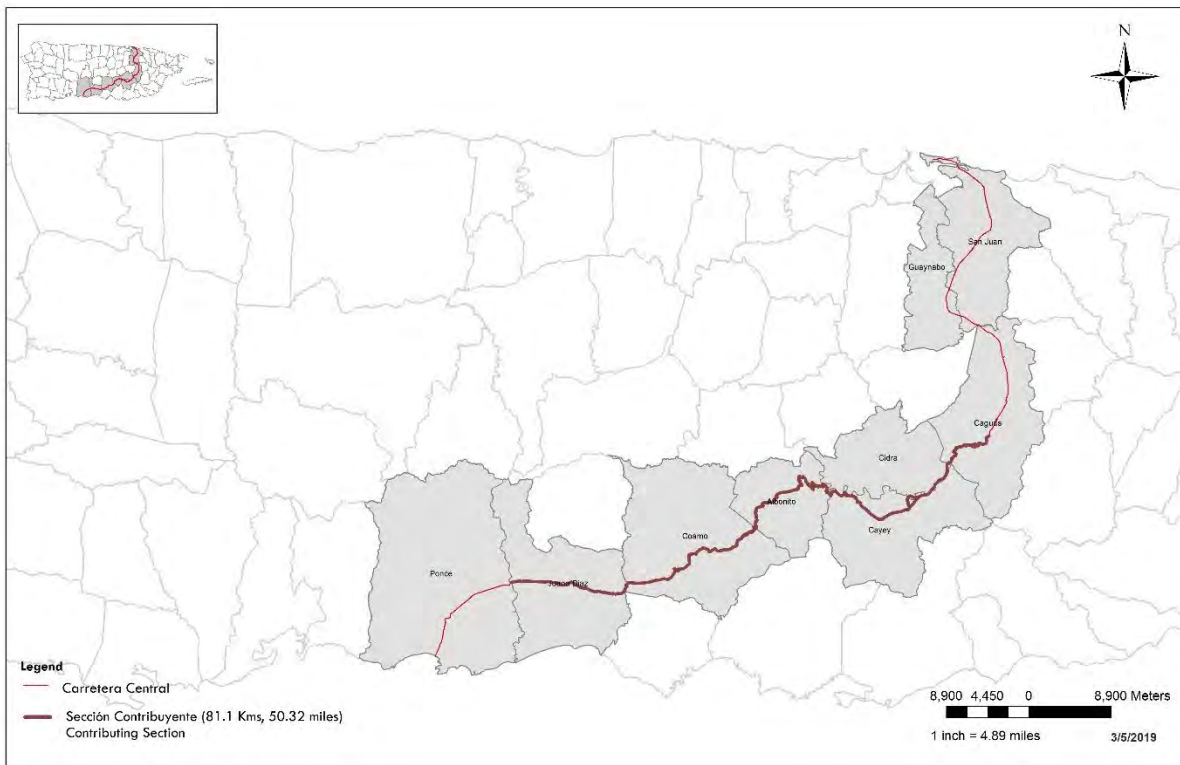


Figure 43. Map showing the 81.1 kilometers designated as the contributing section that best represent and support the historic significance of the **Carretera Central**. The loop in Cayey's jurisdiction, corresponds to P-735's 2.7 kilometers. (Map prepared by Eduardo Cancio González, Information System Specialist, PRSHPO, 2019)

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This linear district includes the road itself and all its structural components on its travel-way, right-of-way (roadside) and setting that are directly associated with the road’s functionality. Among these components are bridges, *casillas de camineros*, *alcantarillas*, historic safety rails or posts, retaining walls and one historic lookout. Mentioned below are the bridges identified as contributing resources (see **Table 7**) and a map with all the significant bridges in the **Carretera Central (Fig. 44)**.

Table 7. Bridges in the **Carretera Central** identified as contributing resources within the nominated 81.1 kilometers. List does not include the eleven (11) bridges already in the National Register of Historic Places along the **Carretera Central**.

BRIDGE	LOCATION	CONSTRUCTION DATE
Las Quebradillas (#11)	Caguas, PR-1, Km. 41.3	1881
Santo Domingo (#180)	Cayey, PR-14, Km. 70.4	1881
Quebrada Toita (#178)	Cayey, PR-14, Km. 65.5	1892
Quebrada Honda (#176)	Aibonito, PR-14, Km. 57.2	1892
Obispo Zengotita (#172)	Coamo, PR-14, Km. 23.9	1879

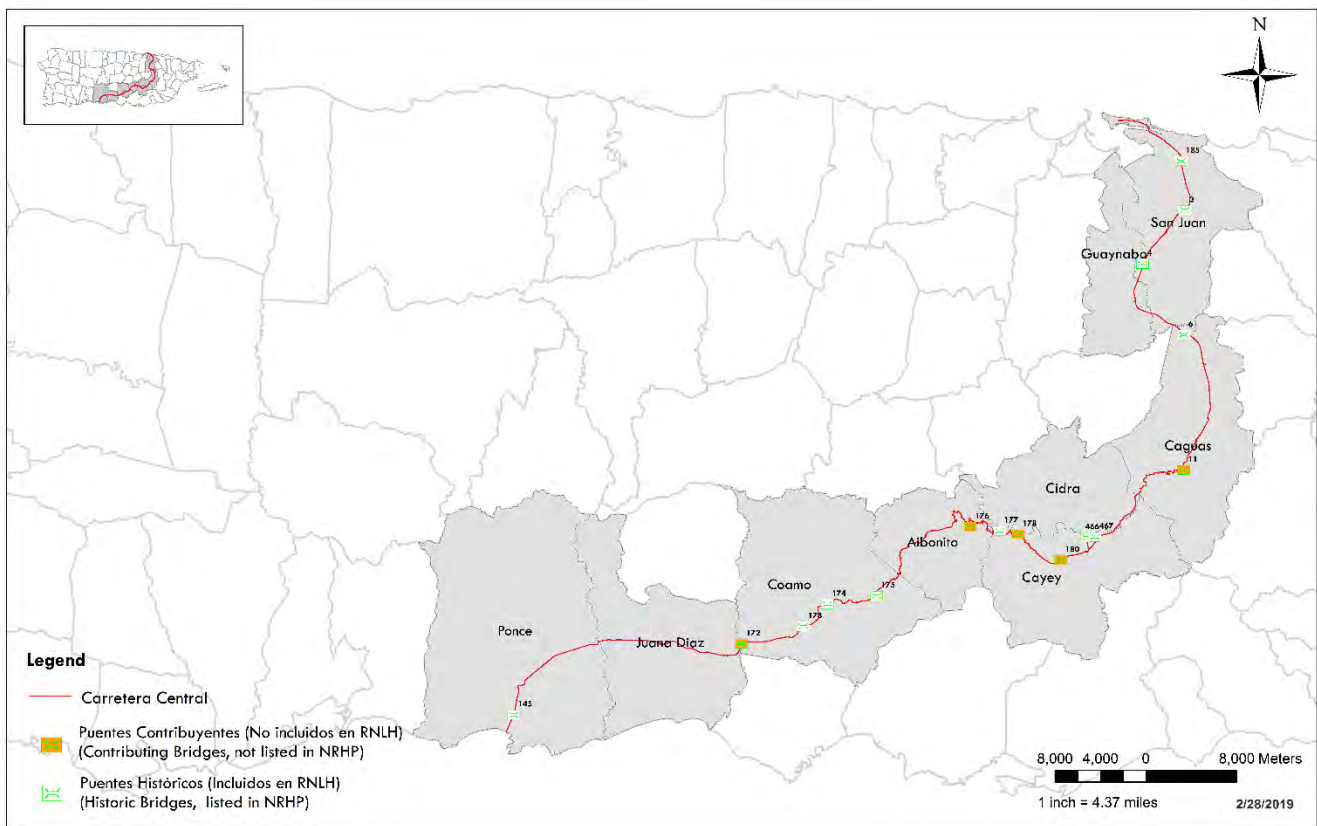


Figure 44. Map showing the bridges identified as contributing resources and those already included in the National Register of Historic Places. (Map prepared by Eduardo Cancio González, Information System Specialist, PRSHPO, 2019)

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Also included as contributing resources are fourteen (14) *casillas de camineros* located in the right-of-way within the identified 81.1 kilometers (**Table 8** and **Fig. 45**)

Table 8. The fourteen (14) *Casillas de Camineros* identified as contributing resources within the nominated 81.1 kilometers. The number assigned to each *casilla* correspond to the *casillas'* site map below.

CASILLA	LOCATION	MUNICIPALITY
Casilla #2	PR-1, Km. 40.9	Caguas
Casilla #3	PR-1, Km. 47	Caguas
Casilla #4	PR-14, Km. 70.8	Cayey
Casilla #5	PR-14, km. 64.3	Cayey
Casilla #6	PR-14, Km. 59.9	Aibonito
Casilla #7	PR-14, Km. 57.7	Aibonito
Casilla #8	PR-14, Km. 51.7	Aibonito
Casilla #9	PR-14, Km. 45.9	Aibonito
Casilla #10	PR-14, Km. 40.5	Coamo
Casilla #11	PR-14, Km. 34.3	Coamo
Casilla #12	PR-14, Km. 27.8	Coamo
Casilla #13	PR-14, Km. 21.8	Juana Díaz
Casilla #14	PR-14, Km. 16.4	Juana Díaz
Casilla #15	PR-14, Km. 10.3	Juana Díaz

