Improving Transportation Infrastructure Resilience Against Hurricanes, Other Natural Disasters, and Weathering: Part II - Analysis of Pedestrian Bridges Failures Due to Hurricane Maria

Volume 1

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| 16. Abstract | | | | |
| After the passage of Hurricane Maria as a strong category 4 storm through Puerto Rico, many different types of structures were affected. The objective of this investigation was to determine whether Hurricane Maria caused damages | | | | |
| structures were affected. The objective of this investigation was to determine whether Hurricane Maria caused damages to pedestrian bridges in Puerto Rico, taking the San Juan Metropolitan Area (SJMA) as a case study. To achieve the | | | | |
| project objective, the following tasks were | performed: first, a li | terature review on | pédestrian bridges in | general was |
| performed; second, several visits were made Authority to search for available informati | te to the Bridges Off | le of the Puerto F | condition: third all the | ortation e bridges on the |
| SJMA were geolocated; fourth, visits were | made to visually ins | pect the pedestria | n bridges; fifth, by co | mparing the |
| visual inspection findings to the previous i | | | | |
| induced by wind action was performed; an that, out of the 21 bridges that were inspec | | | | |
| that the main cause of the damages was the | e presence of traffic s | igns that were mo | unted on the bridges. | Two of the |
| damaged pedestrian bridges experienced in bridge structure. On the other two, the tran | | | | |
| wind induced vibrations; the signs were sw | vinging due to the lac | k of lower end su | pports, situation that c | constituted a |
| safety hazard to the vehicles that passed be | | | | |
| attaching signs to pedestrian bridges and that, after an extreme wind event, preliminary inspections should not only contemplate the main bridge structure, but any flexible elements attached to it. Volume 2 of this project investigates a | | | | |
| steel truss pedestrian bridge that experienc | steel truss pedestrian bridge that experienced permanent lateral deflections due to the hurricane. The main purpose of | | | ain purpose of |
| the research was to determine if the present inelastic lateral response. A detailed inspect | | | | |
| inelastic lateral response. A detailed inspection of the bridge was performed, a condition assessment was developed, I tests were carried out to characterize the material, and FE simulations were executed to capture the response with and | | | ponse with and | |
| without the signs. It was concluded that the signs played a predominant role in the inelastic response, but that there | | | | |
| were also other conditions that may have contributed to the plastic deflections. | | | | |
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1 Introduction

Pedestrian bridges are structures that are required to provide pedestrians with a safe passage in areas that are not accessible by walking (i.e., crossing water bodies) or that impose special risks to pedestrian flow (i.e., crossing high volume roadways). As they are obviously used in different situations with different characteristics, pedestrian bridges can be built with different materials (such as reinforced concrete, prestressed concrete, steel, wood, stone, aluminum, among others) and use different structural systems (such as arches, beams and slabs, trusses, suspension cables, or cable-stayed, among others). As these structures are very important for the safety of the public, it is imperative to continuously evaluate their integrity and serviceability, especially after an extreme event like a hurricane.

On September 20, 2017, Hurricane Maria crossed Puerto Rico from its southeast end to its northwest end (see Figure 1.1). The island suffered major damages in diverse structures, such as houses, multistory buildings, vehicular bridges, roads, sport venues, and storage facilities, among many others. The damages caused by Hurricane Maria in Puerto Rico and the Virgin Islands has been estimated to be around \$90 billion, making it the third most expensive hurricane in the history of the United States (Pasch, Penny, & Berg, 2019). Due to the intensive and extensive damages produced by Hurricane Maria, it was decided to explore the effects of this extreme event on pedestrian bridges in order to evaluate to what extent they were affected.

The objective of this project was assessing pedestrian bridge damages that may be attributed to Hurricane Maria and determining their causes and possible improvements that may have avoided such damages. The San Juan Metropolitan Area (SJMA) was selected as the case study area. The project had five principal stages: conduct a literature review on pedestrian bridges (the specifications that apply to the design and inspection of pedestrian bridges in Puerto Rico), identify and geolocate the pedestrian bridges in the SJMA, consult and document available drawings and inspections performed in previous years for each pedestrian bridge identified in the SJMA, perform field visits and inspections to each pedestrian bridge, and finally evaluate the findings and assess if the encountered damages were related to the hurricane. This document covers all the stages of the project and presents conclusions and recommendations.

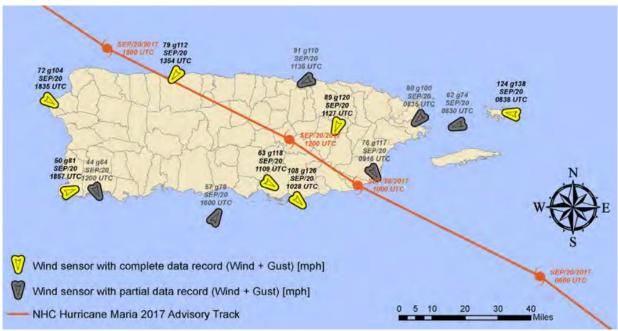


Figure 1.1: Trajectory of Hurricane Maria over Puerto Rico (FEMA, 2018)

2 Literature Review

Two important aspects for a resilient pedestrian bridge construction are the design process and the inspection and condition assessments that allows a proper maintenance. In this chapter, a summary is presented of the specifications that apply to the design and inspection of pedestrian bridges in Puerto Rico.

2.1 Design Specification for Pedestrian Bridges

The design and construction of pedestrian bridges should be done in accordance with the *LRFD Guide Specifications for the Design of Pedestrian Bridges* (AASHTO, 2009). These specifications are meant to be used as a supplement to the *LRFD Bridge Design Specifications* (AASHTO, 2020), which are widely used for the design of vehicular bridges.

Pedestrian bridges are designed to support different loads, such as dead load, pedestrian loading, maintenance vehicle load (unless vehicular access is prevented by permanent physical methods), equestrian load, wind load, and fatigue load, among others. Again, both sets of specifications mentioned in the previous paragraph must be used together in order to determine the applicable loads and their combinations.

Given the objective of this project, the determination of wind loads is of particular interest. The *LRFD Guide Specifications for the Design of Pedestrian Bridges* (AASHTO, 2009) indicates wind loads shall be determined in accordance with the *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals* (AASHTO, 2015), unless otherwise required by the bridge owner. This is done because pedestrian bridges are potentially more flexible than vehicular bridges and because of the possibility of traffic signs being mounted on pedestrian bridges (AASHTO, 2009). The *LRFD Guide Specifications for the Design of Pedestrian Bridges* (AASHTO, 2009) clearly indicate that signs mounted on pedestrian bridges must be considered when calculating wind loads.

2.2 Inspection Procedures for Pedestrian Bridges

The Puerto Rico Highway and Transportation Authority (PRHTA) used to be in charge of the inspection of pedestrian bridges in Puerto Rico. For these inspections, PRHTA followed the standards of the National Bridge Inventory (NBI). When visual inspections of pedestrian bridges were performed, they focused their assessments mostly to NBI Items 58, 59, and 60, which corresponds to the deck, the superstructure, and the substructure, respectively. A condition assessment was given according to the findings using a rating scale that ranges from nine (9) to zero (0). Table 2.1 presents the Condition Rating Scale used for the bridge Items 58, 59, and 60 and a description of the condition.

| Code | Description | | |
|------|--|--|--|
| Ν | NOT APPLICABLE | | |
| 9 | EXCELLENT CONDITION | | |
| 8 | VERY GOOD CONDITION (No problems noted.) | | |
| 7 | GOOD CONDITION (Some minor problems.) | | |
| 6 | SATISFACTORY CONDITION (Structural elements show some minor deterioration.) | | |
| 5 | FAIR CONDITION (All primary structural elements are sound but may have minor | | |
| | section loss, cracking, spalling or scour.) | | |
| 4 | POOR CONDITION (Advanced section loss, deterioration, spalling or scour.) | | |
| 3 | SERIOUS CONDITION (Loss of section, deterioration, spalling or scour have seriously | | |
| | affected primary structural components. Local failures are possible. Fatigue cracks | | |
| | in steel or shear cracks in concrete may be present.) | | |
| 2 | CRITICAL CONDITION (Advanced deterioration of primary structural elements. | | |
| | Fatigue cracks in steel or shear cracks in concrete may be present or scour may | | |
| | have removed substructure support. Unless closely monitored it may be necessary | | |
| | to close the bridge until correction action is taken.) | | |
| 1 | "IMMINENT" FAILURE CONDITION (Major deterioration or section loss present in | | |
| | critical structural components or obvious vertical or horizontal movement affecting | | |
| | structure stability. Bridge is closed to traffic but corrective action may put back in | | |
| | light service.) | | |
| 0 | FAILED CONDITION (Out of service; beyond corrective action.) | | |

Table 2.1: NBI general condition rating guidelines (Federal Highway Administration, 1995)

Appendix A presents the forms and procedures used by PRHTA for the documentation of inspections of pedestrian bridges. These documents are:

- Bridge Load Capacity Summary Form
- Critical Finding Memorandum
- Safety Inspection Report
 - Initial Inspection Report
 - Routine Inspection Report
- Standards for Photographs of Existing Bridges
- Standard Element Numbering Procedure
- Quality Assurance / Quality Control Forms
- Scope of Work of Underwater Inspection
- Procedure for Conducting Underwater Inspection
- Failure Critical Inspection Procedures

All inspections were carried out with the most up-to-date forms by PRHTA. These abovementioned forms were filled out based on findings, giving ratings (as per Table 2.1) and comments. Any rating of 7 or less was accompanied with an explanatory comment. When the rating was 4 or less, in addition to the comment, the inspector had to attach photographs that exemplify the condition and justify the rating.

At some point before the passing of Hurricane Maria through Puerto Rico, the ownership of the pedestrian bridges passed to the municipalities, together with the responsibility of inspecting them. Still, old inspection reports by the PRHTA were collected for this project.

3 Methodology

In order to achieve the objectives of this research, the following list of tasks summarizes the procedure followed to assess the impact of Hurricane Maria on pedestrian bridges in the San Juan Metropolitan Area (SJMA) of Puerto Rico:

- Perform a literature review and collect background data.
 - Visit the offices of the Puerto Rico Highway and Transportation Authority to obtain relevant background data (i.e., inspection reports, photos, drawings, manuals of inspections).
 - Perform a literature review on pedestrian bridges.
 - Study the available inspections reports on pedestrian bridges.
 - Review news reports on bridge damages.
- Identify pedestrian bridges in the SJMA.
 - Obtain a list of bridges in the area.
 - o Geo-locate the pedestrian bridges with the platform Google Earth Pro.
 - Assess ownership and accessibility.
- Perform field visit and visual inspection of pedestrian bridges in the area of study.
 - Try to identify possible damages that may have been produced by the hurricane.
 - Complement the visual inspection with interviews of local residents, when possible, to receive their input on the condition of the bridge previous to the hurricane.
 - Document with several high-quality photographs each bridge.

- Fill in forms with comments on the preliminary findings during the visit. The forms used for field inspections are presented in Appendix B.
- Evaluate the findings and compare them to previous inspections finding by the PRHTA to identify damages that may be attributed to Hurricane Maria.
- Document all information collected and the findings.

It should be pointed out that, for this project, the inspected pedestrian bridges were not rated, since the objective was only to identify the damages that were understood to have been caused by the hurricane. Those damages are described in detail.

4 Pedestrian Bridges in the San Juan Metropolitan Area

As previously mentioned, in the past the Puerto Rico Highway and Transportation Authority (PRHTA) was responsible for the inspections and evaluation of pedestrian bridges, but at some point before Hurricane Maria made landfall in Puerto Rico, that changed. Currently, the responsibility of inspecting and evaluating pedestrian bridges is of the municipality in which the bridge is located. Nonetheless, PRHTA performed visual inspections of many pedestrian bridges and still maintains information about them.

For this project, PRHTA provided inspection reports (which include plans and photos) of 32 pedestrian bridges located in the San Juan Metropolitan Area (SJMA). Out of the 32 pedestrian bridges, four had been removed prior to Hurricane Maria due to deteriorating conditions; one was removed between 2014 and 2017, while three had already been completely removed by April 2014. Interestingly, the four removed bridges were made of steel and were constructed between 1971 and 1978.

The information of the remaining 28 bridges was used to determine their location, as listed in Table 4.1. Also indicated in Table 4.1 is whether the owner of the bridge is a municipality or if it is owned by another type of entity. These bridges were then geolocated using Google Earth Pro, as shown in Figure 4.1.

Out of the 28 bridges, it was decided to inspect only the 21 bridges owned by the municipality. The seven bridges privately owned were not inspected because they would require a permit from the owner. The following two chapters present the findings of the visual inspections of the 21 bridges.

Out of the 21 pedestrian bridges inspected, it was found that four presented damages that may be attributed to Hurricane Maria. These bridges are discussed in Chapter 5, including background information and descriptions of the damages attributed to the hurricane.

Meanwhile, the bridges that did not present damages due to Hurricane Maria are discussed in Chapter 6. Although these bridges did not present damages due to the hurricane, the inspection team documented any deterioration they detected.

| Table 4.1: List of Pedestrian Bridges in the SJMA | | | | |
|---|---------------|---------------|--------------|--|
| Bridge No. | Latitude | Longitude | Ownership | |
| 0626 | 18° 23′ 46″ N | 66° 03′ 09″ W | Municipality | |
| 0745 | 18° 27′ 08″ N | 66° 05′ 12″ W | Municipality | |
| 0748 | 18° 23′ 42″ N | 66° 02′ 50″ W | Municipality | |
| 0960 | 18° 23′ 35″ N | 66° 04′ 14″ W | Municipality | |
| 1095 | 18° 25′ 03″ N | 66° 02′ 36″ W | Municipality | |
| 1137 | 18° 26′ 50″ N | 66° 02′ 59″ W | Municipality | |
| 1307 | 18° 26′ 47″ N | 66° 02′ 41″ W | Municipality | |
| 1418 | 18° 24′ 36″ N | 66° 02′ 37″ W | Municipality | |
| 1478 | 18° 23′ 57″ N | 66° 06′ 17″ W | Municipality | |
| 1513 | 18° 21′ 04″ N | 66° 05′ 26″ W | Municipality | |
| 1616 | 18° 27′ 38″ N | 66° 04′ 52″ W | Hotel | |
| 1736 | 18° 23′ 42″ N | 66° 02′ 41″ W | Municipality | |
| 1743 | 18° 23′ 48″ N | 66° 02′ 35″ W | Municipality | |
| 1762 | 18° 24′ 03″ N | 66° 03′ 02″ W | University | |
| 1774 | 18° 24′ 26″ N | 66° 04′ 21″ W | Municipality | |
| 1888 | 18° 26′ 41″ N | 66° 04' 09" W | Hospital | |
| 1897 | 18° 23′ 12″ N | 66° 03′ 41″ W | University | |
| 1926 | 18° 25′ 27″ N | 66° 04′ 14″ W | Municipality | |
| 1927 | 18° 25′ 29″ N | 66° 03′ 33″ W | Airline | |
| 2087 | 18° 26′ 37″ N | 66° 04′ 14″ W | Municipality | |
| 2336 | 18° 24′ 43″ N | 66° 01′ 44″ W | Municipality | |
| 2351 | 18° 24′ 40″ N | 66° 06′ 08″ W | Telecom Co. | |
| 2355 | 18° 24′ 30″ N | 66° 02′ 10″ W | Municipality | |
| 2549 | 18° 23′ 22″ N | 66° 04′ 51″ W | Hospital | |
| 2566 | 18° 24′ 28″ N | 66° 03′ 32″ W | Municipality | |
| 2665 | 18° 27′ 55″ N | 66° 05′ 27″ W | Municipality | |
| 2682 | 18° 26′ 53″ N | 66° 03′ 35″ W | Municipality | |
| 2683 | 18° 26′ 51″ N | 66° 03′ 21″ W | Municipality | |
| | | | | |



Figure 4.1: Aerial photo of pedestrian bridges in the San Juan Metropolitan Area (Source: Google Earth Pro)

5 Pedestrian Bridges with Damages Possibly Caused by Hurricane Maria

Out of the 21 pedestrian bridges in the San Juan Metropolitan Area (SJMA) inspected for this project, four exhibited damages that may have been caused by Hurricane Maria. These are:

- PB 0960 Traffic sign detached from mounting assembly and damaged handrail
- PB 1137 Lateral deflections in the plastic range
- PB 1307 Lateral deflections in the plastic range
- PB 2336 Traffic sign detached from mounting assembly

In this chapter, background information is presented on these four pedestrian bridges, as well as the findings of the visual inspections performed for this project. The background information was obtained from information provided by the Puerto Rico Highway and Transportation Authority (PRHTA).