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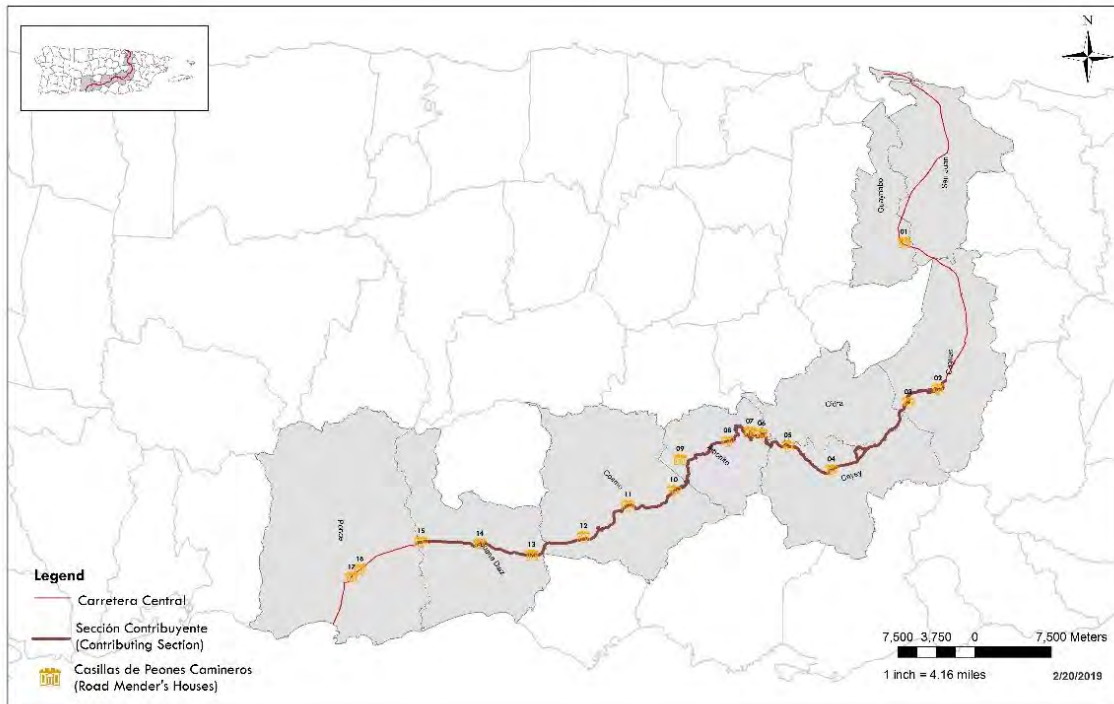


Figure 45. Map showing the location of the 14 contributing *casillas de camineros*.

The stretch of the **Carretera Central** comprised between Aibonito and Coamo should receive special acknowledgment, not only as a contributing section in a historic road, but also as a statewide significant site under Criterion A on itself. Within these ten (10.5) kilometers, Spanish and American soldiers made the ultimate sacrifice in the last two military encounters of the Spanish American War of 1898 in the island.

Included as well are all the bricks and stones 19th century *pontones*, *tajeas*, and *tajoas* (*alcantarillas*), including those with mixed construction combining 19th century ashlar work, bricks and stones with early twentieth century concrete expansions. Selected examples of these resources, by municipality, were presented in Section 7 (**Fig. 46**). However, the examples represent just a fraction of such resources identified through a survey conducted by PRSHPO staff.¹¹⁸ In total, fifty-seven (57) 19th century *alcantarillas* (*pontones*, *tajeas* and *tajoas*); three (3) 19th century retaining walls; five (5) 19th century bridges (not counting the 11 bridges already listed in the NRHP); one (1) early 20th century

¹¹⁸ The PRSHPO staff that conducted the survey was Architect Santiago Gala, Senior Historic Property Specialist, Eduardo Cancio Gonzalez, Information System Specialist and Juan Llanes Santos, Historian. A photographic summary of the conducted survey is annexed with this nomination document. This additional documentation was placed on Disk #2, along with the selected photos.

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lookout and seventeen (17) 19th century *casillas de camineros* (14 contributing), were surveyed as part of this nomination effort. Other components developed to provide a functional service to the road, like the safety barriers, were copiously found and documented along the entire 82.1 km. contributing section.

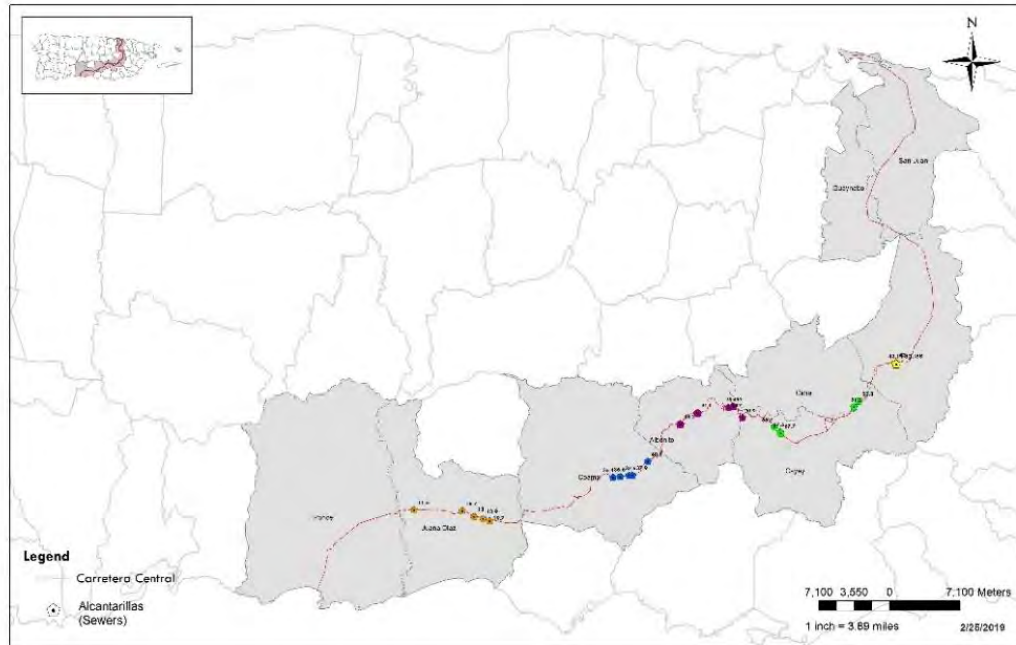


Figure 46. Map showing location of selected *pontones* and *alcantarillas*.

Across the island, just like in the United States, historic roads are being lost through demolition, neglect and poor management. Sometimes this loss is due to policy, sometimes external pressures and many times, simply ignorance. These losses can be swift and devastating or slow and incremental, hardly noticed until it is too late.

On those lines, the nominated 81.1 kilometers of the old **Carretera Central** represent a marvelous example of what was once described by many as the best road of the Western Hemisphere. A travel through its route represents a travel through the island's history. The road was thought-out as part of a large military scheme. It became the site of the last military encounters of the Spanish American War, a conflict that re-routed Puerto Rico's history. The road was the product of a massive social effort that involved thousands of free and coerced workers for over forty years in a backbreaking, but unique undertaking.

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The **Carretera Central** was an engineered route designed for the efficient movement of people, goods and services. However, the quality of its craftsmanship, evident in all of the extant bridges, *casillas de camineros*, *alcantarillas*, safety features, retaining walls, among others, speak of a purposely intention to create not only a pragmatic route, but also an aesthetic route designed to provide a very specific traveler experience. The careful and aesthetic design of structures develop not to be seen reflects upon their brilliant designers.

The **Carretera Central** was an engineering and an artistic feast. Most definitely, it was the most significant work of engineer in the 19th century. The nominated section represents the best of such significant property.

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Carretera Central

Puerto Rico

Name of Property

County and State

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Carretera Central
Name of Property

Puerto Rico
County and State

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Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67 has been requested)
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____
- recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other (Name of repository) _____

Historic Resources Survey Number (if assigned): _____

10. Geographical Data

Acres of property _____ USGS Quadrangle _____

(Use either the UTM system or latitude/longitude coordinates. Delete the other.)

Datum if other than WGS84: _____

- 1. Latitude _____
- 2. Latitude _____
- 3. Latitude _____
- 4. Latitude _____

OR

UTM References

Datum (indicated on USGS map): _____

NAD 1927 or NAD 1983

Carretera Central

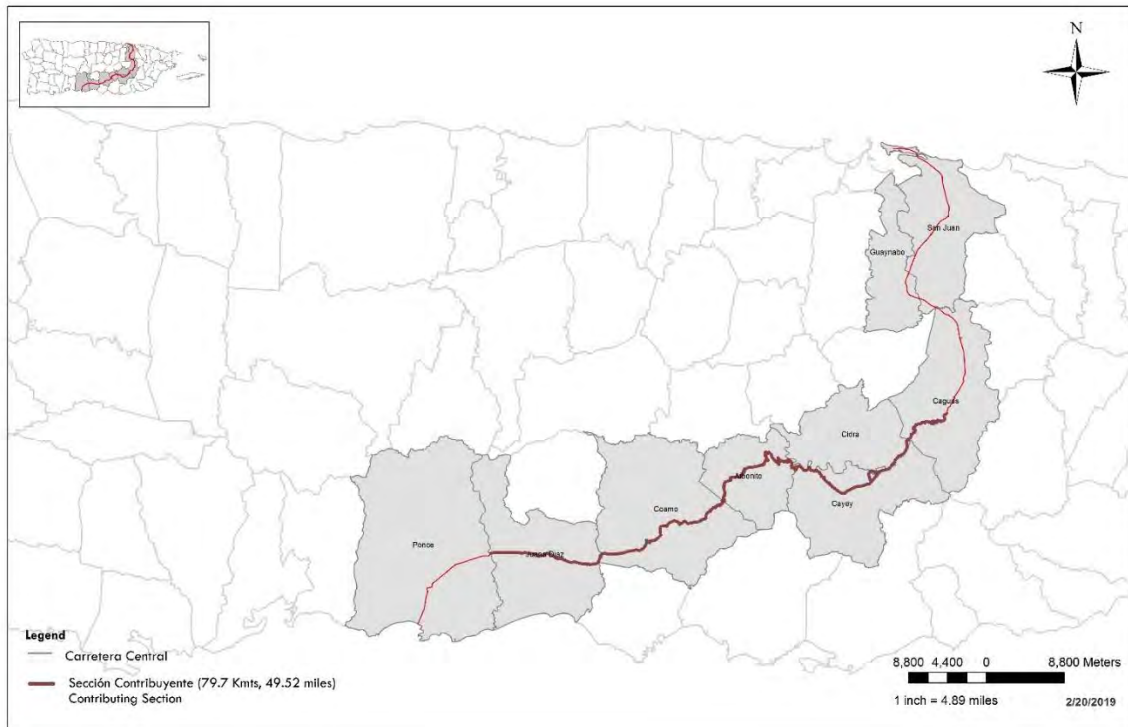
Puerto Rico

Name of Property

County and State

1.	Zone	<u>19Q</u>	Easting	<u>811558</u>	Northing	<u>2014280</u>
2.	Zone	<u>19Q</u>	Easting	<u>760121</u>	Northing	<u>1997687</u>
3.	Zone	<u> </u>	Easting	<u> </u>	Northing	<u> </u>
4.	Zone	<u> </u>	Easting	<u> </u>	Northing	<u> </u>

Due to the length of the nominated property, the difficult topography that traverses and the numerous displacements on its verticality (ups and downs) and horizontality (left and right movements), only two UTM references are provided. UTM #1, correspond to the northern starting point (PR-1, Km. 40) of the contributing 81.1 kilometers in the municipality of Caguas. UTM #2, correspond to the southern point (PR-14, Km. 10) in the municipality of Juana Díaz (see map below).