5.1 Pedestrian Bridge 0960

Pedestrian Bridge 0960 (shown in Figure 5.1 and Figure 5.2) was constructed in 1967. It is a slab type bridge made of reinforced concrete. The bridge is located at coordinates 18° 23' 35" N and 66° 04' 14" W, connecting Villa Nevarez Urbanization with Quintas de San Ramon Urbanization, which is next to the Puerto Rico Medical Center (see Figure 5.3). The bridge crosses above Las Americas Expressway (PR-18), where by 2005 it had an ADT of 178,900 and a Truck ADT of 4%. Neighbors from the area estimate that the bridge is mostly used by medical students living in Villa Nevarez and working at the Medical Center.



Figure 5.1: South view of PB 0960



Figure 5.2: North view of PB 0960



Figure 5.3: Location of PB 0960 (Source: Google Earth Pro)

5.1.1 PRHTA Inspection Reports

PRHTA provided inspection reports with the following dates, (full reports are presented in Appendix C):

- April 15, 2014
- August 12, 2002
- February 9, 2000
- March 20, 1998
- March 5, 1996
- September 30, 1992

The latest inspection report, dated April 15, 2014, refers to an inspection carried out on December 9, 2008. The report for the 2008 inspection was not available. Table 5.1 presents the ratings given to the bridge's deck, superstructure, and substructure on two most recent inspections. It can be seen that the deck showed a slight improvement, but the superstructure and substructure kept the same rating.

| Table 5.1: PB 0960 ratings from most recent inspections (Source: PRHTA) | | | |
|---|------------------|----------------|--|
| | Rating | | |
| Item | December 9, 2008 | April 15, 2014 | |
| Deck (Item 58) | 4 | 5 | |
| Superstructure (Item 59) | 4 | 4 | |
| Substructure (Item 60) | 5 | 5 | |

The latest inspection report made the following observations: "The wearing surface shows poor finishing, light scalings and fine to medium transverse cracks. Inadequate ramps for handicaps, holes and much vegetation along the wearing surface and railings. Ramps railings with broken sections from supports and movement. Large spallings with exposed reinforced steel due to traffic impact at beams of second span over route towards Caguas and over reversible lane. Medium horizontal crack at pier cap (East Side)."

5.1.2 Plans of the Bridge

Figure 5.4 and Figure 5.5 reproduce plans of the pedestrian bridge. The plans are dated 1976, but they were copied from the 2014 inspection report.

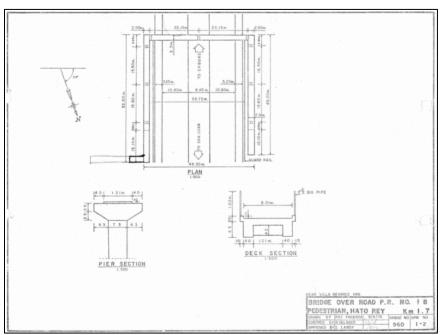


Figure 5.4: PB 0960 plans sheet 1 of 2 (Source: PRHTA)

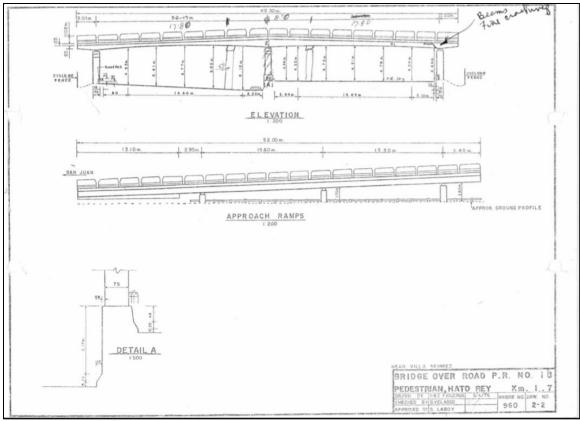


Figure 5.5: PB 0960 plans Sheet 2 of 2 (Source: PRHTA)

5.1.3 Photos of Inspections by PRHTA

Figure 5.6, Figure 5.7 and Figure 5.8 present photos of the bridge from 1972. It can be seen in this pictures that, back then, the bridge did not have chain-link fencing, nor did it have traffic signs attached to it.



Figure 5.6: North side of PB 0960 on July 21, 1972 (Source: PRHTA)



Figure 5.7: Underside of PB 0960 on July 21, 1972 (Source: PRHTA)



Figure 5.8: Walkway of PB 0960 on July 21, 1972 (Source: PRHTA)

5.1.4 Photos Before and After Hurricane Maria

To detect if the bridge suffered any major deformations due to Hurricane Maria, old photographs from PRHTA were compared to pictures taken in 2019. One such comparison can be made between a photo of the walkway from 2000 (Figure 5.9) and a another from 2019 (Figure 5.10). No deformation in the structural elements was detected from the comparison of photographs.



Figure 5.9: Walkway of PB 0960 on September 6, 2000 (Source: PRHTA)



Figure 5.10: Walkway of PB 0960 on March 13, 2019

5.1.5 Inspection by PUPR

The inspection by PUPR was conducted by Civil Engineering undergraduate students Adriana Murati-Núñez and Jonathan Hernández on March 13, 2019. During the inspection, the weather was sunny. The bridge was open to pedestrians. During the visit, a neighbor approached the inspection team and expressed concern for the safety of the people that use the bridge. One of the concerns was that the sidewalk (at the location indicated in Figure 5.11) used to approach the bridge ramp on the west side has a hole with a depth of more than 1 ft. This hole was covered with a pallet, as shown in Figure 5.12. In the same area, a section of the sidewalk has sunk, as shown in Figure 5.13. Other observations made by the inspection team were the growing vegetation on the chain-link fence of the ramp (see Figure 5.14) and presence of corrosion on the support bases of the chain-link fence (see Figure 5.15).



Figure 5.11: Pedestrian path with the red circle indicating location of tripping hazards (Source: Google Earth Pro)



Figure 5.12: Holes in sidewalk covered with a pallet



Figure 5.13: Sunk section of sidewalk



Figure 5.14: Vegetation in chain-link fencing



Figure 5.15: Corrosion in base support of chain-link fencing

At the time of the inspection, the bridge had attached five signs of different sizes, as it can be appreciated in Figure 5.1 and Figure 5.2. In terms of possible damages caused by Hurricane Maria, it was observed that one of the traffic signs mounted on the bridge was detached at the bottom end from the mounting assembly, as indicated in Figure 5.16. It is theorized that the detachment was due to wind induced vibrations that occurred during the hurricane.



Figure 5.16: Traffic Signs partially detached from support

It was observed that all the traffic signs mounted on the bridge were attached to the handrails, as shown in Figure 5.17. It was noticed that there were cracks at the base of handrails posts (see Figure 5.18), and one section was detached (see Figure 5.19) and bent, affecting the sign (see Figure 5.20). Wind vibrations may have induced the cracks and triggered the bent.



Figure 5.17: Sign mount attached to handrail



Figure 5.18: Cracks at the base of the handrail posts



Figure 5.19: Detached handrail post



Figure 5.20: Deformed sign due to handrail bent

5.2 Pedestrian Bridge 1137

Pedestrian Bridge 1137 (shown in Figure 5.21) was a steel structure constructed in 1968. The bridge was located at coordinates 18° 26' 49.75" N and 66° 02' 59.80" W. This Bailey bridge connected Norte Shopping Center and Luis Lloréns Torres public housing complex at the north with the Villa Palmeras sector at the south, as shown in Figure 5.22. The structure is very important for the security of pedestrians, as it crosses over the Román Baldorioty de Castro Expressway, which has a very high vehicular flow (67,300 ADT with the Truck 4% ADT in 2017). As it will be explained later, PB 1137 was removed by PRDOT because it was highly affected by Hurricane Maria. Still, the PUPR team was able to inspect the structure before its removal.



Figure 5.21: Pedestrian Bridge 1137



Figure 5.22: Location of PB 1137 (Source: Google Earth Pro)

5.2.1 PRHTA Inspection Reports

PRHTA provided inspection reports with the following dates, (full reports are presented in

Appendix D):

- May 15, 2017
- January 23, 2014
- June 29, 2001
- March 11, 1999
- August 19, 1996
- December 22, 1994
- February 24, 1993
- June 8, 1991
- June 23, 1989
- July 28, 1987

- April 21, 1986
- July 16, 1975
- November 13, 1972

Table 5.2 presents the ratings given to the bridge's deck, superstructure, and substructure on two most recent inspections. It can be seen that the deck had reached a rating of Poor (4), while the substructure kept deteriorating.

| Table 5.2: PB 1137 ratings from most recent inspections (Source: PRHTA) | | | |
|---|------------------|--------------|--|
| | Rating | | |
| Item | January 23, 2014 | May 15, 2017 | |
| Deck (Item 58) | 5 | 4 | |
| Superstructure (Item 59) | 5 | 5 | |
| Substructure (Item 60) | 6 | 5 | |

The latest inspection report made the following observations about the deck: "There is moderate to severe corrosion on the surface, there are several big holes due to corrosion on the decking plates, there is a big section with a detached and skewed corner creating a hole, big patches to repair corroded sections, there are several sections of the deck that have disconnected from its weld points, …" Referring to the superstructure, the report indicates that "several of the lateral bracing components have light, moderate and sever corrosion and loss of section, some of the upper chord sections have moderate loss of section due to corrosion." Finally, the report indicates that the "steel columns are in good condition, light corrosion."

5.2.2 Plans of the Bridge

The oldest set of plans obtained for this bridge were undated and drawn by hand, as shown in Figure 5.23 and Figure 5.24. Also obtained were a plan from 1976 with a 1982 revision (Figure 5.25) and 1987 revision (Figure 5.26), and a set of plans from 2001 (Figure 5.27 to Figure 5.32).

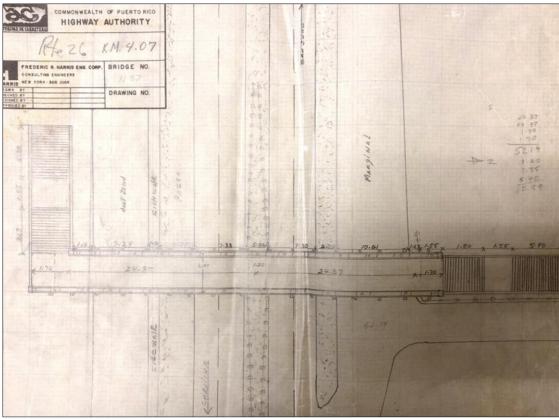


Figure 5.23: PB 1137 undated plan Sheet 1 of 2 (Source: PRHTA)

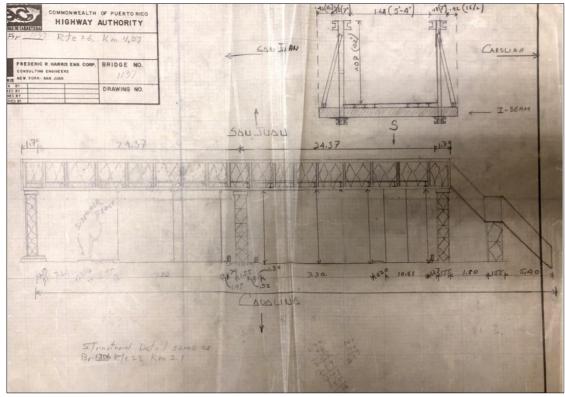


Figure 5.24: PB 1137 undated plan Sheet 1 of 2 (Source: PRHTA)

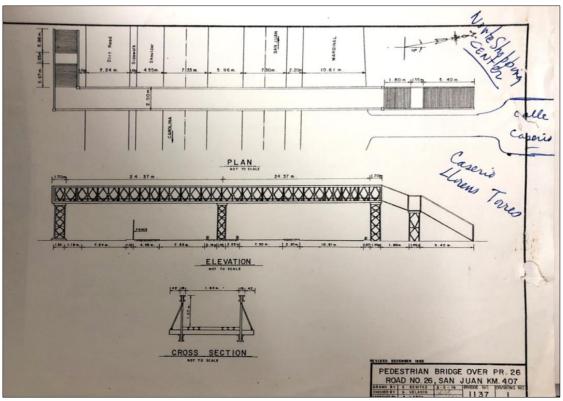


Figure 5.25: PB 1137 plan from 1976 with 1982 revision (Source: PRHTA)

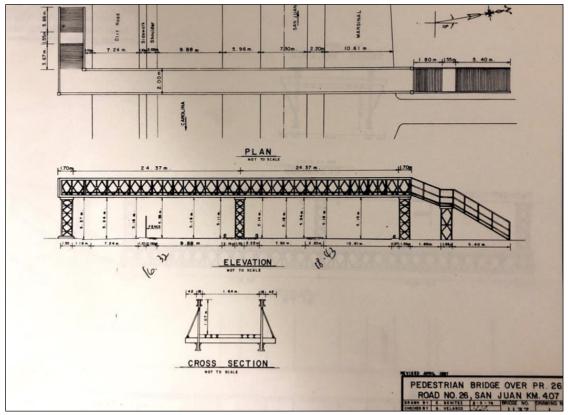


Figure 5.26: PB 1137 plan from 1976 with 1987 revision (Source: PRHTA)

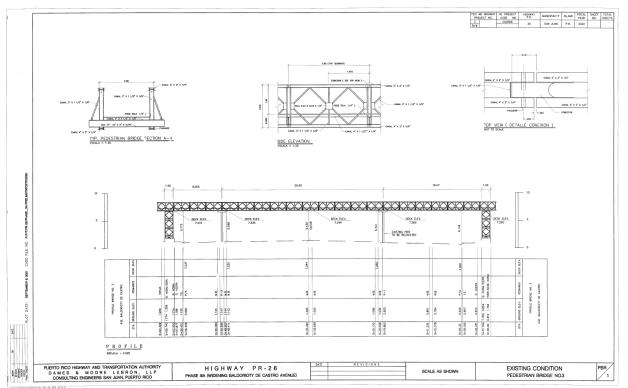


Figure 5.27: PB 1137 plans from 2001 sheet 1 of 6 (Source: PRHTA)

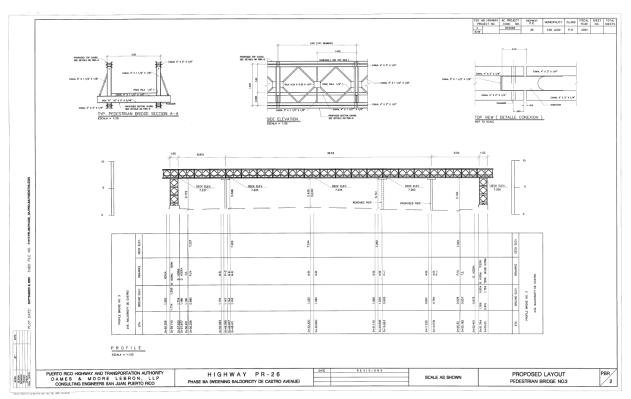


Figure 5.28: PB 1137 plans from 2001 sheet 2 of 6 (Source: PRHTA)

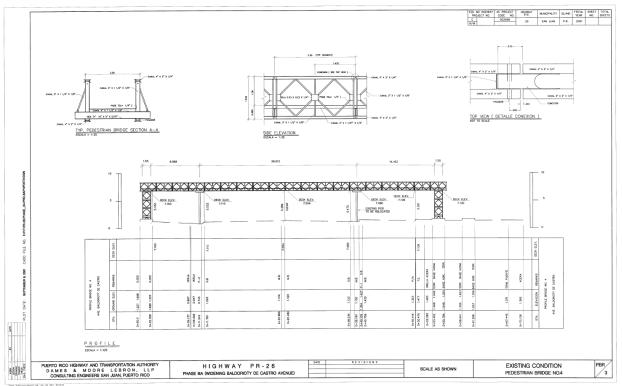


Figure 5.29: PB 1137 plans from 2001 sheet 3 of 6 (Source: PRHTA)

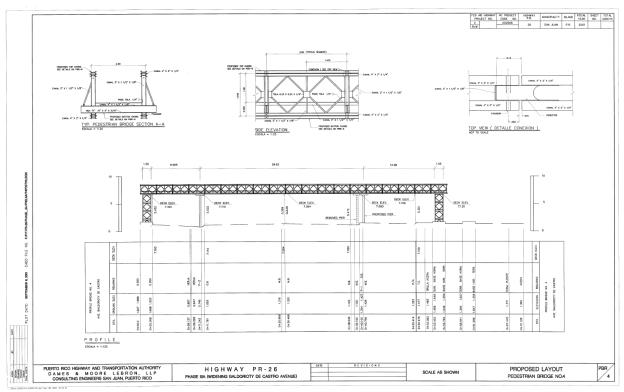


Figure 5.30: PB 1137 plans from 2001 sheet 4 of 6 (Source: PRHTA)

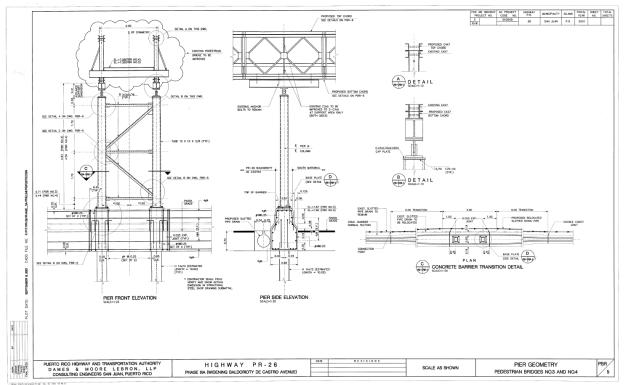


Figure 5.31: PB 1137 plans from 2001 sheet 5 of 6 (Source: PRHTA)

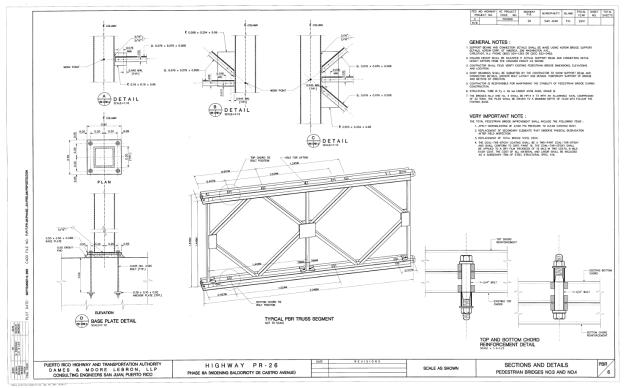


Figure 5.32: PB 1137 plans from 2001 sheet 6 of 6 (Source: PRHTA)

5.2.3 Photos of Inspections by PRHTA

Figure 5.33 presents a set of photos of the bridge taken in 1999. It can be seen in this pictures that, back then, the bridge did not have chain-link fencing, but that it already has at least two traffic signs attached to it.

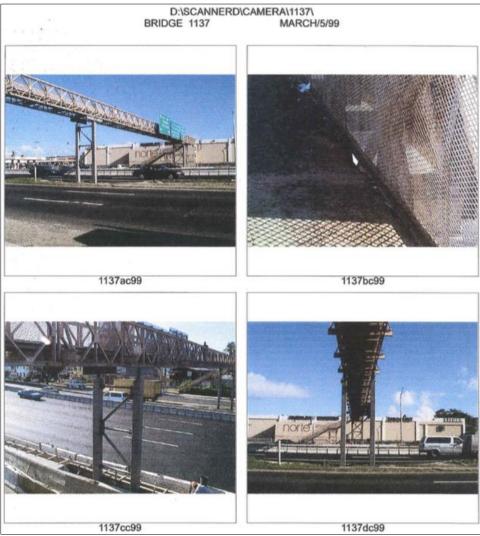


Figure 5.33: Photos taken by PRHTA in 1999 (Source: PRHTA)

5.2.4 Photos Before and After Hurricane Maria

To detect if the bridge suffered any major deformations due to Hurricane Maria, photographs from before and after the hurricane were compared. Examples of these are the comparison that can be made between Figure 5.34 and Figure 5.35, and between Figure 5.36 and Figure 5.37. By the

comparing the photographs, it is appreciated that the bridge experienced lateral deflections in the plastic range.



Figure 5.34: Aerial photo of PB 1137 before Hurricane Maria (April 8, 2016) (Source: Google Earth Pro)



Figure 5.35: Aerial photo of PB 1137 after Hurricane Maria (April 28, 2018) (Source: Google Earth Pro)

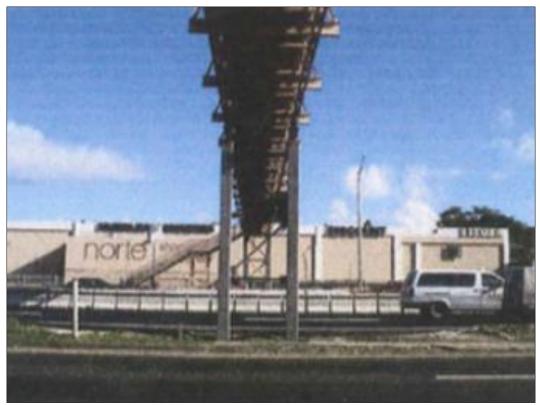


Figure 5.36: Underside of PB 1137 before Hurricane Maria (March 5, 1999) (Source: PRHTA)



Figure 5.37: Underside of PB 1137 after Hurricane Maria (November 3, 2018)

5.2.5 Inspection by PUPR

The inspection by PUPR was conducted by Civil Engineering graduate students Nelson Sotelo and Geoffrey Vega, and undergraduate students Adriana Murati-Núñez, Jonathan Hernández and Gustavo Cruz on November 13, 2018. During the inspection, the weather was sunny. The bridge was closed to pedestrians and there were no traffic signs attached to it.

During the visit, it was evident that the bridge had corrosion problems in many components. Corrosion had caused holes in the walkway, as shown in Figure 5.38 and Figure 5.39. Some transveral elements were missing, as shown in Figure 5.40. (Further details about the inspection of this bridge can be found in Volume 2 of this document).

In terms of possible damages caused by Hurricane Maria, it was evident that the bridge had experienced lateral deflections in the plastic range as evidenced by the curvature in the structure that can be appreciated in Figure 5.41 and Figure 5.42. Although the traffic signs that were attached to the bridge had already been removed, the mounting assembly was still present, as shown in Figure 5.43. It was observed that the location of the mounting assembly coincides with the section of the bridge with larger curvature. Therefore, it is theorized that the lateral deflection on the bridge was partly due to the extreme wind loads on the signs during Hurricane Maria. This theory is furthered studied in Volume 2 of this document.

PRDOT deemed Pedestrian Bridge 1137 as unreliable and in danger of collapsing (ElNuevoDia.com, 2019). Therefore, in March 2019, PB 1137 was removed in sections to be later demolished at another site.



Figure 5.38: Some holes in the steel



Figure 5.39: Original piece with all elements



Figure 5.40: Piece without one element



Figure 5.41: Curvature in deck



Figure 5.42: Underside view of lateral deflection



Figure 5.43: Base of the Traffic Sings

5.3 Pedestrian Bridge 1307

Pedestrian Bridge 1307 (shown in Figure 5.44) was a steel structure constructed in 1968. The bridge was located at coordinates 18° 26' 48.40" N and 66° 02' 41.89" W. This Bailey bridge connected the Luis Lloréns Torres public housing complex at the north with the Villa Palmeras sector at the south, as shown in Figure 5.45. The pedestrian bridge crosses over the Román Baldorioty de Castro Expressway, which has a very high vehicular flow (67,300 ADT with the Truck 4% ADT in 2017). The reader may notice that PB 1307 is a structure very similar to PB 1137, almost identical. They both are Bailey bridges constructed the same year, with each structure located down the road from the other. PB 1307 was also removed by PRDOT because it was highly affected by Hurricane Maria. Still, the PUPR team was able to inspect the structure before its removal.



Figure 5.44: Pedestrian Bridge 1307



Figure 5.45: Location of PB 1307 (Source: Google Earth Pro)

5.3.1 PRHTA Inspection Reports

PRHTA provided inspection reports with the following dates, (full reports are presented in

Appendix E):

- May 15, 2017
- January 24, 2014
- June 30, 2008
- March 14, 2003
- March 12, 2003
- November 17, 2000

- May 8, 1998
- September 24, 1993
- February 28, 1991
- December 3, 1991
- November 17, 1988
- October 23, 1986
- February 2, 1984
- June 18, 1975
- November 13, 1972

Table 5.3 presents the ratings given to the bridge's deck, superstructure, and substructure on two most recent inspections. It can be seen that the bridge maintained a rating of Fair (5) for its major items.

| Table 5.5. I D 1507 Tatings from most recent inspections (Source, I KITTA) | | | | |
|--|------------------|--------------|--|--|
| | Rating | | | |
| Item | January 24, 2014 | May 15, 2017 | | |
| Deck (Item 58) | 5 | 5 | | |
| Superstructure (Item 59) | 5 | 5 | | |
| Substructure (Item 60) | 5 | 5 | | |

Table 5 3: PR 1307 ratings from most recent inspections (Source: PRHTA)

The latest inspection report made the following observations about the deck: "Steel surface with severe corrosion, slight loss of sections and slight perforations on the sides of the surface of the decking plates. Several decking plates have detached from their weld points, large sections have been repaired, although there are sections in poor conditions, several small holes due to corrosion and sections of the welded decking plates that leave small gaps between them." Referring to the chain-link fencing, the report indicated: "Severe corrosion of the security mesh, several sections are detached from their points of support. In the stairways there are vertical fencing posts

detached from their welding supports." superstructure, the report indicates that "" Finally, the report indicates that there is "moderate and severe corrosion on all lower members of the structure. There are perforations with loss of sections. Stairs have severe corrosion and perforations with loss of sections. There are railings that have severe corrosion in the anchors or bases, they have lateral movements."

5.3.2 Plans of the Bridge

PRHTA provided a plan drafted originally in 1976 and revised in 1993, as shown in Figure 5.46. Another set of drawings from 1991 were obtained and shown on Figure 5.47 and Figure 5.48. The orientation of the stairways differs between the 1976 and 1991 drawings. It appears that, at some point, the stairways were modified. This is confirmed with photographic evidence.

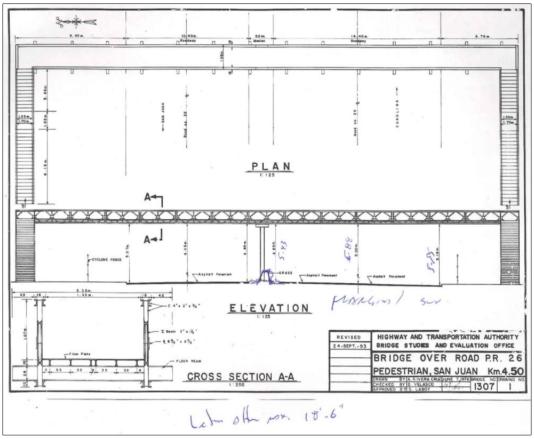


Figure 5.46: PB 1307 plan from 1976 with 1993 revision (Source: PRHTA)

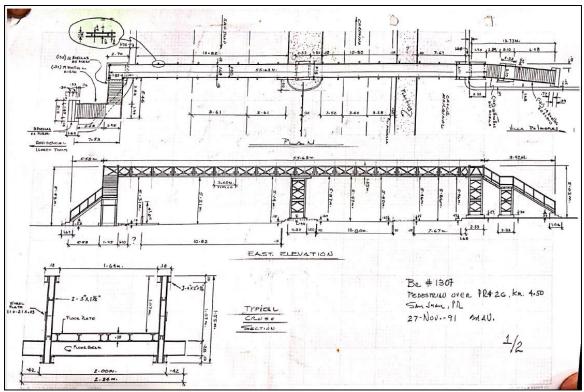


Figure 5.47: PB 1307 plans from 1991 sheet 1 of 2 (Source: PRHTA)

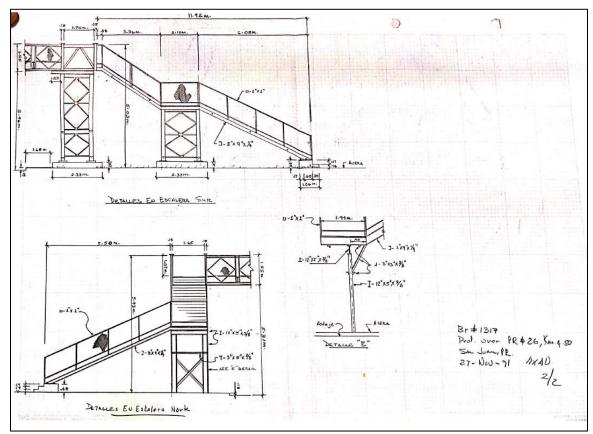


Figure 5.48: PB 1307 plans from 1991 sheet 1 of 2 (Source: PRHTA)

5.3.3 Photos of Inspections by PRHTA

Several photographs were provided by PRHTA. Some undated photographs are shown in Figure 5.49 to Figure 5.52. As explained in the previous section, these photographs show the original orientation of the stairways. It is assumed that these undated photographs are from some point between 1968 and 1990. Figure 5.53 presents a photograph from 1991 which shows the stairways with the modified orientation. Other photographs from 1993 are shown in Figure 5.54 and Figure 5.55. It can be seen in these photos that in 1993, the bridge still did not have chain-link fencing, nor any sign attached to it. A photograph from 2000 (see in Figure 5.56) shows the bridge with traffic signs attached to it, but still with no chain-link fencing.



Figure 5.49: East side view of PB 1307 taken between 1968 and 1990 (Source: PRHTA)



Figure 5.50: Phot of west side view of PB 1307 taken between 1968 and 1990 (Source: PRHTA)



Figure 5.51: Photo of south end of PB 1307 taken between 1968 and 1990 (Source: PRHTA)



Figure 5.52: Underside and north end of PB 1307 taken between 1968 and 1990 (Source: PRHTA)



Figure 5.53: Photo of PB 1307 taken on November 27, 1991 (Source: PRHTA)



Figure 5.54: Photo of deck of PB 1307 taken on September 24, 1993 (Source: PRHTA)



Figure 5.55: Photo of underside of PB 1307 taken on September 24, 1993 (Source: PRHTA)



Figure 5.56: Photo of PB 1307 taken on November 17, 2000 (Source: PRHTA)

5.3.4 Photos Before and After Hurricane Maria

To detect if the bridge suffered any major deformations due to Hurricane Maria, photographs from before and after the hurricane were compared. Examples of these are the comparisons that can be made between Figure 5.57 (taken in 1996) and Figure 5.58 (taken in 2019), and between Figure 5.59 (taken in 1993) and Figure 5.60 (taken in 2019). By the comparing the photographs, it is appreciated that the bridge experienced lateral deflections in the plastic range as evidenced by the curvature exhibited by the deck and the superstructure in the most recent photographs.



Figure 5.57: Deck of PB 1307 before Hurricane Maria (March 18, 1996) (Source: PRHTA)



Figure 5.58: Deck of PB 1307 after Hurricane Maria (February 28, 2019)



Figure 5.59: Underside of PB 1307 before Hurricane Maria (September 24, 1993) (Source: PRHTA)



Figure 5.60: Underside of PB 1307 after Hurricane Maria (February 28, 2019)

5.3.5 Inspection by PUPR

The inspection by PUPR was conducted by Civil Engineering undergraduate students Adriana Murati-Núñez and Jonathan Hernández on February 28, 2019. When the inspection started, the weather was sunny, but it later started raining. The bridge was officially closed to pedestrians, but a hole had been cut through the meshing that was supposed to keep the public out. The traffic signs once attached to the bridge were not present, but the mounting assembly still remained. A neighbor from the area assured that he saw as the bridge "moved from side to side" and as the traffic signs were blown away during Hurricane Maria.

During the inspection, the stairs and deck exhibited corrosion, as shown in Figure 5.61 and Figure 5.62, respectively. It can also be observed in Figure 5.62 that sections of the security messing attached to the guardrail had fallen off. Gaps and holes in the deck were observed as shown in Figure 5.63 and Figure 5.64.

In terms of possible damages caused by Hurricane Maria, PB 1307 exhibited the same damage found on PB 1137, which was a lateral deflection in the plastic range. Although the traffic signs that were attached to the bridge had already been removed or had been blown away, the mounting assembly was still present, as shown in Figure 5.65. It was observed that the location of the mounting assembly coincides with the section of the bridge with larger curvature. Therefore, as with PB 1137, it is theorized that the lateral deflection in PB 1307 was partly due to the extreme wind loads on the signs during Hurricane Maria.

Pedestrian Bridge 1307 was also deemed as unreliable and in danger of collapsing by PRDOT (ElNuevoDia.com, 2019). Therefore, in March 2019, PB 1307 was removed in sections to be later demolished at another site.



Figure 5.61: Corrosion on stairway

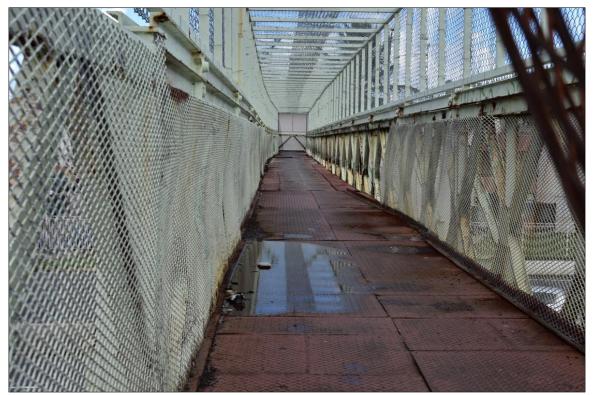


Figure 5.62:Corrsoion on deck and section of guardrail without security meshing



Figure 5.63: Detached plates



Figure 5.64: Hole in plates



Figure 5.65: Lateral deflection at mounting assembly location

5.4 Pedestrian Bridge 2336

Pedestrian Bridge 2336 (shown in Figure 5.66) was constructed in 1994. It is a slab type bridge made of reinforced concrete. Access to the bridge is given by a circular ramp at each end. The bridge located at coordinates 18° 24' 39" N and 66° 01' 43" W. It connects Matienzo Cintron Urbanization and the San Juan School of Sports in the West with the Ramos Antonini Public Housing complex and the Mall of San Juan in the East (see Figure 5.67). The bridge crosses above Jesus T. Piñero Expressway (PR-17), which by 2005 had an ADT of 89,200 and a Truck ADT 5%.