Verbal Boundary Description (Describe the boundaries of the property.)

The **Carretera Central** is a continuous linear district of eighty-two kilometers, with one hectometer (81.1 km) in length that span along three state roads: PR-1, PR-14 and PR-735, traversing five municipalities: Caguas, Cayey, Aibonito, Coamo and Juana Díaz. In PR-1 the contributing section starts at kilometer 40 in Caguas and ends at kilometer 55.4 in Cayey, connecting with PR-14 at this last point. In PR-14, the contributing section runs from kilometer 10.0 in Juana Díaz and ends at kilometer 74.0 in Cayey. PR-735 is a tract comprised of 2.7 kilometers, from kilometer 0.0 to kilometer 2.7. PR-735 is in Cayey’s jurisdiction and it was part of the **Carretera Central** original footprint.

Boundary Justification (Explain why the boundaries were selected.)

The above boundaries were selected because out of the total length of the road (134.7 km.), the designated 81.1 kilometers contain the largest number of resources associated to the old road. This designated section has the ability to transmit the historic significance of the **Carretera Central**.

Carretera Central
Name of Property

Puerto Rico
County and State

11. Form Prepared By

name/title Juan Llanes Santos, Historian
 organization PRSHPO date March 5, 2019
 street & number PO Box 9023935 telephone 787-721-3737
 city or town San Juan state PR zip code 00902-3935
 email jllanes@prshpo.pr.gov

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to map.
- **Additional items:** (Check with the SHPO for any additional items.)

Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Photo Log

Name of Property Carretera Central
Caguas/Cayey/Aibonito/Coamo/Juana
 City or Vicinity Díaz County _____ State Puerto Rico
 Photographer Juan Llanes Santos Date Photographed September 2018-March 2019

Description of Photograph(s) and number, include description of view indicating direction of camera.

1. Pontón in PR-14, Km. 40.3 in Coamo, looking northwest, 0001.
2. Pontón Gómez, PR-14, Km 61.9 Aibonito, looking southwest, 0002.
3. Alcantarilla, PR-14, Km. 42.8, Aibonito, looking southwest, 0003.
4. Pontón, PR-14, Km. 19.7, Juana Díaz, looking northwest, 0004.
5. Alcantarilla, PR-14, Km. 50.8, Cayey, looking south, 0005.
6. Alcantarilla, PR-14, Km. 66.7, Cayey, looking southeast, 0006.
7. Alcantarilla, PR-1, Km. 41.6, Caguas, looking northwest, 0007.
8. Puente Santo Domingo, PR-14, Km. 69, looking north, 0008.
9. Casilla de peones camineros, PR-14, Km. 60.1, Aibonito, looking northeast, 0009.
10. View of Carretera Central, PR-14, Km. 57.3, Aibonito, looking southwest, 0010.
11. View of Carretera Central, PR-14, Km. 60.5, Aibonito, looking northwest, 0011.
12. Casilla de peones camineros, PR-14, Km. 21.8, Juana Díaz, looking northwest, 0012.
13. Casilla de peones camineros, PR-14, Km. 27.8, Coamo, looking south, 0013.
14. Casilla de peones camineros, PR-14, km. 40.5, Coamo, looking northeast, 0014.

Carretera Central

Puerto Rico

Name of Property

County and State

15. Casilla de peones camineros, PR-14, Km. 51.7, Aibonito, looking north, 0015.
16. Alcantarilla, PR-14, km. 54.3, Aibonito, looking south, 0016.
17. Alcantarilla, PR-14, Km. 58.7, Aibonito, looking northwest, 0017.
18. Mirador (lookout), PR-14, Km. 57.8, looking north, 0018.
19. Puente Las Calabazas, PR-14, Km. 38.8, Coamo, looking northwest, 0019.
20. Puente Quebrada Honda, PR-14, km. 57.2, Aibonito, looking northeast, 0020.

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.































1885

CENTRO
CULTURAL
DE BACOLOMO
Lugar: Angeles R. Ortiz

CARPENTER











Pinchos
Fritos

National Register of Historic Places
Memo to File

Correspondence

The Correspondence consists of communications from (and possibly to) the nominating authority, notes from the staff of the National Register of Historic Places, and/or other material the National Register of Historic Places received associated with the property.

Correspondence may also include information from other sources, drafts of the nomination, letters of support or objection, memorandums, and ephemera which document the efforts to recognize the property.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

Requested Action: Nomination

Property Name: Carretera Central

Multiple Name: _____

State & County: PUERTO RICO, Caguas

Date Received: 3/22/2019 Date of Pending List: 4/5/2019 Date of 16th Day: 4/22/2019 Date of 45th Day: 5/6/2019 Date of Weekly List: _____

Reference number: SG100003686

Nominator: SHPO

Reason For Review:

- | | | |
|---------------------------------------|--|--|
| <input type="checkbox"/> Appeal | <input type="checkbox"/> PDIL | <input type="checkbox"/> Text/Data Issue |
| <input type="checkbox"/> SHPO Request | <input type="checkbox"/> Landscape | <input type="checkbox"/> Photo |
| <input type="checkbox"/> Waiver | <input type="checkbox"/> National | <input checked="" type="checkbox"/> Map/Boundary |
| <input type="checkbox"/> Resubmission | <input type="checkbox"/> Mobile Resource | <input type="checkbox"/> Period |
| <input type="checkbox"/> Other | <input type="checkbox"/> TCP | <input type="checkbox"/> Less than 50 years |
| | <input type="checkbox"/> CLG | |

Accept Return Reject 5/2/2019 Date

Abstract/Summary Comments: The central road, linking San Juan and Ponce, is an engineering marvel - traversing mountains and valleys and constructed primarily by hand with little equipment. Also remarkable are the extant resources, including the road supervisor houses, the 19th century iron bridges and the masonry culverts. The roadbed itself has not had its course altered in significant ways. The highway served an important military purpose as well as a central economic purpose. The last action of the Spanish American War in Puerto Rico took place along the road.

Recommendation/ Criteria: Accept / A & C

Reviewer Jim Gabbert Discipline Historian

Telephone (202)354-2275 Date _____

DOCUMENTATION: see attached comments : No see attached SLR : Yes

If a nomination is returned to the nomination authority, the nomination is no longer under consideration by the National Park Service.



GOBIERNO DE PUERTO RICO
Oficina Estatal de Conservación Histórica
State Historic Preservation Office



Tuesday, March 5, 2019

Joy Beasley

Keeper of the National Register of Historic Places
National Register of Historic Places
1849 C Street NW (Mail Stop 7228)
Washington, DC 20005

SUBMISSION - NOMINATION CARRETERA CENTRAL

Dear Ms. Beasley:

The enclosed disks contain the true and correct copies of the nomination *Carretera Central*, for the National Register of Historic Places.

Should you have any questions on this nomination, please contact Juan Llanes Santos, Historic Property Specialist, at 787-721-3737, ext. 2009 or jllanes@prshpo.pr.gov

Sincerely,

Carlos A. Rubio-Cancela
State Historic Preservation Officer

CARC/GMO/JLS

Enclosures

Registro Nacional de Lugares Históricos
Nominación de la Carretera Central de Puerto Rico
Reconocimiento General e Inventario Fotográfico de Recursos Contribuyentes



Febrero de 2019



Reconocimiento e Inventario: Juan Llanes Santos, Especialista en Propiedad Histórica.

Santiago Gala Aguilera, Especialista en Propiedad Histórica Senior.

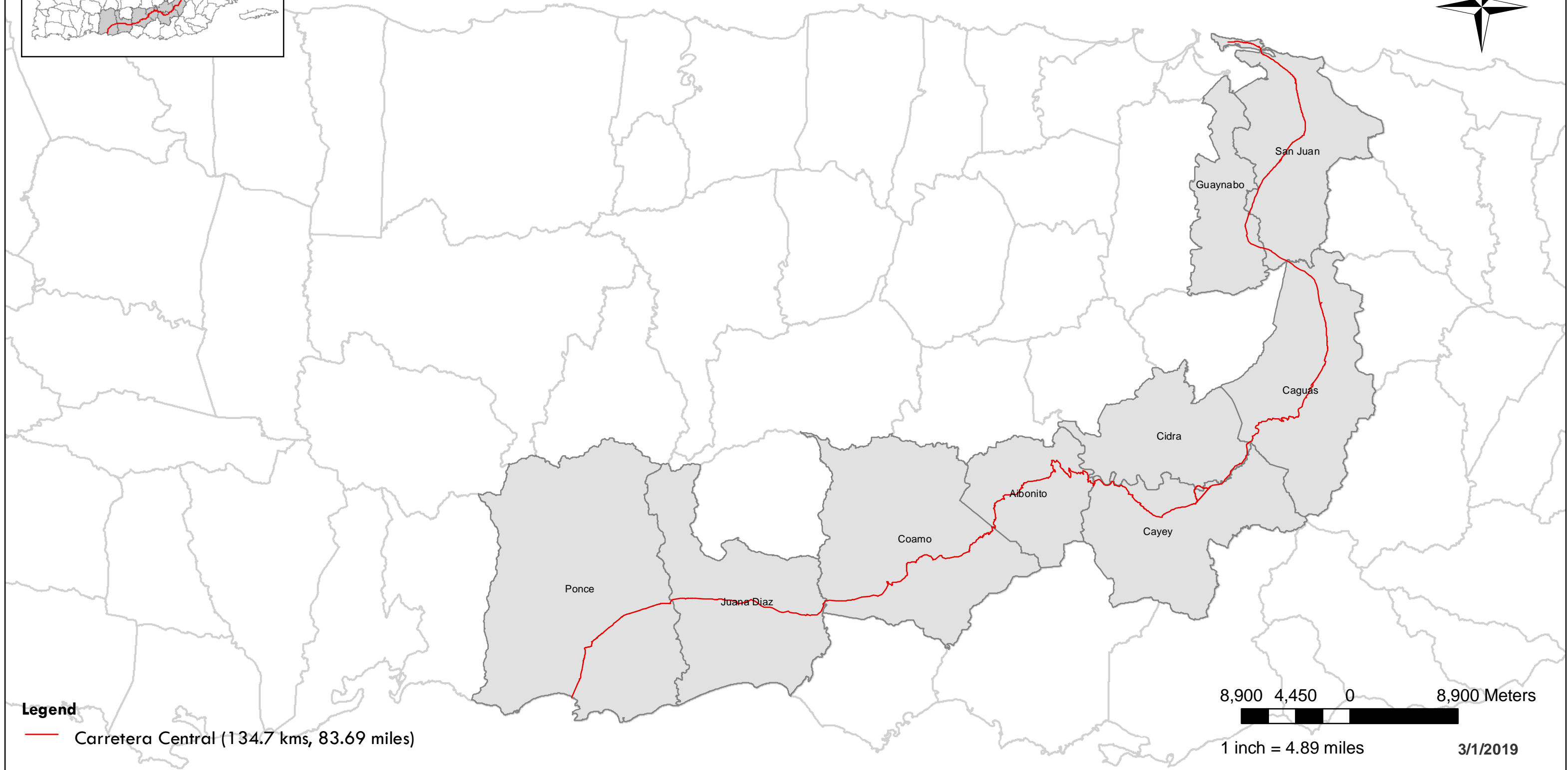
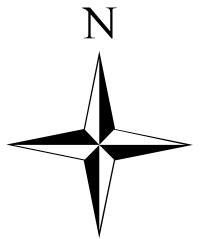
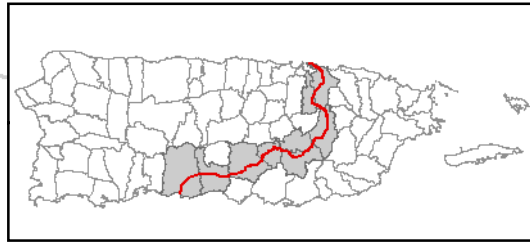
Eduardo Cancio González, Especialista en Sistemas de Informática.