Figure 5.66: Pedestrian Bridge 2336 (Source: Google Earth Pro)



Figure 5.67: Location of PB 2336 (Source: Google Earth Pro)

5.4.1 PRHTA Inspection Reports

PRHTA only had available on inspection report for PB 2336. This report is date April 16, 2014. The full report is included in Appendix F. This report refers to a previous inspection carried out on December 10, 2008. Table 5.4 presents the ratings given to the bridge's deck, superstructure,

and substructure on two most recent inspections. It can be seen that the ratings of the main items remain unchanged.

| Table 5.4: PB 2236 ratings from most recent inspections (Source: PRHTA) | | | |
|---|-------------------|----------------|--|
| | Rating | | |
| Item | December 10, 2008 | April 16, 2014 | |
| Deck (Item 58) | 6 | 6 | |
| Superstructure (Item 59) | 7 | 7 | |
| Substructure (Item 60) | 7 | 7 | |

The latest inspection report made the following observations: "At the present time (04-16-2014) this structure is being reconstructed, construction of additional span at south side by construction of ramp with access to PR-17." It has been determined that the bridge was not being reconstructed, as stated in the inspection report, by examining the photos from the same report and historical aerial photography. It is theorized that merely there was a construction of a new ground level ramp to give access to the circular ramp on the east side. It appears that the bridge structure itself was not modified.

The 2014 inspection report also states: "Fine transverse and longitudinal cracks, exposed aggregates and small spallings at wearing surface some holes at cyclone fence of railings."

5.4.2 Plans of the Bridge

Figure 5.68 and Figure 5.69 reproduce plans of the pedestrian bridge. The plans are dated 1994, but they were copied from the 2014 inspection report.

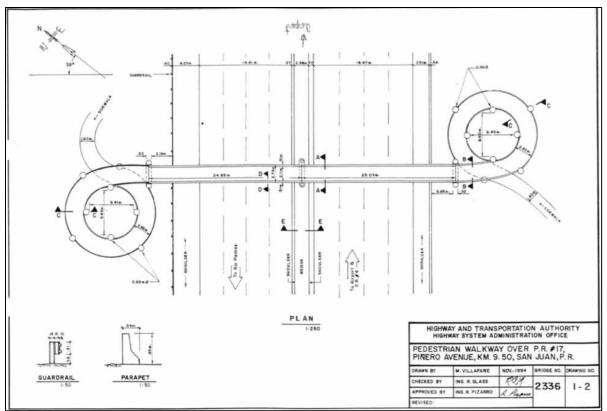


Figure 5.68: PB 2336 plans from 1994 sheet 1 of 2 (Source: PRHTA)

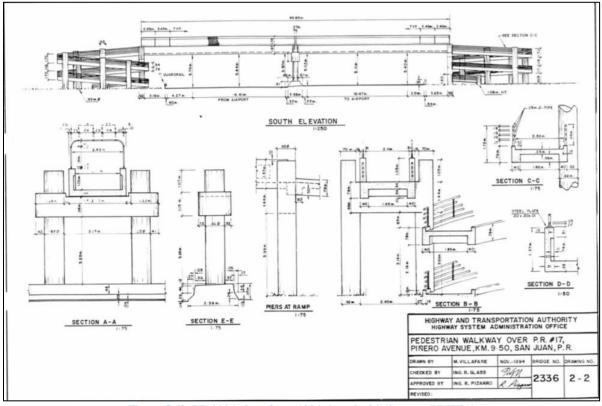


Figure 5.69: PB 2336 plans from 1994 sheet 2 of 2 (Source: PRHTA)

5.4.3 Photos of Inspections by PRHTA

Figure 5.70 presents a set of photographs taken for the inspection report dated April 16, 2014. It can be seen that in 2014, the bridge had traffic signs mounted on it.







2336-Apr.-16-2014-001.jpg

2336-Apr.-16-2014-002.jpg

2336-Apr.-16-2014-003.jpg



2336-Apr.-16-2014-004.jpg



2336-Apr.-16-2014-006.jpg



2336-Apt.-16-2014-007.jpg



2336-Apr.-16-2014-009.jpg



2336-Apr.-16-2014-010.jpg



2336-Apr.-16-2014-012.jpg

Figure 5.70: Photos of the inspection report dated April 14, 2016 (Source: PRHTA)

5.4.4 Photos Before and After Hurricane Maria

To detect if the bridge suffered any major deformations due to Hurricane Maria, photographs from 2014 by PRHTA were compared to pictures taken in 2019. An example of this is the comparison between Figure 5.71 and Figure 5.72. No deformation in the structural elements was detected from the comparison of photographs.



Figure 5.71 Walkway of PB 2336 on April 16, 2014 (Source: PRHTA)



Figure 5.72: Walkway of PB 2336 on April 12, 2019

5.4.5 Inspection by PUPR

The inspection by PUPR was conducted by Civil Engineering undergraduate students Adriana Murati-Núñez and Jonathan Hernández on April 12, 2019. During the inspection, the weather was sunny. The bridge was open to pedestrians.

The bridge itself did not appear to have any problems. In terms of possible damages caused by Hurricane Maria, it was observed that one of the traffic signs mounted on the bridge (the larger sign inside the red rectangle indicated in Figure 5.73) detached at the bottom end from the mounting assembly (see Figure 5.74) It is theorized that the detachment was due to wind induced vibrations that occurred during the hurricane. It was also observed that the smaller airport sign has only one support (see Figure 5.75), and it was oscillating and twisting.



Figure 5.73: Transit Signs in south side of PB 2336 (Source: Google Earth Pro)



Figure 5.74: Transit sign detached from mounting assembly



Figure 5.75: Small airport sign on top of larger sign

6 Undamaged Pedestrian Bridges

As explained in Chapter 4, a total of 21 pedestrian bridges were inspected for this project, out of which four were determined to have suffered some kind of damage due to Hurricane Maria. These four bridges were covered in Chapter 5.

This chapter presents the remaining 17 pedestrian bridges that were inspected but that did not exhibit damages due to the hurricane. Although these bridges did not present damages due to wind loads, they showed problems commonly associated to lack of maintenance.

6.1 Pedestrian Bridge 0626

Pedestrian Bridge 0626 was built in 1959 and is made of reinforced concrete. It has one span and is approximately 91 feet long. The following findings were made during the visual inspection:

- Presence of mold and silt on access ramps (see Figure 6.1)
- Blocked pluvial drains (see Figure 6.2)
- Corrosion on the railings (see Figure 6.3)
- Missing sections of safety meshing (see Figure 6.4)
- Exposed rebars (Figure 6.5)



Figure 6.1: Mold and silt in the access ramps of PB 0626



Figure 6.2: Blocked pluvial drain in PB 0626

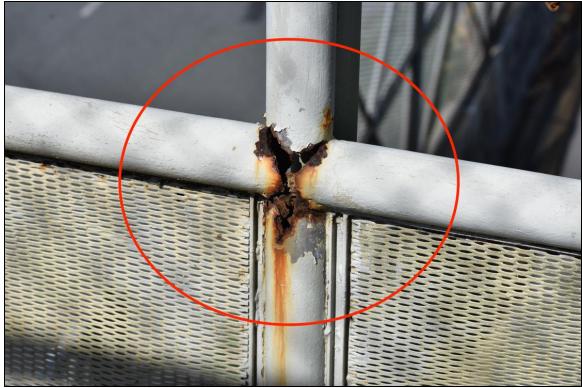


Figure 6.3: Corrosion in the railings of PB 0626



Figure 6.4: Missing section of safety meshing on PB 0626



Figure 6.5: Exposed rebar on PB 0626

6.2 Pedestrian Bridge 0745

Pedestrian Bridge 0745 was built in 1957 and is made of reinforced concrete. It has three spans and is approximately 176 feet long. The following findings were made during the visual inspection:

- Vegetation (see Figure 6.6)
- Blocked pluvial drains (see Figure 6.7)



Figure 6.6: Vegetation in PB 0745



Figure 6.7: Blocked pluvial drains in PB 0745

6.3 Pedestrian Bridge 0748

Pedestrian Bridge 0748 was built in 1958 and is made of reinforced concrete. It has two spans and is approximately 147 feet long. The following findings were made during the visual inspection:

- Broken pluvial drainpipe blocked with vegetation (see Figure 6.8)
- Exposed rebars (see Figure 6.9)



Figure 6.8: Broken drainpipe blocked with vegetation on PB 0748



Figure 6.9: Exposed rebar on PB 0748

6.4 Pedestrian Bridge 1095

Pedestrian Bridge 1095 was built in 1974 and is made of a prestressed concrete beam on top of reinforced concrete columns. It has one span and is approximately 112 feet long. The following findings were made during the visual inspection:

- Presence of mold and silt on the deck (see Figure 6.10)
- Holes in safety fence (see Figure 6.11)



Figure 6.10: Mold and silt on PB 1095



Figure 6.11: Hole in safety fence on PB 1095

6.5 Pedestrian Bridge 1418

Pedestrian Bridge 1418 was built in 1975 and is made of a prestressed concrete beam on top of reinforced concrete columns. It has two spans and is approximately 125 feet long. The following findings were made during the visual inspection

- Mold on the stairways (see Figure 6.12)
- Cracks on concrete (see Figure 6.13)
- Holes in security fence (see Figure 6.14)
- Broken railings (see Figure 6.15)
- Corrosion on railings (see Figure 6.16)
- Exposed steel tendons (see Figure 6.17)



Figure 6.12: Mold on stairways of PB 1418



Figure 6.13: Cracks on PB 1418

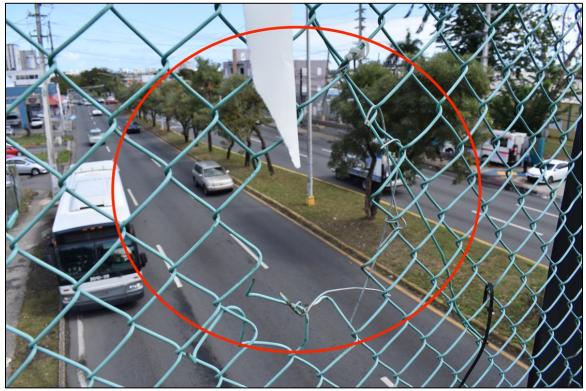


Figure 6.14: Hole in security fence of PB 1418



Figure 6.15: Broken railings on PB 1418



Figure 6.16: Corrosion on railing on PB 1418



Figure 6.17: Exposed steel tendon on PB 1418

6.6 Pedestrian Bridge 1478

Pedestrian Bridge 1478 was built in 1973 and is made of a prestressed concrete beam on top of reinforced concrete columns. It has one span and is approximately 100 feet long. The following findings were made during the visual inspection:

- Exposed rebars (see Figure 6.18)
- Transverse cracks on the deck (see Figure 6.19)



Figure 6.18: Exposed rebars on PB 1478



Figure 6.19: Transversal cracks on deck of PB 1478

6.7 Pedestrian Bridge 1513

Pedestrian Bridge 1513 was built in 1975 and is made of prestressed concrete beam on top of reinforced concrete columns. It one span and is approximately 111 feet long. The following finding was made during the visual inspection:

• Mold and silt on one of the stairways (see Figure 6.20)



Figure 6.20: Mold and silt on PB 1513

6.8 Pedestrian Bridge 1736

Pedestrian Bridge 1736 was built in 1981 and is made of a prestressed concrete beam on top of reinforced concrete columns. It has one span and is approximately 113 feet long. The following findings were made during the visual inspection:

- Exposed rebar (see Figure 6.21)
- Mold and silt on stairways (see Figure 6.22)
- Corrosion of security fencing (see Figure 6.23)
- Cracks on stairways (see Figure 6.24)



Figure 6.21: Exposed rebar on PB 1736



Figure 6.22: Mold and silt on stairway of PB 1736



Figure 6.23: Corrosion of security fencing on PB 1736



Figure 6.24: Crack on stairway of PB 1736

6.9 Pedestrian Bridge 1743

Pedestrian Bridge 1743 was built in 1981 and is made of a prestressed concrete beam resting on top of reinforced concrete columns. It has one span and is approximately 111 feet long. The following findings were made during the visual inspection:

- Mold and silt on the stairways (see Figure 6.25)
- Corrosion of security fencing (see Figure 6.26)
- Vegetation growing on one of the piers (see Figure 6.27)



Figure 6.25: Mold and silt on stairway of PB 1743



Figure 6.26: Corrosion of security fencing of PB 1743



Figure 6.27: Vegetation on pier of PB 1743

6.10 Pedestrian Bridge 1774

Pedestrian Bridge 1774 was built in 1980 and is made of steel superstructure and a reinforced concrete substructure. It has three spans and is approximately 186 feet long. No findings were made during the visual inspection.

6.11 Pedestrian Bridge 1926

Pedestrian Bridge 1926 was built in 1989 and is made of reinforced concrete substructure. It has one span and is approximately 65 feet long. The following findings were made during the visual inspection:

- Electrical cables block the pathway of pedestrians (see Figure 6.28 and Figure 6.29)
- Mold and silt on deck and stairways (see Figure 6.29)



Figure 6.28: Electrical cables passing closely over PB 1926



Figure 6.29: Electrical cables blacking pathway and mold and silt on PB 1926

6.12 Pedestrian Bridge 2087

Pedestrian Bridge 2087 was built in 1979 and is made of a prestressed concrete beam resting on reinforced concrete columns. It has one span and is approximately 131 feet long. The following findings were made during the visual inspection:

- Exposed rebars (see Figure 6.30 and Figure 6.31)
- Corrosion of guardrail and security fencing (see Figure 6.32 and Figure 6.33)



Figure 6.30: Exposed rebar on PB 2087



Figure 6.31: Exposed rebars on PB 2087



Figure 6.32: Corrosion of guardrail on PB 2087



Figure 6.33: Corrosion of security fencing on PB 2087

6.13 Pedestrian Bridge 2355

Pedestrian Bridge 2355 was built in 1995 and is made of reinforced concrete. It has two spans and is approximately 129 feet long. The following finding was made during the visual inspection:

• Holes on security fence (see Figure 6.34)



Figure 6.34: Security Fence with holes, Pedestrian Bridge 2355

6.14 Pedestrian Bridge 2566

Pedestrian Bridge 2566 was built in 1998 and is made of prestressed concrete superstructure with a reinforced concrete substructure. It has one spans and is approximately 142 feet long. The following finding was made during the visual inspection:

- Detachments of security mesh from guardrail (see Figure 6.35)
- Vegetation-covered drains (see Figure 6.36)



Figure 6.35: Detachment of security mesh from guardrail on PB 2566



Figure 6.36: Vegetation covered drains on PB 2566

6.15 Pedestrian Bridge 2665

Pedestrian Bridge 2665 was built in 2000 and is made of a prestressed concrete superstructure and a reinforced concrete substructure. It has a main It has one span and is approximately 84 feet long. No findings were made during the visual inspection.

6.16 Pedestrian Bridge 2682

Pedestrian Bridge 2682 was built in 2000 and is made of steel. It has two spans and is approximately 174 feet long. The following findings were made during the visual inspection:

- Damaged to the façade of and signs of corrosion on the central pier (see Figure 6.37)
- Corrosion on the superstructure (see Figure 6.38)
- Detachment of security mesh (see Figure 6.39)



Figure 6.37: Damage to the facade and sings of corrosion on the center pier of PB 2682

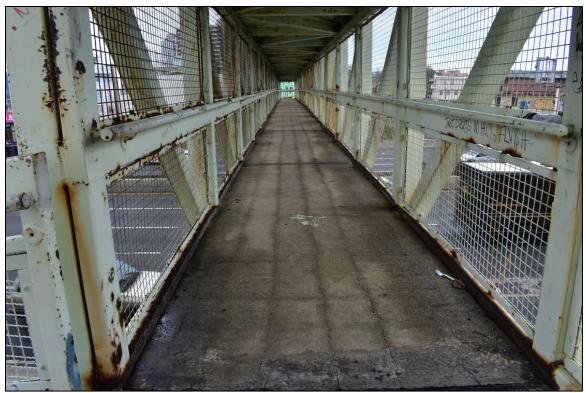


Figure 6.38: Corrosion on the superstructure of PB 2682

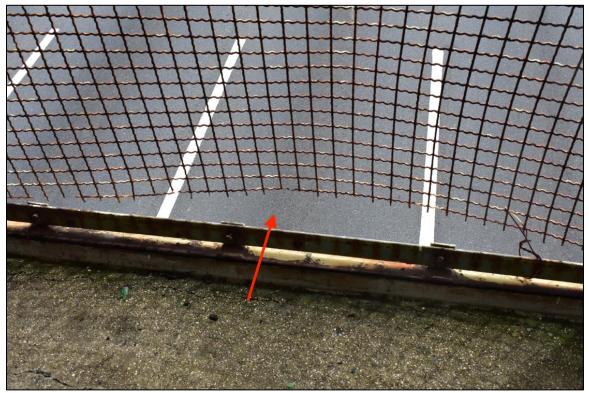


Figure 6.39: Detachment of security mesh on PB 2682

6.17 Pedestrian Bridge 2683

Pedestrian Bridge 2683 was built in 2000 and is made of steel. It has three spans and is approximately 174 feet long. The following findings were made during the visual inspection:

- Corrosion on the superstructure (see Figure 6.40)
- Missing roof panel (see Figure 6.41)
- Detachment of security mesh (see Figure 6.42)



Figure 6.40: Corrosion on the superstructure of PB 2683



Figure 6.41: Missing roof panel on PB 2683



Figure 6.42: Detachment of security mesh on PB 2683

7 Conclusions and Recommendations

Out of the 21 pedestrian bridges inspected for this project, only two experience structural damages. It is apparent that these two bridges were not designed considering that traffic signs were going to be attached to them. Another two bridges were structurally undamaged, but signs attached to them, and their mounting assemblies, exhibited damages that appear to have been caused by the hurricane. The remaining 17 bridges showed no evidence of damages due to the hurricane. Therefore, it is concluded that, in general, pedestrian bridges in the San Juan Metropolitan Area behaved adequately during Hurricane Maria.

The two pedestrian bridges that experienced structural damages and were ultimately removed by PRDOT (PB 1137 and PB 1307) were constructed in 1968, were made of steel trusses, and showed severe deterioration due to corrosion. Prior to Hurricane Maria passing through Puerto Rico, another four bridges made of steel trusses and constructed between 1971 and 1978 had been removed due to deteriorating conditions. The other two pedestrian bridges made of streel trusses and inspected for this project (PB 2682 and PB 2683) were constructed in 2000 and are already showing signs of corrosion, although they did not show any structural damages. When designing a pedestrian bridge, many aspects have to be taken into consideration. It is not suggested here that steel trusses should not be used in Puerto Rico, but that their past performance should be further investigated when this structural system is being considered for new bridges.

Given the findings of this project, the following recommendations are given:

- Attaching signs to pedestrian bridges require the following considerations:
 - If signs are to be attached to existing pedestrian bridges, the structure needs to be adequately reinforced to support additional loads, especially if the

original design of the bridge did not consider signs attached to the structure. This was the case of PB 1137 and PB 1307.

- Systems used to attach signs to pedestrian bridges have to be carefully design, considering support layout and maintenance, in order to avoid damages and disconnection during high wind events, like it happened to PB 0960 and PB 2336.
- After an extreme wind event, preliminary inspections should not only contemplate the main bridge structure, but any flexible elements attached to it, including signs, guardrails, safety meshing, luminaires, and any other element that, if detached, may imply a safety risk to pedestrian or vehicles
- Teams of routine and emergency inspectors should be established by the municipalities in Puerto Rico. Currently, PRHTA Bridge Department does not inspect pedestrian bridges as they have experienced large reduction in personnel due to budget cuts.

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Appendix A Inspections Forms

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A.1 Bridge Load Capacity Summary Form Example

A.2 Critical Finding Memorandum Example

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| Esta condición ha aumentado 10 centímetros dese Algunos de los pilotes expuestos tienen hasta corrosión. | | |
| Se recomienda lo siguiente: | | |
| Reparar y proteger la pilastra #5. | | |
| De no reparase la condición existente es nece determinar si la condición actual es estable, y a qui del puente sería inestable. | | |
| Para información adicional se puede comunicar al que s electrónico a mcoll@act.dtop.gov.pr. | suscribe a la extensión 2900 ó po | or correo |
| 6602/mcb | | |
| ¹ NIVEL DE PRIORIDAD: | | |
| 1- Requiere atención dentro de seis meses (en este caso especific | ar tiempo) | |
| Requiere atención dentro un año. Requiere atención dentro de tres años. | | |
| 4- Requiere atención dentro de tres años, pero se considera meno | s serio, en términos de falla estructural, que | i la |
| prioridad tres. 5- Requiere atención dentro de cinco años. | | |
| c. José Orozco, Director Interino, Área Servicios ingeniería | | |
| | | |
| Autoridad de Carreteras y Transportación • Departamen PO Bax 42007 • San Juan, Puerto Rico 00940-2007 Tel. | | |

A.3 Safety Inspection Report Forms (Initial Inspection) Example

Team Leader: Heriberto González Bridge Inspector: Micky Santiago Bridge Evaluator: Heriberto González Assistants: Juan C. Otero Luis. D. Collazo Driver: Alfredo Erazo Inspection date: Oct.-22-2008 Weather Conditions: Sunny Amount of Time on Inspection: 2.5 Hours Equipment: X Bus or Van _ Underwater _ Ladders _ Snooper х Camera _ Boat Other: Bridge Number: 2921 Road on Structure: State Highway Number or Name: PR-751 Km. 0.01 Road Under Structure: N/A Number or Name: Km. Ident. Plaque: No Num. **IDENTIFICATION** 2. HIGHWAY DISTRICT: 6. Guayama 3. Municipality: Arroyo 4. Place Code: 62192 Bo. Pitahaya Route on Structure: PR-751 Route Under Structure: Km. 0.01 Km. B: 3 State Highway C: 1: Mainline E:0:N.A. B: N.A. C: 0: None of the Below E: 0: N.A. 6. Features Intersected: Waterway Pitahaya Creek Km. Description: 7. Facility Carried: Highway: PR-751 Km. 0.01 Ramp From: 8. Structure Number: 2921 Location: 2 Kms. @ North of Arroyo Town (17°-59'-45", 66°-03'-37") 10. Minimum Vertical Clearance: Over: Under: 19. Bypass Length: Structure over river 20. Toll: No N.A. COMMENTS AND/OR RECOMMENDATIONS: Inspection by: Micky Santiago Revised and Approved by: Heriberto González Bridge Inspector Team Leader

STRUCTURE DATA

27 (a). Year Built: 1992

(b) Year Reconstructed:

28 (a). Lanes On Structure (total): 2

(b) Lanes Under Structure (total): _

32. Total Approach Width: [1] 9.40

| [2] | 8.35 | |
|-----|------|--|
|-----|------|--|

| Position | L. | L. | Median | R. Rdwy. | R. |
|----------|--------|-------|--------|----------|--------|
| | Shldr. | Rdwy. | Shldr. | | Shldr. |
| Up Sta. | 1.18 | 3.56 | | 3.56 | 1.10 |
| [1] | | | | | |
| Down | 1.18 | 3.46 | | 3.46 | 0.25 |
| Sta. [2] | | | | | |

- 33. Median: No open
- 34. Skew: Yes A: 2.43 B: 4.98
- 35. Flare: No C:_ D: _
- 36. Traffic Safety Features:

Bridge railings: meets acceptable standards

Transitions: meets acceptable standards

Approach Guardrail: meets acceptable standards

Approach Guardrail Ends: meets acceptable standards

- 38. Navigation Control: [N] Not waterway
- 39. Navigation Vertical Clearance:
- 40. Navigation Horizontal Clearance:
- 42 Type Service

On Structure [1] Highway

Under Structure: [5] Waterway

43. Structure Materials: [1] Concrete

Type: [19] Culvert (incl. Frame Culvert) 44. Structure Type Approach Materials: --Type: --

R: _

45. Number of Span (main): 2

Up Station: _ 46. Number of Span (appr.) Down Station: _

47. Total Horizontal Clearance (Inventory Route) L: 8.88

48. Length of Maximum Span: 4.91

49. Structure Length: 9.79 front to front abutments

50. Sidewalk L: R:

51. Bridge Roadway Width: 7.02

52. Deck Width (out to out): 8.88

_ Truss or plate girders (inside face to inside face members): _____ m.

Other: _____ m.

96

- 53. Minimum Vertical Clearance Over Bridge Roadway: Unlimited
- 54. Minimum Vertical Underclearances: _
- 55. Minimum Lateral Underclearances on Right: _
- 56. Minimum Lateral Underclearances on Left: _

| JO. DEON | | | | |
|---------------------------|-------------------|-----------------|----------------|-------------|
| 58.1 Wearing Surface: | Material: Steel | Condition: 5 | Thickness | cm. |
| Deterioration: 10 to 25 9 | % Drainage: In: | adequate I | Ponding: Yes | Safety: Yes |
| 58.2 Slab or Plate: Ma | terial: Steel | Condition: 5 | | |
| Cracking: None | | | | |
| Spalling: Top: No | Bottom: No | | | |
| Scaling: Top: No | Bottom: No | | | |
| Efflorescence: No | Exudation: No | Rust Stains: No | Corrosion: | Moderate |
| 58.3 Movement: | Deck to backwall: | cm. Deck to a | approach slab: | cm. |
| | | | | |

| | Material | Cond. Rating | Height Loss (cm) | Joints | Drainage | Alignment | Corrosion | Paint | Safety | Cracking | Spalling | Scaling |
|-------------------|----------|-----------------|------------------------|--------|----------|-----------|-----------|-------|--------|----------|----------|---------|
| 58.4 Curb | N/A | - | | - | - | - | - | - | - | - | - | - |
| 58.5 Median | N/A | | | - | - | - | - | - | - | - | - | - |
| 58.6 Sidewalks | N/A | - | | - | - | - | - | - | - | - | - | - |
| 58.7 Parapets | N/A | - | | - | - | - | - | - | - | - | - | - |
| 58.8 Railing | Steel | 6 | | Good | Good | Good | Moderate | - | Yes | - | - | - |

Functioning: N/A

58.9 Lighting Standards: Material: N/A Condition: N/A 58.10 Utilities:

 Type:
 Size:
 Safety: _

 58.11 Joints:
 Condition: N/A

 Type: N/A
 Functioning: N/A
 Leaking: N/A
 Cracking: N
 Spalling: N
 Armor: No

 58.12 Drains and Scuppers:
 State of the second sec

Material: None Condition: N Functioning: N/A

Comments:

58. DECK

58.1- Ligera y moderada corrosión en superficie, algunas pequeñas perforaciones por corrosión en las tolas.

59. SUPERSTRUCTURE

59.1 Bearing Devices: Type: Fixed/Mov. Out of Plumb: No Paint: None Condition: 5

59.2 Bridge seats, pedestal, grout pads, abutments or pier seat where beams bear directly on conc.

Condition: N Cracking: No Spalling: None Scaling: None

Crushing: No

59.3 Steel beams: N/A Type: N/A

Condition: N/A Corrosion: N/A Paint: N/A

59.4 Concrete: N/A Type: N/A

Condition: N Cracking: No Spalling: Small Scaling: None

59.5 Truss: Ped. Bailey Condition: 5 Paint: Fair Corrosion: Moderate Members: N/A

59.6 Drainage: Type: N/A Condition: N/A Functioning: N/A

59.7 Hinges: Condition: N/A Functioning: N/A Movement: N/A

59.8 Deflection: N/A

59.9 Vibrations: N/A

60.0 SUBSTRUCTURE:

| | | | Material | Cond. Rating | Cracking | Spalling | Scaling | Corrosion | Paint | Movement | Erosion | Undermining |
|-----------------|--------|---------------------|----------|-----------------|----------|----------|---------|-----------|-------|----------|---------|-------------|
| | 60.1.1 | Wingwalls | N/A | N | - | - | - | - | - | - | - | - |
| ments | 60.1.2 | Breast- Backwall | N/A | N | - | - | - | - | - | - | - | - |
| Abut | 60.1.3 | Footing | N/A | N | - | - | - | - | - | - | - | - |
| • | 60.1.4 | Piles | N/A | N | - | - | - | - | | - | - | - |
| | 60.2.1 | Caps | N/A | N | - | - | - | - | - | - | - | - |
| or Non Bents | 60.2.2 | Bracing | N/A | N | - | - | - | - | - | - | - | - |
| 2 m | 60.2.3 | Columns | Steel | 6 | - | - | - | Moderate | - | No | No | No |
| Pile | 60.2.4 | Footing | Concrete | 7 | F | Small | - | - | - | No | No | No |
| | 60.2.5 | Piles | N/A | N | - | - | - | - | - | - | - | - |
| 2 | 60.3.1 | Caps | N/A | N | - | - | - | - | - | - | - | - |
| Rocker Bents | 60.3.2 | Bracing | N/A | N | - | - | - | - | | - | - | - |
| 6 m | 60.3.3 | Piles | N/A | N | - | - | - | - | - | - | - | - |
| | 60.4.1 | Caps | NA | N | - | - | - | - | - | - | - | - |
| Pile | 60.4.2 | Bracing | N/A | N | - | - | - | - | - | | - | - |
| - 60 | 60.4.3 | Piles | N/A | N | - | - | - | - | - | - | - | - |

Comments:

59.5- Varios de los componentes laterales de los "bracing" tienen ligera, moderada corrosión y pérdida de sección,

algunas secciones en el "upper chord" tienen moderada pérdida de sección por corrosión.

61. CHANNEL AND PROTECTION

Condition: N

61.1 Channel Scour: N/A

61.2 Embankment Erosion: N/A

| | | Туре | Material | Condition Rating | Functioning |
|------|---------------------|------|----------|---------------------|-------------|
| 61.3 | Protective Device | | N/A | N | - |
| 61.4 | Fender System | | N/A | N | - |
| 61.5 | Rip Rap | | N/A | N | |
| 61.6 | Spur Dikes, Jetties | | N/A | N | - |

61.7 Obstruction: N/A

61.8 Channel Change: N/A Detrimental: N/A

61.9 Adequate Waterway: N/A

61.10 Surrounding Area: Flooding: N/A if yes explain:

Erosion: N/A if yes explain:

61.11 Location of piers and/or abutment detrimental: N/A

61.12 Other features that may affect structure: Comments:

62. CULVERT AND RETAINING WALL

| Material | Condition Rating | Functioning | Cracking | Spalling | Scaling | Corrosion | Settlement | Alignment | Scour |
|----------|-------------------|-------------------------|---------------|---|---|---|---|---|---|
| N/A | N | - | - | - | - | - | - | - | - |
| N/A | N | - | - | - | - | - | - | - | - |
| N/A | N | - | - | - | - | - | - | - | - |
| N/A | N | - | - | - | - | - | - | - | - |
| | N/A N/A N/A | N/A N N/A N N/A N | N/A N | N/A N N/A N N/A N | N/A N - - - N/A N - - - - N/A N - - - - | N/A N - | N/A N < | N/A N - | N/A N < |

if yes explain:

BRIDGE ENGINEERING OFFICE INFRASTRUCTURE DIRECTORY PRHTA 71. WATER ADEQUACY: N/A N/A 72. APPROACH ROADWAY 72.1 Alignment: 6 72.2 Slab or Pavement Condition: N Material: Other Cracking: No Spalling: None Scaling: None Uneven: No Movement: Approach slab-backwall: No Rough: No Settlement: No Breaking up: No Excessive deformation: No Safety: Hazardous: No Drainage: Inadequate: No Movement: Pavement-approach slab: No Embankment: Condition: N Functioning: Yes Erosion: No Construction: Flimsy: No Integrity impaired: No 72.3 Undesirable Impact: No 72.4 Joints: No Inadequate: N/A Satisfactory Alignment: N/A Type: None 72.5 Guardrail Type: None Material: N/A Functioning: N/A Condition: N Alignment Horizontal: N/A Vertical: N/A Joints Functioning: N/A Safety Securely Attached: N/A Pedestrian Hazards: N/A Comments: 90. INSPECTION DATE: Jan 23, 2014 93. CRITICAL FEATURE INSPECTION DATE Fracture Critical: Underwater: Other Special Inspection: 102. DIRECTION OF TRAFFIC: Highway traffic not carried 106. YEAR RECONSTRUCTED: 107. DECK STRUCTURE TYPE: Steel Plate (includes orthotropic) **108. WEARING SURFACE/PROTECTIVE SYSTEM** Type wearing surface: Other Type Membrane: None Deck protection: None 111. PIER OR ABUTMENT PROTECTION (FOR NAVIGATION): N/A 113. SCOUR CRITICAL BRIDGES: N 116. MINUMUM NAVIGATION VERTICAL CLEARANCE: AUXILIARY ITEMS Material: Alum. Condition: 5 Signs: Type: Route Orientation

| | | | | C | ore Eleme | ents | | | | |
|--------------|----------------------|--------------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| Elem. No. | Elements Description | E n v. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
| | | | | | | | | | | 0 |
| | | | | | | | | | | 0 |
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| | | | | | | | | | | 0 |
| | | | | | | | | | | 0 |

| | Non Core Elements | | | | | | | | | | | | |
|--------------|----------------------|-----|--|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|--|--|
| Elem. No. | Elements Description | Pad | | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity | | |
| | | | | | | | | | | | 0 | | |
| | | | | | | | | | | | 0 | | |
| | | | | | | | | | | | 0 | | |
| | | | | | | | | | | | 0 | | |
| | | | | | | | | | | | 0 | | |
| | | | | | | | | | | | 0 | | |
| | | | | | | | | | | | 0 | | |

| | Smart Flags | | | | | | | | | | | |
|--------------|----------------------|-------|------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|--|
| Elem. No. | Elements Description | P a g | Env. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity | |
| | | | | | | | | | | | 0 | |
| | | | | | | | | | | | 0 | |
| | | | | | | | | | | | 0 | |
| | | | | | | | | | | | 0 | |
| | | | | | | | | | | | 0 | |
| | | | | | | | | | | | 0 | |
| | | | | | | | | | | | 0 | |