Mapas, composición fotográfica y análisis GIS: Eduardo Cancio González.

Carretera Central de Puerto Rico

Mapa/Map 1 - Ruta/Route

Mapa/Map 2 - Sección contribuyente/Contributing section



Legend
 — Carretera Central (134.7 kms, 83.69 miles)

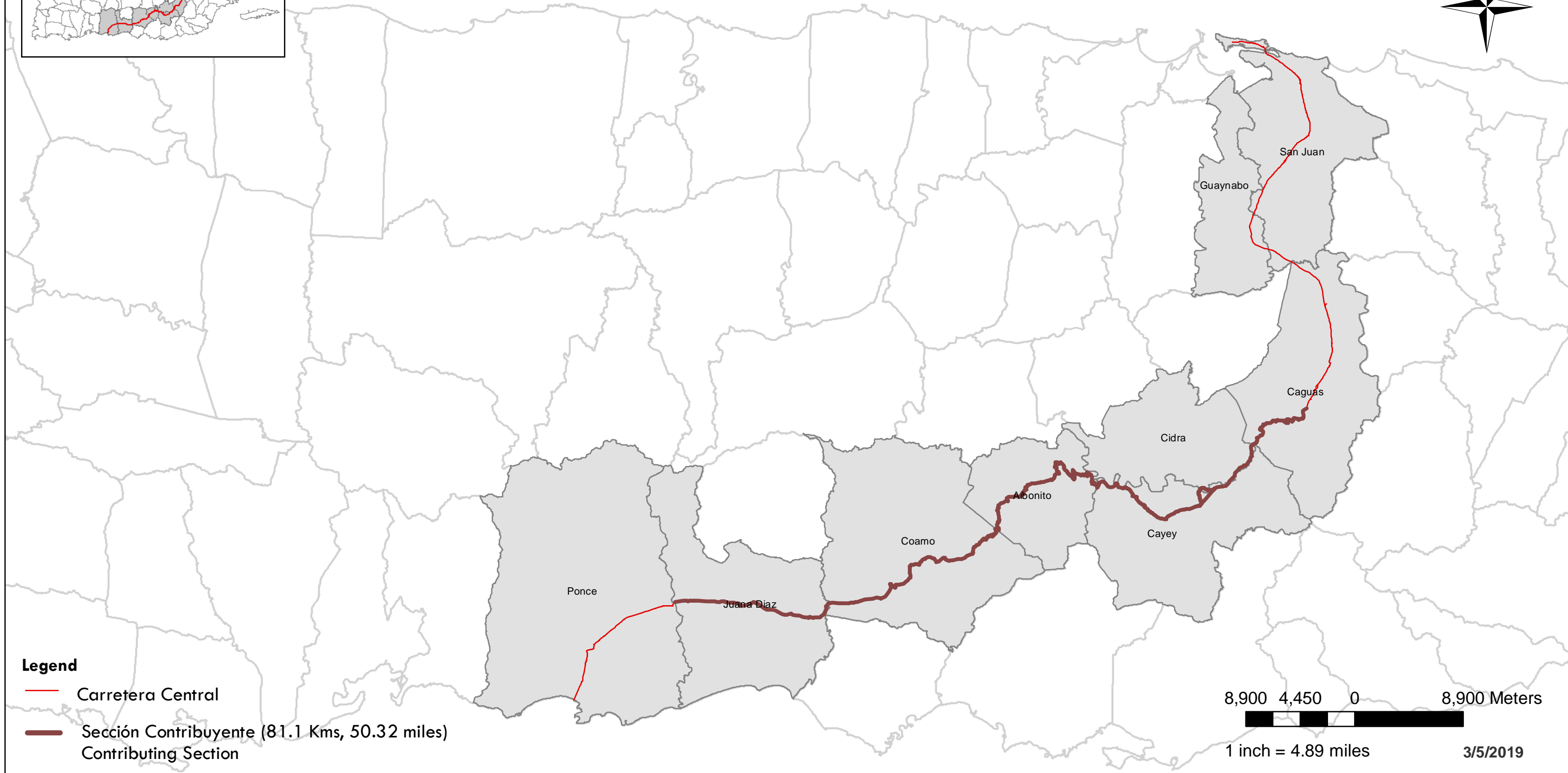
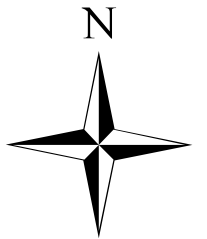
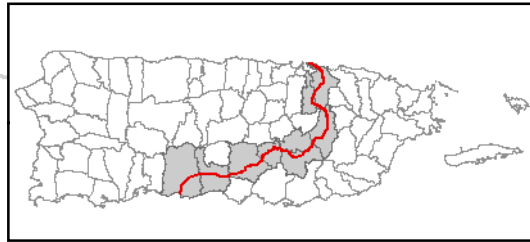
8,900 4,450 0 8,900 Meters
 1 inch = 4.89 miles 3/1/2019



Registro Nacional de Lugares Históricos

Nominación de la Carretera Central de Puerto Rico





Registro Nacional de Lugares Históricos

Nominación de la Carretera Central de Puerto Rico

Mapa de Sección Contribuyente



Carretera Central de Puerto Rico

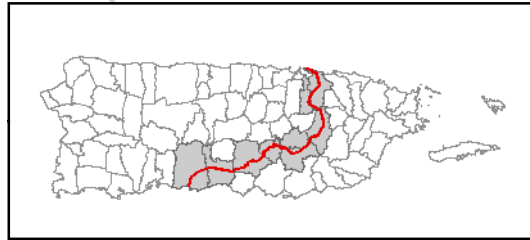
Mapa/Map 3 – Localizaciones de puentes contribuyentes

/Locations of contributing bridges

Mapa/Map 4 – Localizaciones de puentes contribuyentes y puentes incluidos en el RNLH

/Locations of contributing and NRHP listed bridges

Imágenes por recurso/*Images by resource*






**Puentes Contribuyentes
(Contributing Bridges)**

Número	Municipio	Cuerpo de agua	Carretera	Km
11	Caguas	QUEBRADILLA CREEK	PR 1	40.9
180	Cayey	SANTO DOMINGO CREEK	PR 14	20.35
178	Cayey	TOITA CREEK	PR 14	65.57
176	Aibonito	HONDA CREEK	PR 14	57.2
172	Coamo	DESCALABRADO RIVER	PR 14	23.85



Legend

-  Carretera Central
-  Sección Contribuyente
(Contributing Section)
-  Puentes Contribuyentes
(Contributing Bridges)

8,000 4,000 0 8,000 Meters
 1 inch = 4.37 miles
 2/28/2019

**Registro Nacional de Lugares Históricos
 Nominación de la Carretera Central de Puerto Rico
 Mapa de Puentes Contribuyentes**





Puentes Contribuyentes (No incluidos en RNLH)
(Contributing Bridges, not listed in NRHP)





Número	Municipio	Nombre	Carretera	Km
11	Caguas	Las Quebradillas	PR 1	40.9
180	Cayey	Santo Domingo	PR 14	20.35
178	Cayey	Quebrada Toita	PR 14	65.57
176	Aibonito	Quebrada Honda	PR 14	57.2
172	Coamo	Obispo Zengotita	PR 14	23.85

Puentes Históricos (Incluidos en RNLH)
(Historic Bridges, listed in NRHP)

Número	Municipio	Nombre/NRHP Listed Number	Carretera	Km
3	San Juan	Río Piedras / 95000832	PR-8839	0
4	San Juan	General Norzagaray / 95000833	PR 873	0.8
6	Caguas	La Concepción / 950000	PR 798	1
145	Ponce	Río Portugués / 14001134	PR 123	2.9
173	Coamo	General Méndez Vigo / 9500083	PR 14	30.4
174	Coamo	Padre Iñigo / 95000840	PR 14	34.2
175	Coamo	De las Calabazas / 09000042	PR 14	39.27
177	Cayey	Río Matón / 95000841	PR 14	63.2
185	San Juan	Martin Peña / 08000856	PR 25	8
466	Cayey	De Arenas / 95000843	PR 735	1.5
467	Cayey	La Liendre / 95000844	PR 735	0.7



Legend

-  Carretera Central
-  Sección Contribuyente (Contributing Section)
-  Puentes Contribuyentes (No incluidos en RNLH) (Contributing Bridges, not listed in NRHP)
-  Puentes Históricos (Incluidos en RNLH) (Historic Bridges, listed in NRHP)