A.4 Safety Inspection Report Forms (Routine Inspection)

| | 36 |
|---|--------|
| B. Routine Inspection Report | |
| Team Leader: Arturo Cáceres | |
| Bridge Inspector; Angel T, López | |
| Bridge Evaluator: Arturo Cáceres | |
| Assistants: José R. Vázquez Ramón Rodriguez | |
| Driver: Alfredo Erazo | |
| | |
| Inspection date: 1 OCTUBRE 2010 | |
| Weather Conditions: Sunny | |
| Amount of Time on Inspection: 1.5 Hours | 0 |
| Equipment: X Bus or Van _ Underwater _ Ladders _ Snooper X _ Boat _ Other: | Camera |
| Bridge Number: 2921 | |
| Road on Structure: State Highway Number or Name: PR-751 Km. 0.01 | |
| Road Under Structure: N/A Number or Name: _ Km | |
| Ident. Plaque: No Num | |
| 36. Traffic Safety Features: | |
| Bridge railings: meets acceptable standards | |
| Transitions: meets acceptable standards | |
| Approach Guardrail: meets acceptable standards | |
| Approach Guardrail Ends: meets acceptable standards | |
| 41. Posting: Condition: A (Open) Sign Type: N/A Posting Load: N/A | |
| Comments and/or Recommendations: | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| Inspection by: Angel T. López Revised and Approve | d by: |
| Arturo Cáceres | |
| Bridge Inspector Team | Leader |
| | |
| | |
| | |

| JO. DEON | | | | |
|---------------------------|-------------------|-----------------|----------------|-------------|
| 58.1 Wearing Surface: | Material: Steel | Condition: 5 | Thickness | cm. |
| Deterioration: 10 to 25 9 | % Drainage: In: | adequate I | Ponding: Yes | Safety: Yes |
| 58.2 Slab or Plate: Ma | terial: Steel | Condition: 5 | | |
| Cracking: None | | | | |
| Spalling: Top: No | Bottom: No | | | |
| Scaling: Top: No | Bottom: No | | | |
| Efflorescence: No | Exudation: No | Rust Stains: No | Corrosion: | Moderate |
| 58.3 Movement: | Deck to backwall: | cm. Deck to a | approach slab: | cm. |
| | | | | |

| | Material | Cond. Rating | Height Loss (cm) | Joints | Drainage | Alignment | Corrosion | Paint | Safety | Cracking | Spalling | Scaling |
|-------------------|----------|-----------------|------------------------|--------|----------|-----------|-----------|-------|--------|----------|----------|---------|
| 58.4 Curb | N/A | - | | - | - | - | - | - | - | - | - | - |
| 58.5 Median | N/A | | | - | - | - | - | - | - | - | - | - |
| 58.6 Sidewalks | N/A | - | | - | - | - | - | - | - | - | - | - |
| 58.7 Parapets | N/A | - | | - | - | - | - | - | - | - | - | - |
| 58.8 Railing | Steel | 6 | | Good | Good | Good | Moderate | - | Yes | - | - | - |

Functioning: N/A

58.9 Lighting Standards: Material: N/A Condition: N/A 58.10 Utilities:

Material: None Condition: N Functioning: N/A

Comments:

58. DECK

58.1- Ligera y moderada corrosión en superficie, algunas pequeñas perforaciones por corrosión en las tolas.

59. SUPERSTRUCTURE

59.1 Bearing Devices: Type: Fixed/Mov. Out of Plumb: No Paint: None Condition: 5

59.2 Bridge seats, pedestal, grout pads, abutments or pier seat where beams bear directly on conc.

Condition: N Cracking: No Spalling: None Scaling: None

Crushing: No

59.3 Steel beams: N/A Type: N/A

Condition: N/A Corrosion: N/A Paint: N/A

59.4 Concrete: N/A Type: N/A

Condition: N Cracking: No Spalling: Small Scaling: None

59.5 Truss: Ped. Bailey Condition: 5 Paint: Fair Corrosion: Moderate Members: N/A

59.6 Drainage: Type: N/A Condition: N/A Functioning: N/A

59.7 Hinges: Condition: N/A Functioning: N/A Movement: N/A

59.8 Deflection: N/A

59.9 Vibrations: N/A

60.0 SUBSTRUCTURE:

| | | | Material | Cond. Rating | Cracking | Spalling | Scaling | Corrosion | Paint | Movement | Erosion | Undermining |
|-----------------|--------|---------------------|----------|-----------------|----------|----------|---------|-----------|-------|----------|---------|-------------|
| | 60.1.1 | Wingwalls | N/A | N | - | - | - | - | - | - | - | - |
| ments | 60.1.2 | Breast- Backwall | N/A | N | - | - | - | - | - | - | - | - |
| Abut | 60.1.3 | Footing | N/A | N | - | - | - | - | - | - | - | - |
| • | 60.1.4 | Piles | N/A | N | - | - | - | - | | - | - | - |
| | 60.2.1 | Caps | N/A | N | - | - | - | - | - | - | - | - |
| or Non Bents | 60.2.2 | Bracing | N/A | N | - | - | - | - | - | - | - | - |
| 2 m | 60.2.3 | Columns | Steel | 6 | - | - | - | Moderate | - | No | No | No |
| Pile . | 60.2.4 | Footing | Concrete | 7 | F | Small | - | - | - | No | No | No |
| | 60.2.5 | Piles | N/A | N | - | - | - | - | - | - | - | - |
| 2 | 60.3.1 | Caps | N/A | N | - | - | - | - | - | - | - | - |
| Rocker Bents | 60.3.2 | Bracing | N/A | N | - | - | - | - | | - | - | - |
| 6 m | 60.3.3 | Piles | N/A | N | - | - | - | - | - | - | - | - |
| | 60.4.1 | Caps | NA | N | - | - | - | - | - | - | - | - |
| Pile Bents | 60.4.2 | Bracing | N/A | N | - | - | - | - | - | | - | - |
| - 60 | 60.4.3 | Piles | N/A | N | - | - | - | - | - | - | - | - |

Comments:

59.5- Varios de los componentes laterales de los "bracing" tienen ligera, moderada corrosión y pérdida de sección,

algunas secciones en el "upper chord" tienen moderada pérdida de sección por corrosión.

61. CHANNEL AND PROTECTION

Condition: N

61.1 Channel Scour: N/A

61.2 Embankment Erosion: N/A

| | | Туре | Material | Condition Rating | Functioning |
|------|---------------------|------|----------|---------------------|-------------|
| 61.3 | Protective Device | | N/A | N | - |
| 61.4 | Fender System | | N/A | N | - |
| 61.5 | Rip Rap | | N/A | N | |
| 61.6 | Spur Dikes, Jetties | | N/A | N | - |

61.7 Obstruction: N/A

61.8 Channel Change: N/A Detrimental: N/A

61.9 Adequate Waterway: N/A

61.10 Surrounding Area: Flooding: N/A if yes explain:

Erosion: N/A if yes explain:

61.11 Location of piers and/or abutment detrimental: N/A

61.12 Other features that may affect structure: Comments:

62. CULVERT AND RETAINING WALL

| Material | Condition Rating | Functioning | Cracking | Spalling | Scaling | Corrosion | Settlement | Alignment | Scour |
|----------|-------------------|-------------------------|---------------|---|---|---|---|---|---|
| N/A | N | - | - | - | - | - | - | - | - |
| N/A | N | - | - | - | - | - | - | - | - |
| N/A | N | - | - | - | - | - | - | - | - |
| N/A | N | - | - | - | - | - | - | - | - |
| | N/A N/A N/A | N/A N N/A N N/A N | N/A N | N/A N N/A N N/A N | N/A N - - - N/A N - - - - N/A N - - - - | N/A N - | N/A N < | N/A N - | N/A N < |

if yes explain:

BRIDGE ENGINEERING OFFICE INFRASTRUCTURE DIRECTORY PRHTA 71. WATER ADEQUACY: N/A N/A 72. APPROACH ROADWAY 72.1 Alignment: 6 72.2 Slab or Pavement Condition: N Material: Other Cracking: No Spalling: None Scaling: None Uneven: No Movement: Approach slab-backwall: No Rough: No Settlement: No Breaking up: No Excessive deformation: No Safety: Hazardous: No Drainage: Inadequate: No Movement: Pavement-approach slab: No Embankment: Condition: N Functioning: Yes Erosion: No Construction: Flimsy: No Integrity impaired: No 72.3 Undesirable Impact: No 72.4 Joints: No Inadequate: N/A Satisfactory Alignment: N/A Type: None 72.5 Guardrail Type: None Material: N/A Functioning: N/A Condition: N Alignment Horizontal: N/A Vertical: N/A Joints Functioning: N/A Safety Securely Attached: N/A Pedestrian Hazards: N/A Comments: 90. INSPECTION DATE: Jan 23, 2014 93. CRITICAL FEATURE INSPECTION DATE Fracture Critical: Underwater: Other Special Inspection: 102. DIRECTION OF TRAFFIC: Highway traffic not carried 106. YEAR RECONSTRUCTED: 107. DECK STRUCTURE TYPE: Steel Plate (includes orthotropic) **108. WEARING SURFACE/PROTECTIVE SYSTEM** Type wearing surface: Other Type Membrane: None Deck protection: None 111. PIER OR ABUTMENT PROTECTION (FOR NAVIGATION): N/A 113. SCOUR CRITICAL BRIDGES: N 116. MINUMUM NAVIGATION VERTICAL CLEARANCE: AUXILIARY ITEMS Material: Alum. Condition: 5 Signs: Type: Route Orientation

| | | _ | | C | ore Eleme | ents | | | | |
|--------------|----------------------|-------------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| Elem. No. | Elements Description | P a g | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
| | | | | | | | | | | 0 |
| | | | | | | | | | | 0 |
| | | | | | | | | | | 0 |
| | | | | | | | | | | 0 |
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| | | | | | | | | | | 0 |

| | | _ | _ | | Non | Core Ele | ments | | | | |
|--------------|----------------------|-----|---|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| Elem. No. | Elements Description | Pad | | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |

| | | _ | _ | | | Smart Fla | as | | | 1 | _ |
|--------------|----------------------|-------|------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| Elem. No. | Elements Description | P a g | Env. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
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| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |

A.5 Standards for Photographs of Existing Bridges

Abril 2005

Por:

Manuel Coll Borgo

Estandarización de las Fotos de los Puentes Existentes

A. Alcance y Objetivos

Evaluar la condición y la toma de decisiones sobre un puente existente es una tarea muy usual y típica realizada por los Ingenieros tanto de la Oficina de Ingenieria de Puentes como de otras oficinas de la Agencia. Una de las partes mas útiles del archivo de puentes son las fotografias del puente tomadas en cada inspección que este archivo incluye. Antes de que la tecnología digital estuviera disponible, las fotos que se podian tomar en un puente eran limitadas debido al costo y espacio de almacenamiento disponibles, por lo tanto, la parte visual del puente en el archivo era limitada. Con las cámaras de tecnología digital y la computadora estas barreras se han eliminado.

El objetivo de este documento es ayudar a establecer un patrón estándar de fotografia para los puentes inspeccionados de tal manera que se pueda observar todo el puente mediante las fotos tomadas durante la inspección. Esto, aprovechando lo económico y relativamente sencillo que es tomar y archivar fotos con las cámaras digitales.

B. Procedimiento

El procedimiento descrito a continuación es uno general que se debe aplicar para cada puente individualmente. Básicamente el patrón de fotos va a consistir de dos partes. Primero, se tomarán las fotos generales de tal manera que se puedan ver todas las partes del puente con o sin daños y luego se tomaran fotos más especificas de las áreas donde se observa deterioro y otras partes importantes del puente. El procedimiento se puede describir en tres pasos generales descritos a continuación:

- 1. Se debe documentar en una tabla el número de la foto y la parte del puente que se está fotografiando. Debe haber espacio para poner comentarios, como por ejemplo, dónde se ubicó el fotógrafo para tomar la foto de tal manera que se tome la foto igual en la próxima inspección. Esta debe ir acompañada de un dibujo de planta donde indique donde se tomó cada foto. La tabla básicamente hay que hacerla la primera vez que se estandaricen las fotografías del puente, pero a medida que aparezcan partes deterioradas en el puente y se tomen fotos de esas áreas éstas se deben añadir a este documento. El documento se debe colocar en el archivo y también se debe mantener una copia digital de este documento en el mismo directorio donde se almacenen las fotos.
- 2. Fotos Generales del Puente Se debe incluir por lo menos una foto de cada parte importante del puente. Si se necesitan más fotos para cubrir una parte del puente, esto se debe documentar en la tabla de la parte (1). Las partes principales que se deben incluir típicamente para cada tramo (span) del puente incluyen, entre otras cosas, lo siguiente:
 - Placa de identificación del puente si la tiene.
 - b. Letreros de restricciones de pesos, geometría y pórticos para limitar altura si los incluye el puente
 - c. Superficie de Rodaje o vista superior del tramo. Se deben incluir las losas de entrada del puente (Aproach Slabs).
 - d. Vista Lateral del Tramo (ambos lados), por ejemplo, cuando el puente atraviesa un canal, vista desde aguas arriba y vista desde aguas abajo.
 - e. Vista inferior del tramo con énfasis en la losa y las vigas. Ésta es la más difícil de tomar y por lo general tomará más de una fotografía. Hay que tomar en cuenta que también es la más importante y es bien importante documentar todas las fotos bien para que se tomen iguales en la próxima visita.
 - f. Fotos de las pilastras y sus fundaciones si se ven. Se deben tomar por lo menos dos fotos por pilastra, una de cada lado de la pilastra para poder observar la condición de ésta en su totalidad.
 - g. Fotos de los estribos y asientos (bearings) del puente. En puentes tipicos, esto tomaria al menos tres fotos. Una para cada lado incluyendo vista de la pared lateral (wing wall) y por lo menos una foto donde se vea el estribo de frente y los asientos.
- 3. Fotos Particulares del Puente Si el puente presenta zonas de deterioro y tiene detalles importantes que se deben retratar, estas fotos se deben enumerar y documentar en la tabla de la parte (1) luego de las fotos generales del puente. De esta manera los comentarios del informe de inspección pueden hacer referencia a estas fotos. La tabla debe

documentar bien la localización de la foto para poder identificar bien en otras inspecciones el lugar, sobre todo, por si se hacen reparaciones entre inspecciones.

C. Comentarios Adicionales

Las fotos (c), (d) y (e) de las fotografías generales (parte (2)) deben tomarse para cada tramo (span), pero se debe evaluar para cada puente particular si una foto puede incluir más de un tramo con suficiente claridad. Por ejemplo, en puentes pequeños de dos tramos, a lo mejor una sola foto lateral puede incluir la vista de los dos tramos del puente y de los dos estribos, por lo que se podrian reducir cuatro fotos de las descritas arriba en una sola. De hacerlo así, esto se debe documentar en la descripción de la foto en la tabla de la parte (1).

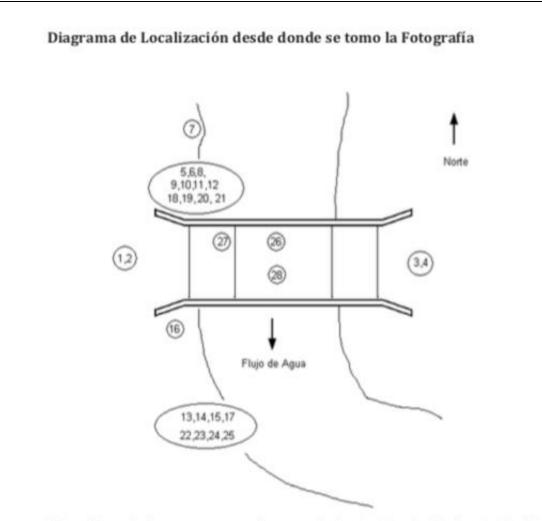
Por otra parte, debido a la geometría y localización de cada puente particular no siempre será posible tomar una foto de las vistas que se describen en la parte (2). En ese caso, se deben tomar una o más fotos en otro ángulo pero de tal manera que se pueda ver lo descrito. No se debe dejar de tomar una foto de una parte del puente a menos que ésta esté debajo del agua.

D. Ejemplo: Puente No. 1496 en Guayanilla

Tabla de Descripción de Fotos

| Foto | Descripción | Comentarios |
|-------|------------------------------|-------------------------------------|
| Fotor | Generales del Puente | |
| # 1 | Losa de entrada lado oeste | |
| # 2 | Superficie de rodaje lado | |
| | oeste | |
| #3 | Losa de entrada lado este | |
| #4 | Superficie de rodaje lado | |
| | este | |
| # 5 | Tramo oeste: | |
| | Vista lateral desde el norte | |
| #6 | Tramo este: | |
| | Vista lateral desde el norte | |
| #7 | Vista aguas arriba del | Aguas arriba del canal del lado nor |
| | puente y el canal | - |
| #8 | Muro lateral norte | |
| | del estribo oeste | |
| #9 | Muro lateral norte | |
| | del estribo este | |
| # 10 | Estribo oeste: vista frontal | |
| # 11 | Estribo este: vista frontal | |
| # 12 | Pilastra: vista desde lado | |
| | oeste | |
| #13 | Pilastra: Vista desde lado | Se tomó la foto desde el lado oeste |
| | este | río, pero en ángulo, de tal manera |
| | | se observe el lado que no se ve e |
| | | foto #13 |
| # 14 | Tramo oeste: | |
| | Vista lateral desde el sur | |
| # 15 | Tramo este: | |
| | Vista lateral desde el sur | |
| # 16 | Muro lateral sur | |
| | del estribo oeste | |
| # 17 | Muro lateral sur | |
| | del estribo este | |
| # 18 | Losa tramo oeste: | |
| # 10 | Vista por debajo | |
| # 19 | Losa tramo este: | |
| # 20 | Vista por debajo | |
| # 20 | Gaviones estribo oeste | |
| # 21 | Gaviones estribo este | |
| # 22 | Detalle de Zapata expuesta | Peter and defense that a set of the |
| # 23 | Muro caído en estribo oeste | Esta condición existía antes de |

| Foto | Descripción | Comentarios |
|-------|--|--|
| Fotos | s Generales del Puente | |
| | | reparación de puente con Gaviones. |
| # 24 | Socavación en Gaviones del estribo este | |
| # 25 | Grieta en muro lateral sur del estribo este | |
| # 26 | Abrasión de la superficie de rodaje Tiro central de losa | La losa se tiró en tres paños. |
| # 27 | Abrasión de la superficie de rodaje Tiro de losa oeste | |
| # 28 | Grietas en tiro central de losa | En los otros tiros también hay grietas pero menos marcadas. |



Nota: Para el diagrama se puede usar el boceto ("as built drawing") del Puente.



Foto #1



Foto #2



Foto #3



Foto #4

A.6 Standard Element Numbering Procedure

Elements in Longitudinal Direction: Elements that run in the direction of traffic such as Main Girders, Beams or stringers shall be numbered from left to right when pointing to the direction of traffic or when pointing to the direction of the increasing kilometer sings when traffic goes both ways.

Elements in Transverse Direction: Elements that run transverse to the direction of traffic such as Abutments Piers or Floor Beams shall be numbered in the direction of traffic or pointing to the direction of the increasing kilometer sings when traffic goes both ways. For example pier #1 will be the first one when entering the bridge, for bridges with one direction of traffic, and in the case of two way traffic pier #1 will have the lesser kilometer point.

A.7 Quality Assurance / Quality Control Forms

INSPECTION REPORT SUMMARY & QC SHEET

BRIDGE:

TEAM LEADER:

INSP. DATE:

1. Inspection Type and Dates:

| NBI | Туре | Performed? (Yes / No / NA) | Freq (MONTHS) | Previous Insp. DATE (MONTH/YEAR) | Next Insp. DATE (MONTH/YEAR) |
|--------------|-----------------------|----------------------------------|------------------|--|------------------------------------|
| ITEM 90 | Routine Inspection | | | | |
| ITEM 93 A | FC Inspection | | | | |
| ITEM 93 B | Underwater Insp. | | | | |
| ITEM 93 C | Other: | | | | |

2. NBI Condition Rating Summary:

| | | Ite | | | Ite | |
|---------------------|------------|---------|------------|------------|---------|-------------|
| | Item 58 | m 59 | Item 60 | Item 61 | m 62 | Item 113 |
| Previous Inspection | | | | | | |
| Current Inspection | | | | | | |

Other Checks: (Y, N, NA)

Review Comments:

_ Scour Critical (items 113 & 60)

- AASHTO Core's & NBI CD consistent
- _ Smart Flags (scour, steel plate,
- fire damage, etc) Channel Profile/Clearance Table
- FC & Underwater Members Tables
- Asphalt Overlay Thickness
- _ Drawings _ Photos
- _ Critical Finding _ Inspector & Team Leader Signature

| Reviewer: | | |
|-----------|-------|---|
| | - | - |

Safety Eng.: _____

INSPECTION REPORT SUMMARY SHEET QUALITY ASSURANCE

BRIDGE: TEAM LEADER: INSP. DATE:

1. Inspection Type and Dates:

| NBI | Туре | Performed? (Yes / No / NA) | Freq (MONTHS) | Previous Insp. DATE (MONTH/YEAR) | Next Insp. DATE (MONTH/YEAR) |
|--------------|-----------------------|----------------------------------|------------------|--|------------------------------------|
| ITEM 90 | Routine Inspection | | | | |
| ITEM 93 A | FC Inspection | | | | |
| ITEM 93 B | Underwater Insp. | | | | |
| ITEM 93 C | Other: | | | | |

2. NBI Condition Rating Summary:

| | ltem 58 | lte m 59 | ltem 60 | ltem 61 | lte m 62 | Item 113 |
|---------------------------------------|------------|----------------|------------|------------|----------------|-------------|
| Previous Inspection | | | | | | |
| Current Inspection Team Leader | | | | | | |
| Current Inspection Safety Engineer | | | | | | |

Other Checks: (Y, N, NA)

Review Comments:

- _ Scour Critical (items 113 & 60) _ AASHTO Core's & NBI CD consistent _ Smart Flags (scour, steel plate,

- _ Channel Profile/Clearance Table _ Channel Profile/Clearance Table _ FC & Underwater Members Tables
- _ Asphalt Overlay Thickness
- _ Drawings

- _ Photos _ Critical Finding _ Inspector & Team Leader Signature

Team Leader:

| Safety | / Eng.: | _ |
|--------|---------|---|
|--------|---------|---|

| Bridge | No. |
|--------|-----|
|--------|-----|

Date:

Rating Engineer/Consultant:

LOAD RATING REPORT

QUALITY CONTROL FORM

| Rating Report Item | Yes/No, NA or Checked |
|--|-----------------------|
| Does report includes data used for rating (Drawings/Field Measurements/NDT's) | |
| Are Dead load calculations presented | |
| Are Live load distribution factors computed/presented | |
| Is Transverse section data and reinforcement presented | |
| Report explains reasons to (or not to) consider deterioration. | |
| Report explains reasons to rate (or not to) Substructure | |
| Report shows spans and explains boundary conditions (support types, continuity) | |
| Design Load / Legal Loads are clearly presented | |
| Verify Input data of model for consistency | |
| Report Includes Load Rating Results: | |
| At inventory level | |
| At Operating level | |
| Legal loads | |
| Verify output data is consistent with report results and with the rating summary sheet report. | |
| Verify items 63 to 66 be reported from summary sheet. | |
| Verify items 41 and 70 are correctly coded in summary sheet. | |
| Comments: | |

Comments:

- Write comments to rating engineer here.
- · Comment example: Section data used is missing in rating report.

Reviewer Name: Reviewer Signature:

| Bridge | No. |
|--------|-----|
|--------|-----|

Date:

Rating Engineer/Consultant:

LOAD RATING REPORT

QUALITY ASURANCE FORM

| Rating Report Item | Yes/No, Comments |
|--|------------------|
| Does report includes data used for rating (Drawings/Field Measurements/NDT's) | |
| Are Dead load calculations presented | |
| Are Live load distribution factors computed/presented | |
| Is Transverse section data and reinforcement presented | |
| Report explains reasons to (or not to) consider deterioration. | |
| Report explains reasons to rate (or not to) Substructure | |
| Report shows spans and explains boundary conditions (support types, continuity) | |
| Design Load / Legal Loads are clearly presented | |
| Verify Input data of model for consistency | |
| Report Includes Load Rating Results: | |
| At inventory level | |
| At Operating level | |
| Legal loads | |
| Verify output data is consistent with report results and with the rating summary sheet report. | |
| Verify items 63 to 66 be reported from summary sheet. | |
| Verify items 41 and 70 are correctly coded in summary sheet. | |
| Comments: | |

Comments:

- Write comments to rating engineer here.
- · Comment example: Section data used is missing in rating report.

Reviewer Name: Reviewer Signature:

Bridge No.

Date:

SCOUR EVALUATION PHASE 1

QUALITY CONTROL FORM

| Scour Evaluation Report Item | Yes/No, N/A or Checked |
|--|------------------------|
| Does report includes project description and location? | |
| Does report includes summary of significant findings? | |
| Does report includes conclusions and recommendations? | |
| Does report includes photos showing exiting conditions? | |
| Does report includes data used for scour evaluation (Drawings/Field Measurements/NDT's)? | |
| Does report includes sources of data collection presented (i.e. H-H report, scour report, soil survey, etc)? | |
| Does report includes stream characteristics? | |
| Does report includes overall stream stability (lateral, vertical, potential response)? | |
| Does report includes abutments characteristics and conditions? | |
| Does report includes piers characteristics and conditions? | |
| Does report includes name of engineers responsible for each discipline, engineer registration numbers, and name of reviewing engineer? | |
| Does report is signed and sealed by a professional engineer? | |
| Verify data presented is consistent with the conclusions and recommendations. | |
| | |

Comments:

Reviewer Name: Reviewer Signature:

Bridge No.

Date:

SCOUR EVALUATION PHASE 2

QUALITY CONTROL FORM

| Scour Evaluation Report Item | Yes/No, N/A or Checked |
|--|------------------------|
| Does report includes summary of significant findings? | |
| Does report includes conclusions and recommendations? | |
| Does H-H report include field survey and cross sections signed and sealed by a surveyor? | |
| Does H-H and Scour report was performed based on Scope of Work guide for H-H report (Appendix A of the SOW)? | |
| Does H-H report include sources of hydrologic data and/or peak flow value? | |
| Does Scour report include a grain size analysis? | |
| Does Scour report recommend at least three (3) countermeasures? | |
| If any, is increase in existing water surface elevation due to countermeasures within limits of the PB # 13 regulation? | |
| Does the scour report include analysis for the Design Scour Flood Event? | |
| Does the scour report include analysis for the Check Scour Flood Event? | |
| Does the scour report include scour results for long term, contraction, local, and total scour? | |
| Does the scour report include plot of bridge foundation elements and computed scour depths? | |
| Does plot of bridge foundation indicate if foundations are known? In the case of deep foundation, does it indicate tips elevation? | |
| Does report includes name of engineers responsible for each discipline, engineer registration numbers, and name of reviewing engineer? | |
| Does report is signed and sealed by a professional engineer? | |
| Verify data presented is consistent with the conclusions and recommendations. | |
| Commente: | |

Comments:

Reviewer Name:

Reviewer Signature:

Bridge No.

Date:

SCOUR EVALUATION PHASE 3

QUALITY CONTROL FORM

| Scour Evaluation Report Item | Yes/No, N/A or Checked |
|--|------------------------|
| Does report includes summary of significant findings? | |
| Does report includes conclusions and recommendations? | |
| Does report includes data for the geotechnical and structural scour assessment (Drawings/Field Measurements/NDT's)? | |
| Are live loads capacities evaluated in accordance with the PRHTA's current load rating guidelines? | |
| Does report includes estimated capacity of each foundation unit under scour conditions defined in Phase 2? | |
| Does report indicates method used to estimate capacity of foundation units for unknown foundations? | |
| Does report includes name of engineers responsible for each discipline, engineer registration numbers, and name of reviewing engineer? | |
| Does report is signed and sealed by a professional engineer? | |
| Verify data presented is consistent with the conclusions and recommendations. | |

Comments:

Reviewer Name:

Reviewer Signature:

Bridge No.

Date:

SCOUR EVALUATION PHASE 4

QUALITY CONTROL FORM

| Scour Evaluation Report Item | Yes/No, N/A or Checked |
|--|------------------------|
| Does report includes summary of significant findings? | |
| Does report includes conclusions and recommendations? | |
| Does report includes POA based on Scour Critical Bridge – POA format? | |
| Does POA include at least three (3) alternate countermeasures? | |
| Does POA include a conceptual plan for recommended alternative countermeasure? | |
| Does report includes name of engineers responsible for each discipline, engineer registration numbers, and name of reviewing engineer? | |
| Does report is signed and sealed by a professional engineer? | |
| Verify data presented is consistent with the conclusions and recommendations. | |

Comments:

Reviewer Name:

Reviewer Signature:

A.8 Scope of Work of Underwater Inspection

SCOPE OF WORK

UNDERWATER INSPECTION

I. PROJECT DESCRIPTION

The purpose of this work is to perform an adequate level of underwater inspections to bridges on marine and freshwater areas in Puerto Rico. An adequate inspection level detects damaged structure members, section loss, timber decay or attack by marine borers, scour, and undermining of footings or concrete walls.

II. GENERAL DESCRIPTION

The Consultant will provide all labor, equipment and materials necessary to complete the inspections and reports.

The bridges that will require an underwater inspection are included in **Appendix A**. For each structure the PRHTA will provide, when available, site descriptions, plans or sketches, previous inspection reports, and access information.

If during the period of contract, any new procedures or regulations regarding Underwater Inspection are added or modified, they shall be added to the work performed by the Consultant with no additional cost for the PRHTA.

III. INSPECTION PERSONAL QUALIFICATIONS AND REQUIREMENTS

- A. Qualification requirements for the Engineer in charge of the inspection and report preparation:
 - 1. Be a registered professional engineer licensed to practice in Puerto Rico.
 - Have a minimum of five years experience in underwater structure inspection assignments.
 - Meet the qualifications of a bridge inspection team leader in accordance with the National Bridge Inspection Standards (NBIS), 23 CFR 650.309(b).
 - Within five years prior to the inspection completion, successfully complete an approved comprehensive bridge inspection training course or bridge inspection refresher training course in accordance with NBIS, 23 CFR 650.309(b) or 650.313(g), respectively.
 - 5. Be on site at all times coordinating the inspections.

B. Qualification requirements for the Diver(s) performing the inspection:

- Meet the qualifications of underwater bridge inspection diver per NBIS 23 CFR 650.309 (b).
- Have all the required licensing to practice commercial diving in Puerto Rico.

IV. CODES, REGULATIONS, STANDARDS AND PROCEDURES

Inspect in accordance with the practices and procedures contained in the following regulations and operational guidelines. Consider the following:

- · Geographical location of the site,
- · Climatic conditions,
- · Tides,
- · Currents,
- · River levels, and
- · Site-specific constraints.

FHWA Guidelines

Bridge Inspector's Reference Manual, October 2002, (Report No. FHWA NHI 03-001 and 03-002) Underwater Inspection of Bridges, (Report No. FHW A-DP-80-1) Recording and Coding Guide for the Structure Inventory and Americal of the Nation's

Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges. (Report No. FHWA-PD-96-001) Manual of Uniform Traffic Control Devices, December 2009 or latest edition.

AASHTO Specifications and Guidelines

Manual for Bridge Evaluation, 2 nd Edition, with current interims.

National Bridge Inspection Standards

Title 23, Code of Federal Regulations, Part 650, subpart C, latest rule applicable.

Commercial Diving Operations

Title 29, Code of Federal Regulations, Part 1910, subpart T, latest revision.

U.S. Coast Guard Navigation Rules

U.S. Coast Guard pamphlet CG-169, May 1, 1977, Rule 27, or latest revision.

Puerto Rico Highway and Transportation Authority Specifications

Standard Specification for Road and Bridge Construction, 2005 edition. Units

Use English units of measurement.

Bridge Member Identification

Use the member identification convention consistent with PRHTA provided documents and the <u>Bridge Safety Inspection Manual</u>, Department of Transportation and Public Works, Puerto Rico Highway and Transportation Authority, July 2011

V. TERMS AND DEFINITIONS

PRHTA - Puerto Rico Highway and Transportation Authority

<u>Consultant</u> - The individual, partnership, firm, corporation, or any acceptable combination thereof, contracting with the PRHTA for performance of the work included in this contract.