8,000 4,000 0 8,000 Meters

1 inch = 4.37 miles

3/5/2019







Registro Nacional de Lugares Históricos

Nominación de la Carretera Central de Puerto Rico

Mapa de Puentes



Estructuras históricas de la Carretera Central. Puentes contribuyentes

Municipio	Recurso	Número	Imágenes	
Caguas	Puente Las Quebradillas	# 11		
Cayey	Puente Quebrada Toíta	# 178		

Puente Santo Domingo

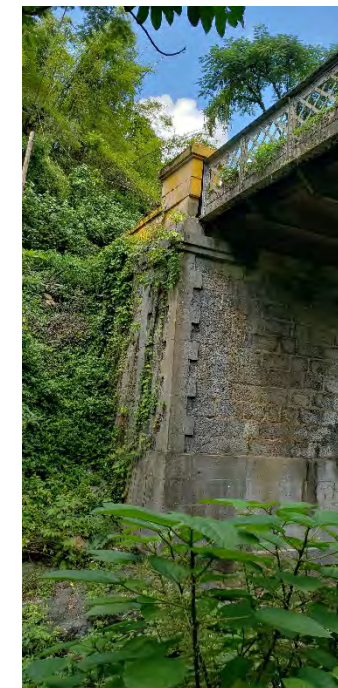
180



Aibonito

Puente de Quebrada Honda

#176



Coamo

Puente Obispo Zengotita

#172



Puente de Río Piedras



San Juan



Puente Núm. 3
PR-8839, Km. 12.5

Año de Construcción: 1853
Propiedad: Pública
Uso Histórico: Puente
Uso Actual: Puente
Criterio(s) de Evaluación: A / C

El puente de Río Piedras es el más antiguo entre los pertenecientes a la Carretera Central que sobreviven. Construido para la antigua carretera de San Juan a Caguas, se mantiene en buenas condiciones y con un mínimo de alteraciones. Continúa en uso junto a la entrada de la Estación Experimental de Río Piedras, como parte de la carretera denominada PR-8839.

La estructura es simétrica, con el arco central más grande que los dos laterales. Las pilastras de ladrillo tienen tajamares con cornisamentos cónicos y las caras muestran una cornisa de coronamiento. Los parapetos en ladrillo son continuos y redondeados. Se puede apreciar sus elegantes líneas desde el puente moderno de la carretera núm. 1, que le corre paralelo.

Puente General Norzagaray



San Juan



Puente Núm. 4, Puente de los Frailes
PR-873, Km. 0.8
Barrio Tortugo / Monacillos

Ingeniero: Manuel Sánchez Núñez
Contratista: Gustavo Steinacher
Año de Construcción: 1854
Propiedad: Pública
Uso Histórico: Puente
Uso Actual: Puente
Criterio(s) de Evaluación: A / C

Este puente-viaducto, de ocho grandes arcos de ladrillo, cruza la quebrada Los Frailes en el kilómetro 0.8 de la carretera estatal 873. Los arcos del puente, algunos llegan a los 20 pies de altura, son los más impresionantes que sobreviven del periodo colonial español en Puerto Rico. Diseñado por el ingeniero-jefe Manuel Sánchez Núñez y Layne, su construcción lo ejecutó Gustavo Steinacher, un prominente ingeniero del siglo XIX, por la suma de 45,346 pesos. El puente se construyó originalmente, como parte de la carretera entre San Juan-Caguas y luego fue incorporado como un tramo de la Carretera Central.

Su construcción se inició en junio de 1854 y concluyó en mayo de 1855. El puente fue nombrado en honor de Fernando de Norzagaray y Escudero, quien fue entre 1852 y 1855, Capitán-General y Gobernador de Puerto Rico. Debido al debilitamiento de sus arcos, en 1927 se reconstruyó el interior de la superestructura utilizando vigas de acero y losas de hormigón apoyadas sobre las pilastras para liberar de peso a los arcos. Esta intervención se hizo respetando los muros frontales originales en mampostería y la forma general del puente, pero alteró sus caras con los soportes de hormigón que sobresalen, uno sobre cada pilastra, y con las vigas de amarre metálicas de los tensores que se pusieron uniéndolo a los muros frontales opuestos.

Las pilastras más altas, a ambos lados del arco bajo el cual discurre la quebrada, tienen tajamares. Algunas otras han sido reforzadas en este siglo con contrafuertes en hormigón. Los arcos e impostas en ladrillo resaltan del muro frontal en mampostería. Un parapeto de ladrillo se levanta sobre la cornisa de coronamiento.

El Puente General Norzagaray fue incluido en el Registro Nacional de Lugares Históricos el 19 de julio de 1995.

Puente #6



Caguas

Bridge #6
Pontón La Concepción
Carretera 798, km. 1.0

Ingeniero: Desconocido
Constructor: Desconocido
Año de Construcción: 1856
Propiedad: Pública
Uso Histórico: Puente vehicular
Uso Actual: Puente vehicular
Criterio(s) de Evaluación: A y C

El puente #6 se encuentra en la Carretera 798, kilómetro 1 en el barrio Río Cañas. Este puente de ladrillo tiene dos arcos semicirculares y una pilastra con torrecilla. El puente proyecta 8.18 metros sobre el río Cañas y tiene una longitud de 18.4 metros. El Gobierno Central y el Gobierno Municipal de Caguas contribuyeron en la construcción de esta estructura, la cual formaba parte de la antigua carretera de San Juan a Caguas. Este puente, completado en 1856 por un costo de 506 pesos, fue el sexto construirse en esta carretera. La carretera, que conectaba los pueblos de Caguas, Río Piedras y San Juan, fue terminada en 1859.

En el 2002, la Autoridad de Carreteras y Transportación cerró el puente debido a su estado deteriorado. En el 2004 se rehabilitó el puente a un costo de un millón de dólares como parte de un proyecto de restauración de puentes a nivel Isla. Se reconstruyó la baranda y el área de rodaje del puente para permitirle a éste sostener el tráfico de vehículos pesados.

El puente es una de las obras importantes de ingeniería española en la década del 1850 y está asociada con el tema de la transportación terrestre por ser parte de la primera carretera que conectó a San Juan y Caguas. Luego en la década del 1870 este puente formó parte de la Carretera Central que conectaba San Juan a Ponce.

Puente General Méndez Vigo



Coamo

Puente Núm. 173, Puente río Las Minas
PR-14, Km. 30.4
Barrio San Ildefonso

Diseñador: Timoteo Lubelza
Año de Construcción: 1862
Propiedad: Pública
Uso Histórico: Puente
Uso Actual: Puente
Criterio(s) de Evaluación: A / C

El Puente Méndez Vigo está cerca de una curva en el kilómetro 30.4 de la ruta 14. El arco, adornado con relieves de diseño geométrico que parafrasean dovelas, sube desde impostas en ladrillo hasta más de 20 pies sobre el bonito río Las Minas. De la parte superior de sus muros frontales parten dos pies de amigo para sostener un voladizo de la carretera e hileras de parapetos enmarcados en ladrillo.

Los símbolos visibles en las claves del arco encarnan su historia. Por un lado, se ve un relieve con forma de castillo, el símbolo del Cuerpo de Ingenieros del Ejército de Estados Unidos, y por el otro, hay una placa en relieve que señala el hecho de que el puente fue reconstruido en 1898 por el Primer Regimiento del Quinto Batallón de ese cuerpo.

El puente mantiene un alto grado de integridad en su diseño, mano de obra, asociación, materiales y contexto. La estructura no ha sufrido alteraciones significativas desde su periodo de relevancia, y a pesar de alteraciones menores, el arco original ha mantenido su integridad.

El puente General Méndez Vigo fue nombrado en honor al General Santiago Méndez Vigo, Gobernador de Puerto Rico, de origen español, de 1840 a 1844. La estructura es la única en mampostería en el segmento sur de la Carretera Central. El puente original fue diseñado por el ingeniero Timoteo Lubelza a un costo de 15,405 pesos, y construido en 1862.

Durante la Guerra Hispanoamericana en 1898, la estructura original del puente fue bombardeada por las fuerzas españolas, bajo la dirección del Comandante español Rafael Martínez Illescas, para cubrir su retiro a las montañas del norte de la ciudad de Coamo y para detener el avance de las tropas norteamericanas bajo el mando del General Wilson; dichas tropas venían desde Ponce.

Puente Padre Iñigo



Coamo

Puente Núm. 174, Puente de Coamo
PR-14, Km. 34.2
Barrio Palmarejo

Diseñador: Ing. Raymundo Camrubí
Constructor: Eugene Rollin & Co.
Año de Construcción: 1879
Propiedad: Pública
Uso Histórico: Puente
Uso Actual: Sin Uso
Criterio(s) de Evaluación: A / C



El puente Padre Iñigo, construido en 1879, es el más antiguo de viga lateral de celosía en hierro. Diseñado por el ingeniero Raymundo Camrubí, un notable diseñador y constructor, el puente fue manufacturado por Eugene Rollin & Co., de Bélgica, por el costo de 29,590 francos. La estructura de 70 toneladas fue traída de Europa a bordo del barco Galeón. Sus cimientos tienen pilotes de madera de tres metros de profundidad.

El puente fue construido como parte de la Carretera Central, la primera en cruzar la Cordillera Central de Puerto Rico.

El puente de dos vigas continuas se encuentra abandonado junto al puente moderno del kilómetro 34.2 de la carretera núm. 14, que entre Ponce y Cayey corresponde a la antigua Carretera Central. Los estribos y la pilastra de 14 pies de altura son de mampostería con aristones y tajameres de sillería, así como almohadillas y cornisas. El tercio inferior del alma de las vigas está llena. Las vigas son continuas y están reforzadas con montantes, especialmente, sobre la pilastra. El tablero es a base de viguetas y planchas de hierro.

La estructura no ha sufrido alteraciones significativas desde su periodo de relevancia, aunque su contexto fue alterado por la construcción del nuevo puente. De todas maneras, el puente Padre Iñigo ha retenido su carácter esencial, incluyendo un alto grado de integridad de su diseño, asociación, mano de obra y materiales.