<u>Professional Registration</u> - Prepare all work under the direct supervision of the registered professional engineers who are in responsible charge for the services. These Engineers currently registered in Puerto Rico will sign, seal and certify the accuracy of each final work product.

Correspondence - On all correspondence include the PRHTA's assigned Project name and numbers.

Identified Substructure Unit (ISU) - Each structure description lists the substructure members for inspection.

<u>Documents and Reports</u> - Print reports with solid black letters that are double-spaced on white, 8.5-inch x 11-inch bond or "Xerox Copy" paper. Fold larger paper sizes to 8.5 -inch by 11-inch.

Submit a digital copy of final reports complete with color photographs and sketches. Provide this report in Adobe Acrobat (pdf) or other approved format.

Report Copies - Provide (2) hard copies and (1) digital copy.

Covers - Include the following information on the cover of all documents and reports:

- a. Name of document or report.
- b. Date.
- c. Indicate whether draft or final.
- d. Project Name.

e. State and Federal Project Number(s).

f. Prepared for: Puerto Rico Highway and Transportation Authority

g. Prepared by: (Company Name)

<u>Revisions</u> - Modify work products in response to direction from the PRHTA. Consider corrections, adjustments, or modifications necessitated by the review/approval process, which do not substantially affect the scope, complexity, or character of the services, as a normal part of the Consultant services.

<u>Errors and Omissions</u> - Submit the completed work products to the PRHTA. Prior to submitting correct all significant errors or omissions within the work products. The PRHTA will not accept errors or omissions in the work product.

<u>Comment Resolution</u> - Provide a written response with subsequent submittals that address all written and oral PRHTA comments. Clearly explain all changes from previous submittals.

VI. PROJECT WORK TASKS

Structure Inspection

The inspections include but are not limited to the following:

- 1. Identify and list each member of the underwater inspection or Substructure Unit.
- Include a drawing with the UW inspection elements (ISU's) identified at the beginning of the inspection report.
- Document inspection procedure for UW inspection of the bridge and include the procedure as part of the UW inspection report.
- As defined in the FHWA Manual, <u>Underwater Inspection of Bridges</u>: A complete Level I underwater inspection on 100% of ISU's from the mud line to the water surface.
- 5. Identify and document the High Watermark.
- Visually inspect the ISUS's from the High Watermark down to the current water level of the above water portion of ISU's using the diver in the water or inspector from a workboat.

- Assign a Condition Rating to each member according to the FHWA Recording and Coding Guide.
- Identify the AASHTO Core elements and assign condition state quantities. Document the quantities per ISU's and in total.
- As defined in the FHWA Manual, <u>Underwater Inspection of Bridges</u>: A Level II underwater inspection on 10% of ISU's below the water surface.
- 10. As defined in the FHWA Manual, <u>Underwater Inspection of Bridges</u>: A Level III underwater in depth inspection identified in the Scope of Work -or- where deemed necessary by the Engineer in Charge. Immediately notify the PRHTA Contract Manager when a Level III inspection is deemed necessary and the reasons for this determination. Based on the information provided, the PRHTA may require a more detailed inspection.
- 11. Assess the riprap condition at embankments and intermediate piers.
- 12. Document all deficiencies with photos and additional sketches.
- Document typical conditions, with colored photographs and/or sketches including debris build up.
- Locate, describe and quantify all structural defects with colored photographs and/or sketches including damaged members, remaining section, timber decay or attack by marine borers. Use clear water box when necessary.
- 15. Measure all local scour and scour undermining of footings, concrete walls or around piles by width, length and depth. Reference the scour elevations from the as-built drawings and locate in relation to adjacent substructure unit. Measure and locate the maximum water depth at each substructure unit.
- 16. Identify stream or channel bed material.

Documentation and Reporting

Submit draft and final reports for each structure to the PRHTA for review and approval.

VII. CONSULTANT RESPONSIBILITY

General

- Comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the work.
- 2. Establish a safe environment for work site personnel.

Scheduling

Prepare a proposed schedule thirty (30) calendar days prior to starting underwater inspections. Update detailed structure inspection dates and approximate times at least two (2) weeks prior to the actual start date. When schedule revisions arise, immediately submit a revised schedule to the PRHTA Project Manager. No inspection shall begin prior to schedule approval.

Identify the optimal time for underwater inspections. Balance underwater inspection schedule between the low flow and the higher flows produced by and seasonal rains.

Debris Removal

Remove sufficient debris such as trees, brush and other miscellaneous objects that inhibit inspection efforts or cause unsafe conditions.

The Consultant may review existing inspection records to identify debris accumulation history when such data is available.

Work Zone Traffic Control

Use inspection procedures which minimize traffic disruption. Omit traffic control, when underwater inspections are completely off the roadway and behind existing railing. Develop and submit to the PRHTA for approval a TCP, when a TCP is needed.

Provide a safe and expeditious movement of traffic around and through the inspection/work site. Implement the approved TCP and utilize traffic control devices when the underwater inspection affects the movement or safety of traffic or the safety of the work force.

Employ the Traffic Maintenance in accordance to the most recent Manual on Uniform Traffic Control Devices (MUTCD). Obtain an approved and signed TCP prior to submitting or commencing work on PRHTA right of way. During the work maintain a copy of the PRHTA approved traffic control plan on site.

Inspection Coordination

Prior to performing the inspections coordinate the inspection efforts with the PRHTA, all applicable Federal, State, and Local Agencies including law enforcement.

Coordinate activities with Marine Transport Authority managers and schedule inspections to avoid conflicts with ferry vessel (*Aqua Expreso*) arrivals and departures.

Permits

Obtain all permits required for these inspections including, but not limited to, any required by the U.S Army Corps of Engineers, Natural Resources Department and U.S. Coast Guard.

Inspection Procedures

Determine how to safely access each structure. Develop an access plan for each structure. Assess site conditions prior to diving. Document unsafe diving conditions by providing color photos and a written explanation of why the site is unsafe.

Contact the PRHTA Project Manager every regular business day or immediately as necessary with inspection updates. Immediately notify the PRHTA Project Manager or on-site PRHTA Inspector of any significant inspection findings.

Do not block or restrict stream navigation. Provide adequate notification to water traffic during dive operations and provide safety vessel as necessary.

VIII. MANAGEMENT

Schedule(s)

Adhere to the Project Duration to meet the PRHTA's long-term goals and commitments. Expend all effort necessary to stay on schedule.

Project Coordination

Coordinate all project correspondence through or with the concurrence of the PRHTA's Project Manager.

FHWA Communication

The PRHTA shall conduct all project related communications with FHWA.

PRHTA Activities

The PRHTA's Project Manager coordinates the Consultants activities with those of various functional groups within the PRHTA. These groups include Traffic, Safety & Utilities; Highway Construction; Bridge Engineering Office; and Contracts.

For quality assurance purposes, the PRHTA may have an inspector on site for some or all inspection activities.

Release of Information

The PRHTA's Project Manager must approve the release of any project related information.

IX. QUALITY CONTROL PROGRAM

The Quality Control Program shall include the following elements:

- <u>Quality Reviews</u>: The Consultants shall conduct quality reviews to make certain their own organization is in compliance with the requirements cited in this scope of services. Quality reviews shall be conducted to evaluate the adequacy of materials, documentation, processes, procedures, training, guidance, and staffing included in the execution of this contract.
- 2. Quality Control Plan: The Consultant shall include a quality control plan in the technical proposal furnished to the PRHTA. The quality control plan shall detail the procedures, evaluation criteria, and instruction to his organization to assure conformance with the contract. No work shall be initiated until the Consultant's quality control plan is approved by the PRHTA. Significant changes to the work requirements may require the Consultant to revise the quality control plan. It shall be the responsibility of the Consultant to maintain a plan current with the work requirements. The Plan shall include, but not be limited to, the following areas.
 - a. <u>Organization</u> A description is required of the Consultant's quality control organization and its functional relationship to the part of the organization performing the work under the contract. The authority, autonomy, and responsibilities of the quality control organization shall be detailed as well as the names and qualifications of personnel in the quality control organization.
 - <u>Quality Control</u> The Consultants methods use to monitor and assure compliance with the contract requirements for services and products shall be detailed.
 - Quality Assurance The Consultant's methods used to monitor and assure compliance with the quality control requirements shall be detailed.

- d. <u>Quality Records</u> The types of records which will be generated and maintained by the Consultant during the execution of a quality control program shall be outlined.
- e. <u>Control of Subcontractors and Vendors</u> The methods used by the Consultant to control the quality of the subcontractors shall be detailed.
- f. <u>Quality Control Certification</u> An officer of the Consultant firm will be required to sign and seal a certification that will accompany each submittal stating that the drawings, reports, etc. have been prepared and checked in accordance with PRHTA Specifications.

The Consultant shall maintain adequate records of the quality control actions performed (including subcontractors and vendors) in providing services and products under this contract. All records shall indicate the nature and number of observations made, the number and type of deficiencies found, and the corrective actions taken. Deficiencies identified through the consultant's QC and/or QA processes shall be reported to the PRHTA and immediately corrected. Failure to make satisfactory and timely correction to deficiencies, identified by the consultant or by the PRHTA, shall result in withholding of payments, pending satisfactory corrections being made. These records shall be available to the PRHTA upon request during the contract term. All records shall be kept at the primary job site. All records are subject to audit review.

X. BRIDGE INSPECTION REPORTS

Requirements

Submit a concise, complete and separate report for each structure with the following:

- <u>Executive Summary</u> Identify critical findings and locations of significant observations and deficiencies. Provide critical findings and maintenance work recommendations. Include the site time, inspection date, type of dive and safety vessels used, and crew size in a summary table.
- <u>Introduction</u> Include a description of the structural members inspected, inspection method, Inspection access method, traffic control, equipment used, and list the name and date of Agencies and individuals contacted.
- Inspection Findings Include detailed observations and a brief narrative with an overall condition summary for the members inspected. Provide inspection findings for each member.
 - Describe, quantify, and locate all defects.
 - Discuss nondestructive testing methods. Provide all test results.

- Assign a Condition Rating to each member according to the FHWA Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges, (Report No. FHWA-PD-96-001)
- Special Conditions Discuss all hydrological data including debris, scour, streambed material, and water conditions. Discuss access method, traffic control, and nondestructive testing methods used. Provide all test results.
- <u>Sketches</u> Provide plan and elevation views of piers and abutments drawn to scale. On these sketches:
 - Show the streambed spot water depth map; the flow direction; and north arrow.
 - Locate scour holes and points of maximum scour depth with approximate dimensions (length, width and depth below normal streambed); reference the horizontal location to the nearest substructure unit; and vertical distance from the deck to water surface.
 - Locate all deficiencies.
 - Show deck elevation to water surface measurement.
- <u>Typed Daily Dive Reports -</u> Include crew size and crew names, the time the diver's actually spent inspecting the structure, tide table record with time and location references, maximum dive depth at each identified substructure unit, maximum current, visibility, ambient and water temperatures. Provide typed Daily Inspection Logs.
- Color photos documenting the typical member condition and all defects, diver access methods include staging and boat launch areas, substructure members above and below the water, in-place traffic control, rip rap condition, and debris before and after removal.

Draft Reports

Submit all draft Structure Reports complete with color photos and sketches to the Bridge Engineering Office for review. Provide a digital copy and one hard copy.

Final Reports

Submit final Structure Reports complete with color photos, sketches and Engineers seal. Provide a digital copy and two bound paper copies.

XI. METHOD OF COMPENSATION

The method of payment for the Consultant contract will be on per bridge basis. In the sealed <u>Economical Proposal</u> submitted by the Consultant a task breakdown shall be included per bridge.

A lump sum item for debris removal shall be included per bridge. This lump sum shall be negotiated on a per bridge basis when needed.

A.9 Procedure for Conducting Underwater Inspection

The Federal Highway Administration (FHWA), through the National Bridge Inspection Standards (NBIS), and through guidance provided in Technical Advisories, specifies that underwater members shall be inspected to the extent necessary to determine with certainty that their condition has not compromised the structural safety of the bridge. The NBIS recognizes seven types of bridge inspections: routine, initial, damage, in-depth, underwater, special, and fracture critical.

Underwater inspection (UWI) is the evaluation carried out on those bridges where the submerged portions of the structure have a history of at least four feet of water depth throughout the year, or, where the elements are submerged in less than four feet of water, but the evaluation thereof by the method of wading, would be unsafe. A summary of the procedure to perform the UWI is presented below, complying with the NBIS' minimum requirements for the safety and proper inspection of all highway bridges. Also, the UWI procedure must comply with the safety standards set by the Occupational Safety and Health Administration's (OSHA), as well as any other local, federal or more restrictive applicable regulation.

Procedure for Conducting the Underwater Inspection

1. Select the Underwater Inspection Team

Bridge owner must select the UWI team. The UWI team is composed of individuals who meet the requirements for bridge inspection specified by the NBIS and the minimum requirements of diving required by OSHA regulations, for commercial diving operations (29 CFR 1910 Subpart T).

Members of the team that participated in the inspection of this bridge are included in Table I:"Inspection Data" of the "Underwater Bridge Inspection Report", for Bridge No. 0542, prepared by Behar Ybarra & Associates, LLP and Bolt Underwater Services.

2. Site Reconnaissance and Data Collection

Through data collection or an on-site reconnaissance, the dive inspection team leader should:

- a. Determine the approximate water depth, from the drawings or from field measurements.
- b. Determine the approximate velocity of the water.
- c. Perform a hazard analysis.
- d. Do a pre-dive checklist.
- e. Determine if due to the work of inspection, traffic may be affected.
- f. Obtain all data related to the structure to prepare for an inspection.
- g. Prepare an UWI operation plan.
- h. Review previous reports so that they can help to determine the rate of deterioration of the previously observed defects.
- i. Review the previously established measures against scour.

3. Determine the Level of Inspection

Bridge owner and/or UWI team must determine the level of inspection required. Three levels of inspection have been adopted for UWIs, these are summarized below as:

Level I: Visual, tactile inspection.

Level II: Detailed inspection with partial cleaning.

Level III: Highly detailed, inspection with Non-Destructive Testing or Partially Destructive Testing.

A routine UWI normally includes a 100% Level I inspection and a 10% Level II inspection. It may also include additional Level II inspections and Level III inspections, as necessary.

For the evaluation of this bridge, Level I inspection were performed on 100% of the submerged portions of each identified substructure unit. Level II cleanings and Level III inspection were not required for this bridge.

4. Establish the Inspection Frequency

UWI team shall establish the inspection frequency. UWI shall be done at least every 60 months or more frequently if conditions warrant. However, the NBIS has specified certain factors that shall be considered in establishing the frequency of inspections and normal levels of inspection effort.

The UWI for Bridge No. 0542 was completed on August15, 2012. The recommended next UWI should be done no later than 60 months from this date.

5. Bridge Data

a. Bridge Type

Cast in place concrete bridgewith6 spans

b. Location - Refer to Figure 1: "Bridge Location Map".

6. Identify the SubstructureUnit Located in Water

The inspector must recognize the various types of substructure configurations, likely locations and types of commonly encountered defects, and understand the causes and mechanisms of deterioration. The types of structures include pile bents, piers, abutments, caissons, cofferdams and foundation seals, protection devices and culverts. The ISU'sin water, requiring Level I inspection and a 10% of Level II, are presented below:

- a. ISU: Columns 1 and 2 of Bents 2 through 6
- b. ISU: Channel

7. Select the Underwater Inspection Method and Technique

The UWI team shall select the inspection method. There are currently three methods used to conduct UWI, these are:

- a. Wading requires only a probing rod and boots to be effective.
- b. Scuba Diving A method that allows a more detailed examination of substructure conditions at the mudline.
- c. Surface-Supplied Air Diving: A diving mode in which the diver in the water is supplied from the dive location with compressed air for breathing. This method may involve the use of sophisticated diving equipment. This inspection method is well suited when adverse conditions will be encountered.

For this bridge, the Wading and Scuba Diving methods and techniques have been employed.

8. Perform the Routine Inspection and Determine the Deterioration of Structural Material

A routine inspection is a regularly scheduled inspection consisting of observations and measurements needed to determine the physical and functional condition of the bridge, to identify any changes from initial or previously recorded conditions, and to ensure that the structure continues satisfying the present service requirements. The routine inspection may indicate that an in-depth inspection is needed in some areas to confirm the Level I and Level II findings, or to gain additional data so that the structural conditions can be evaluated with certainty.

The UWI team shall determine the deterioration of the structural material, primarily concerned with ratings of the five inventory and appraisal NBI items: Item 60-Substructure, Item 61-Channel and Channel Protection, Item 62-Culverts, Item 71-Waterway Adequacy, and Item 113-