Puente de las Calabazas



Coamo

Bridge #175, Puente Cuyón
Bridge over the Cuyón River
Carretera 14, km. 39.3

Ingeniero: Raimundo Camrubí
Constructor: Eugene Rollin & Co.
Año de Construcción: 1882
Propiedad: Pública
Uso Histórico: Puente vehicular
Uso Actual: Puente vehicular
Criterio(s) de Evaluación: A y C



El Puente de las Calabazas (también conocido como Puente Núm. 175 o Puente Cuyón) está localizado en la Carretera #14 en el kilómetro 39.3 en el barrio Cuyón de Coamo. Este puente se construyó para la sección Aibonito-Coamo de la Carretera Central. El puente de viga lateral de celosías de hierro, con 21.4 metros de longitud y 6.32 de ancho, proyecta 5.02 metros sobre la rivera del Río Cuyón. El proyecto de este puente fue preparado en 1875 por Raimundo Camrubí y Escudero, ingeniero primero del Cuerpo de Caminos, Canales y Puertos del Negociado de Obras Públicas.

Los componentes metálicos de este puente fueron fabricados por la firma constructora belga Eugene Rollin y Cía a un costo de 8,880 francos. En diciembre de 1877 los tramos en metal llegaron a Puerto Rico en el velero danés "Galeon" desde el puerto de Amberes, Bélgica. El ingeniero Camrubí completó la construcción de los estribos de sillería y mampostería sobre unos cimientos de hormigón hidráulico y supervisó la instalación de los tramos de hierro. En 1882 se completaron los trabajos. El costo total del puente fue 59,608.23 pesetas.

El Puente de las Calabazas es importante como un ejemplo de la tecnología europea de puentes metálicos que se construyó a fines del Siglo 19 en la Isla. Además, el puente se distingue por ser parte de un sistema de transportación terrestre principal (la Carretera Central) construido durante el periodo español en Puerto Rico. El 17 de febrero de 2009 este puente fue incluido en el Registro Nacional de Lugares Históricos.

Puente del río Matón



Cayey

Puente Núm.177
PR-14, Km. 63.2
Barrio Matón Abajo

Diseñador: Ingeniero Manuel López-Bayó
Constructor: Desconocido
Año de Construcción: 1866
Propiedad: Pública
Uso Histórico: Puente
Uso Actual: Puente
Criterio(s) de Evaluación: A / C

El puente sobre el río Matón, ubicado entre los municipios de Cayey y Aibonito, fue construido en hierro en el año 1886 como parte de la Carretera Central. Su longitud total es de 19.4 metros, su ancho, de 4.6 metros. La estructura superior es de hierro y la base es de ladrillo y mampostería. Fue diseñado por el ingeniero español Manuel López-Bayó y comprado en Europa por 11,105 francos.

Llama la atención, principalmente, por sus estribos en ladrillo de unos 35 pies de altura con listones, zócalos e impostas de coronamiento en sillería, y pilastras en mampostería con cornisa en piedra para proteger las cabezas de las vigas. Extensos muros de enlace coronados por parapetos continuos en mampostería con impostas de coronamiento y cornisamentos añaden a su porte.

Tanto el puente, como sus alrededores, no han sido, en esencia, alterados desde su periodo de importancia, por lo que retiene un alto grado de integridad en su diseño, mano de obra, asociación y materiales.

El puente sobre el río Matón está todavía en uso en el kilómetro 63.2 de la ruta 14 y es el más atractivo y mejor conservado de los construidos en alas laterales sólidas con vigas transversales.

Puente Martín Peña



San Juan

PR-25, Km. 8
Santurce

Ingeniero(s): Cecilio Delgado / Francisco Fortuño
Constructor: Ing. Raúl Gaya Benejam
Año de Construcción: 1939
Propiedad: Pública
Uso Histórico: Puente
Uso Actual: Puente
Criterio(s) de Evaluación: C / A

El Puente Martín Peña está localizado en el kilómetro ocho de la carretera núm. 25 y cruza el importante Caño de Martín Peña, conectando los barrios de Hato Rey y Santurce. El puente de hormigón, de viga maestra múltiple en acero, fue diseñado por los ingenieros Cecilio Delgado y Francisco Fortuño del Departamento de lo Interior de Puerto Rico. En 1939, la estructura fue construida con un presupuesto de \$116.600.00 por el ingeniero Raúl Gaya Benejam, un sansebastiano.

El puente proyecta aproximadamente 6.79 metros sobre el nivel del agua del Caño de Martín Peña. La superestructura del puente mide aproximadamente 3.79 metros, mientras que la subestructura mide 3.0 metros. Hay dos estribos de 1.5 metros de ancho y 4 metros de largo que descansan de los extremos norte y sur del puente. Cada estribo tiene en la base un rectángulo al cual se le incorporan dos pequeños cuadrados, coronados por dos pentágonos y una linterna central. Cada estribo está decorado con tres paneles en las fachadas este y oeste que miran sobre las aguas del caño.

La vía de rodaje de concreto está apoyada por vigas de acero que se apoyan en ocho columnas de acero. Las columnas, de 1.0 metros de ancho y 1.15 metros de largo, tienen en la base una forma rectangular cúbica al que se incorpora una forma hexagonal, la cual está coronada por una linterna. Cada columna está decorada con un panel cuadrado.

En la construcción de este puente es usado por primera vez en Puerto Rico, el proceso de pesar los agregados para las diferentes clases de hormigón, y se utilizó el residuo de la piedra triturada como agregado fino para la mezcla de hormigón. Además, se empleó escasa cantidad de agua en la liga de concreto para mayor solidez de la estructura. En el 2004, se llevó a cabo un proyecto para remozar la superestructura del puente y arreglar su sistema eléctrico.

Esta obra de ingeniería se destaca por su arquitectura y su vínculo con la antigua Carretera Central. El puente representa una de las obras públicas de estilo art decó más elegantes en Puerto Rico, y tiene importancia por el uso intrépido de formas geométricas escalonadas en las linternas y paneles ornamentales de los estribos y columnas. El uso de paneles ornamentales con formas geométricas y con temas florales da un grado de refinamiento y belleza a toda la estructura y la separa de los otros puentes construidos posteriormente en Puerto Rico. El 27 de agosto de 2008, el Puente de Martín Peña fue incluido en el Registro Nacional de Lugares Históricos.

Puente de Arenas



Cayey

Puente Núm. 466
Puente río La Plata
PR-735, Km. 1.3
Barrios Montellano/Arenas

Diseñador: Mariano Schar
Constructor(es): José Roque Paniagua / Tulio Lariaga
Año de Construcción: 1894
Propiedad: Pública
Uso Histórico: Puente
Uso Actual: Puente
Criterio(s) de Evaluación: A / C

El puente de Arenas, sobre el río La Plata, en Cayey, fue el de mayor longitud y la estructura más importante construida en metal durante el periodo colonial español en la Isla. Fue construido como parte de la Carretera Central, la primera que cruzaba las montañas centrales de la Isla.

El puente fue diseñado por Mariano Schar, quien era el Ingeniero de Distrito de Ponce. La armadura, de 236,623 libras, fue fabricada por la Sociedad Nicrissé y Decluve por el costo de 56,221. 44 pesos. Fue traído a la Isla por el barco Teutonia. La construcción de los estribos fue supervisada por el contratista José Roque-Paniagua. El prominente ingeniero Julio Lariñaga estuvo encargado del ensamblaje y la pintura de la armadura.

Sus cimientos en piedra y sus contrafuertes elevan la estructura en tijerilla a 60 pies sobre el nivel del agua. La estructura de tijerilla, por sí sola, posee un trabajo y diseño muy atractivos. La cubierta consiste en viguetas longitudinales y transversales que sostienen un sistema central de drenaje.

Está actualmente en uso en el kilómetro 1.3 de la ruta 735 de la antigua Carretera Central, entre Cayey y Caguas.

El puente de Arenas muestra la elegancia y la mano de obra europea. Tanto el puente, como sus alrededores, no han sufrido cambios desde su construcción, lo que hace que mantenga un alto nivel de integridad.

Puente La Liendre



Cayey

Puente Núm. 467
PR-735, Km 0.7
Barrio Vegas/Arenas

Diseñador: Ingeniero Manuel López-Bayó
Constructor: Desconocido
Año de Construcción: 1877
Propiedad: Pública
Uso Histórico: Puente
Uso Actual: Puente
Criterio(s) de Evaluación: A / C

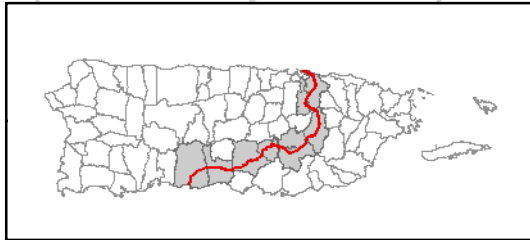
El puente La Liendre es la más antigua estructura de viguetas en forma de lálice transversal en Puerto Rico; cruza aproximadamente cincuenta pies sobre el cauce de la quebrada Beatriz. Diseñado por el ingeniero Manuel López-Bayó, la estructura en metal fue adquirida por José de Echevarría, Comisionado de Obras Públicas en París. La estructura fue fabricada por la prominente firma de Bélgica, Eugene Rollin & Co. por 9,410 francos y transportada a Puerto Rico en el barco danés Galeón.

El puente fue construido para el tramo de Caguas-Cupey de la primera carretera que cruzara la Isla, la Carretera Central.

Se distingue de los demás por los elementos verticales ondulados de sus cordones en forma de "T", la extensión vertical de la celosía, que abarca toda el alma de la viga, y las viguetas secundarias del tablero que corren perpendiculares a las transversales para sostener por sus cuatro lados a las placas de hierro de drenaje central que soportan el pavimento. Este sistema de tablero, más rígido que el usado en la mayoría de los puentes de celosía, ha de responder a la ausencia de una parte sólida inferior del alma que ayude a sostener las viguetas transversales. La estructura principal es de hierro y los estribos son en sillería.




Al día de hoy está en uso y es parte de la Carretera Central entre Cayey y Caguas.

Carretera Central de Puerto Rico
Mapa/Map 5 – Localizaciones de Casillas de Peones Camineros/
Locations of Road Mender's Houses
Imágenes por recurso/*Images by resource*



Número de Casilla	Municipio	Carretera
01	Guaynabo	1
02	Caguas	1
03	Caguas	1
04	Cayey	14
05	Caguas	14
06	Aibonito	14
07	Aibonito	14
08	Aibonito	14
09	Aibonito	14
10	Coamo	14
11	Coamo	14
12	Coamo	14
13	Juana Díaz	14
14	Juana Díaz	14
15	Juana Díaz	14
16	Ponce	14
17	Ponce	14

Legend

-  Carretera Central
-  Sección Contribuyente (Contributing Section)
-  Casillas de Peones Camineros (Road Mender's Houses)

7,600 3,800 0 7,600 Meters
 1 inch = 4.16 miles
 2/28/2019



Registro Nacional de Lugares Históricos

Nominación de la Carretera Central de Puerto Rico

Mapa de Casillas de Peones Camineros



Estructuras históricas de la Carretera Central. Casillas de peones camineros

Municipios	Recurso	Imágenes
Caguas	Casilla de Peón Caminero #2	
	Casilla de Peón Caminero #3	

Cayey

Casilla de Peón
Cambrero #4



Casilla de Peón
Cambrero #5



Aibonito

Casilla de Peón
Caminero #6



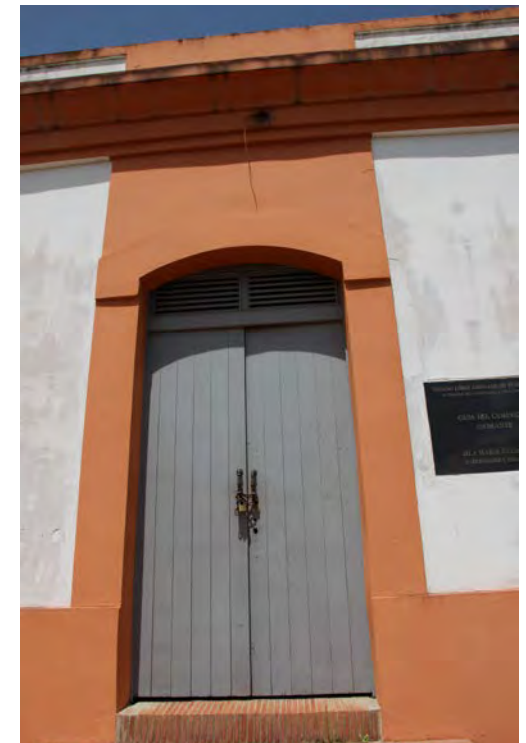
Casilla de Peón
Caminero #7



Casilla de Peón Caminero #8



Casilla de Peón Caminero #9



Municipios	Recurso	Imágenes	
Coamo	Casilla de Peón Caminero #10	 <p>A photograph of a road signpost. The top sign is a red-bordered shield with the text 'RUTA HISPANOAMERICANA' at the top, the number '14' in the center, and '1898-1998' at the bottom. Below it are two smaller white signs with red borders: 'CASA DE PEÓN CAMINERO 1874' and 'ARTILLERIA 8-9 AGOSTO 1898'. To the left of the signpost is a green sign with white text that reads 'km 4 0 .5'.</p>	  <p>Two photographs showing the exterior of the Casilla de Peón Caminero #10. The first is a wide shot of a single-story building with light blue walls and white trim around the windows and roofline. It is surrounded by lush green trees and a chain-link fence with white posts. The second is a closer view of the building's facade, showing a window with a black metal grille and a white pillar with a blue decorative top.</p>
	Casilla de Peón Caminero #11	 <p>A photograph of the Casilla de Peón Caminero #11, a single-story building with light beige walls and a flat roof. The building is partially obscured by trees and a white metal fence. In the foreground, there is a paved road and a sign that says 'SUPER HERO KIDS'.</p>	 <p>A close-up photograph of the Casilla de Peón Caminero #11, focusing on a large, leafy tree with red flowers in the foreground. The tree is in front of a white metal fence and the light-colored wall of the building.</p>

Casilla de Peón
Caminero #12



Juana Díaz
Casilla de Peón
Caminero #13



Casilla de Peon
Caminero #14



Casilla de Peon
Caminero #15

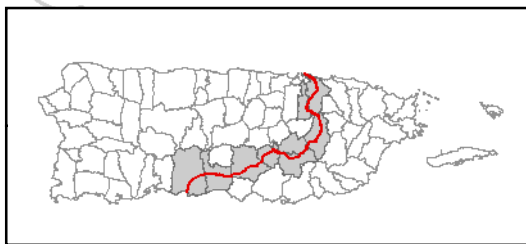


Carretera Central de Puerto Rico

Mapa/Map 6 – Localizaciones de alcantarillas y muros de seguridad

/Locations of sewers and security walls

Imágenes por recurso/*Images by resource*



No del Recurso	Municipio	Descripción	Carretera	Km
1	Caguas	Alcantarilla	PR-1	43
2	Caguas	Alcantarilla	PR-1	43.1

No de Recurso	Municipio	Descripción	Carretera	Km
3	Cayey	Alcantarilla	PR-1	50.8
4	Cayey	Alcantarilla	PR-1	51.1
5	Cayey	Alcantarilla	PR-1	51.5
6	Cayey	Alcantarilla	PR-1	51.8
7	Cayey	Alcantarilla	PR-14	67.7
8	Cayey	Alcantarilla	PR-14	67.5
9	Cayey	Alcantarilla	PR-14	67.3
10	Cayey	Alcantarilla	PR-14	66.8
11	Cayey	Alcantarilla	PR-14	66.7
12	Cayey	Alcantarilla	PR-14	65.8




No de Recurso	Municipio	Descripción	Carretera	Km
13	Aibonito	Alcantarilla Q. Gómez	PR-14	61.9
14	Aibonito	Alcantarilla	PR-14	61.1
15	Aibonito	Alcantarilla	PR-14	60.8
16	Aibonito	Alcantarilla	PR-14	60.7
17	Aibonito	Muro de Contención	PR-14	60.4
18	Aibonito	Alcantarilla	PR-14	60.3
19	Aibonito	Alcantarilla	PR-14	59.4
20	Aibonito	Alcantarilla	PR-14	59
21	Aibonito	Alcantarilla	PR-14	58.7
22	Aibonito	Alcantarilla	PR-14	57.1
23	Aibonito	Alcantarilla	PR-14	56.9

No de Recurso	Municipio	Descripción	Carretera	Km
24	Aibonito	Alcantarilla	PR-14	56
25	Aibonito	Alcantarilla	PR-14	54.6
26	Aibonito	Alcantarilla	PR-14	53
27	Aibonito	Alcantarilla	PR-14	52.6
28	Aibonito	Alcantarilla-Pontón	PR-14	52
29	Aibonito	Alcantarilla-Pontón	PR-14	51.1
30	Aibonito	Alcantarilla	PR-14	49.1
31	Aibonito	Pontón Quebrada Los Pastos	PR-14	48.3
32	Aibonito	Alcantarilla	PR-14	45.4
33	Aibonito	Muro seguridad	PR-14	45.2
34	Aibonito	Muro seguridad histórico	PR-14	44.6
35	Aibonito	Muro contención histórico	PR-14	44.1
36	Aibonito	Alcantarilla	PR-14	41
37	Aibonito	Alcantarilla	PR-14	40

No de Recurso	Municipio	Descripción	Carretera	Km
38	Coamo	Alcantarilla-Pontón	PR-14	40.3
39	Coamo	Alcantarilla	PR-14	38.3
40	Coamo	Alcantarilla	PR-14	38
41	Coamo	Alcantarilla	PR-14	37.9
42	Coamo	Alcantarilla	PR-14	37.7
43	Coamo	Alcantarilla	PR-14	36.6
44	Coamo	Alcantarilla	PR-14	35.7
45	Coamo	Alcantarilla	PR-14	35.6
46	Coamo	Alcantarilla	PR-14	35.3
47	Coamo	Alcantarilla	PR-14	34.8
48	Coamo	Alcantarilla	PR-14	34.5
49	Coamo	Alcantarilla	PR-14	27
50	Coamo	Alcantarilla	PR-14	25.6

No de Recurso	Municipio	Descripción	Carretera	Km
51	Juana Díaz	Alcantarilla	PR-14	22.9
52	Juana Díaz	Alcantarilla	PR-14	22.1
53	Juana Díaz	Alcantarilla	PR-14	21.7
54	Juana Díaz	Alcantarilla	PR-14	21.5
55	Juana Díaz	Alcantarilla	PR-14	20.9
56	Juana Díaz	Alcantarilla	PR-14	18.9
57	Juana Díaz	Alcantarilla	PR-14	18.9
58	Juana Díaz	Alcantarilla	PR-14	18
59	Juana Díaz	Alcantarilla	PR-14	16.7
60	Juana Díaz	Alcantarilla	PR-14	11.5

Legend

-  Carretera Central
-  Sección contribuyente (Contributing Section)
-  Alcantarillas, pontones, muros de seguridad (Sewers, security walls)

7,600 3,800 0 7,600 Meters
 1 inch = 4.17 miles
 2/28/2019










Registro Nacional de Lugares Históricos

Nominación de la Carretera Central de Puerto Rico

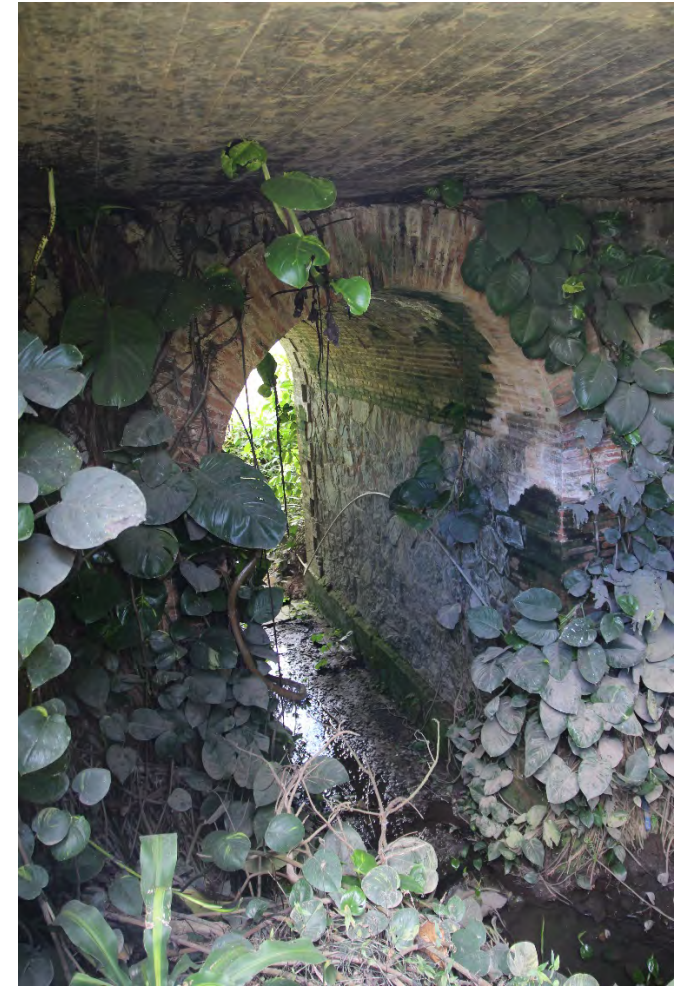
Mapa de Alcantarillas, Pontones y Muros de Seguridad



Municipio	Recurso	Imágenes
Caguas	Alcantarilla	 A close-up photograph of a semi-circular drainage opening cut into a stone wall. The stones are large and roughly hewn, with some green moss or algae growing on the surface. The opening is dark, and some green plants are visible on the right side of the frame.
	Alcantarilla	 A photograph of a concrete drainage structure. It features a brick-lined opening on the left side. The concrete walls are weathered and have some green moss growing on them. There are some orange pipes or cables in the foreground.  A close-up photograph of a brick-lined drainage opening. The bricks are reddish-brown and arranged in a semi-circular arch. The opening is dark, and there is some green moss growing on the brickwork.

Municipio	Recurso	Imágenes			
Cayey	Alcantarilla				
	Alcantarilla				

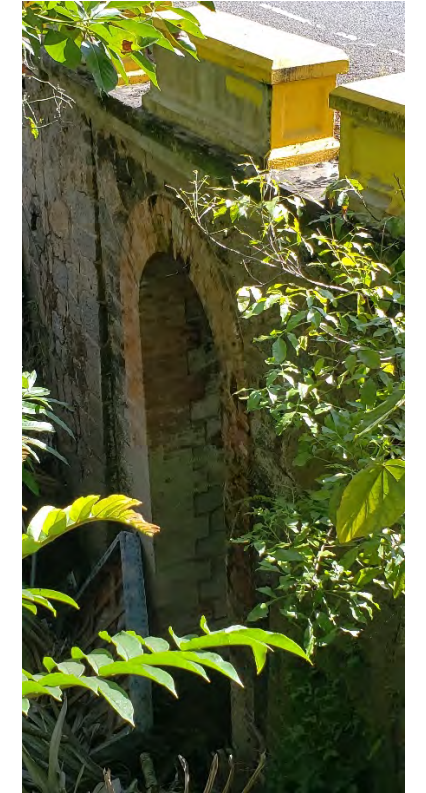
Alcantarilla



Alcantarilla



Alcantarilla



Alcantarilla



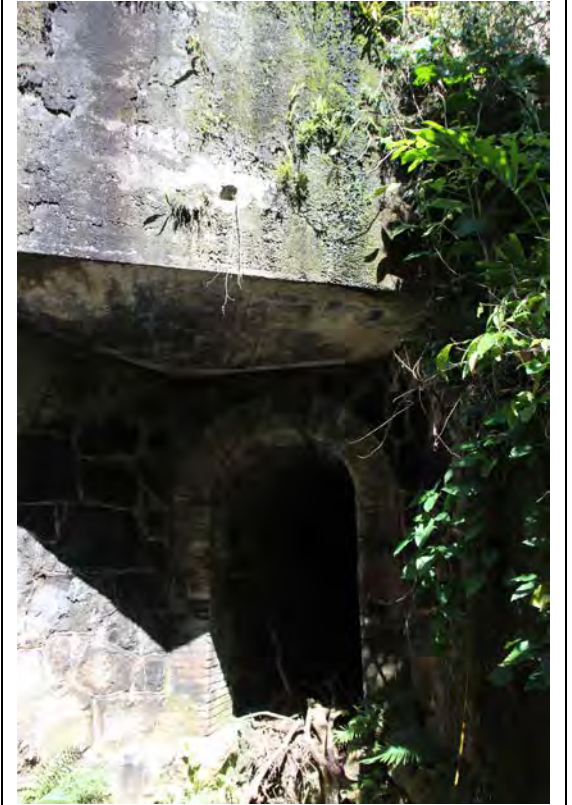
Alcantarilla



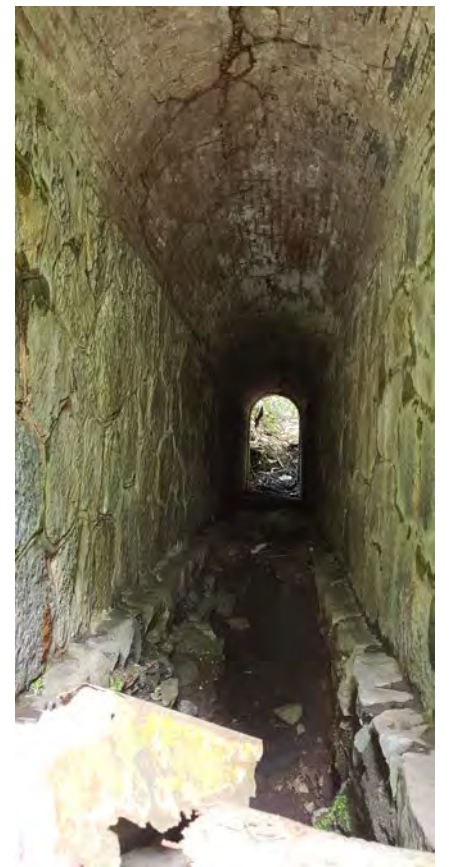
Alcantarilla








Alcantarilla



Alcantarilla



Municipio	Recurso	Imágenes		
Aibonito	Alcantarilla			
	Alcantarilla			

Alcantarilla



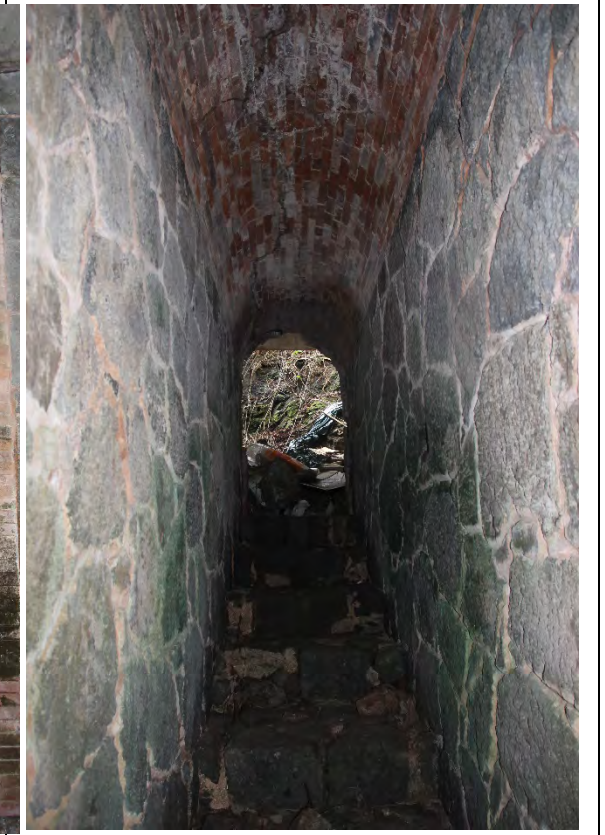
Alcantarilla



Alcantarilla



Alcantarilla



Alcantarilla



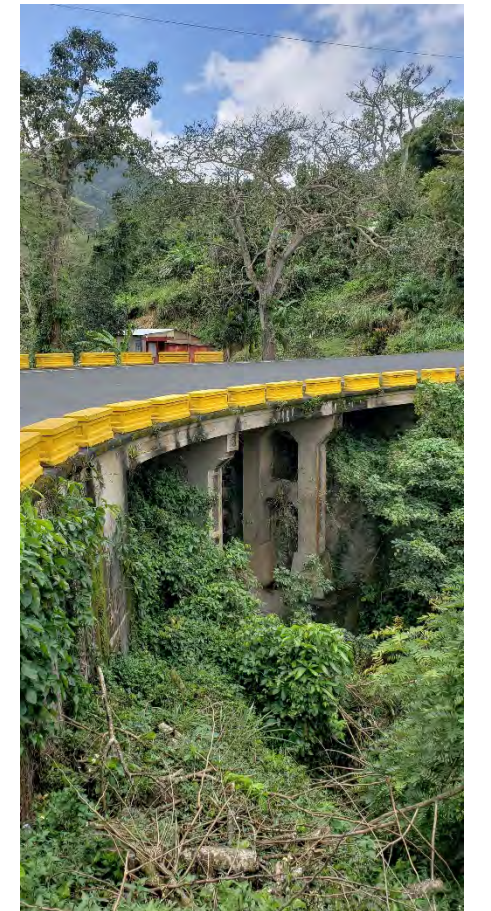
Alcantarilla



Alcantarilla



Alcantarilla-Pontón Gómez



Alcantarilla



Alcantarilla



Alcantarilla-Pontón



Alcantarilla



Alcantarilla



Alcantarilla



Alcantarilla



Alcantarilla



Alcantarilla



Muro de Seguridad



Muro Histórico de Seguridad



Muro Histórico de Seguridad







Alcantarilla



Alcantarilla



Estructuras históricas de la Carretera Central.

Municipio	Recurso	Imágenes	
Aibonito	Muro de contención extenso		
	Mirador		

Municipio	Recurso	Imágenes		
Coamo	Alcantarilla-Pontón			
	Alcantarilla-Pontón			

Alcantarilla



Alcantarilla



Alcantarilla



Alcantarilla



Alcantarilla-Pontón



Alcantarilla



Alcantarilla



Alcantarilla-Pontón



Alcantarilla



Alcantarilla











Coamo

Alcantarilla-Pontón



Estructuras históricas de la Carretera Central. Sistema de Alcantarillas

Municipio	Recurso	Imágenes			
Juana Díaz	Alcantarilla				
	Alcantarilla				
	Alcantarilla				

Juana Díaz

Alcantarilla



Alcantarilla-Pontón



Alcantarilla



Juana Díaz

Alcantarilla



Alcantarilla



Juana Díaz

Alcantarilla



Alcantarilla-Pontón



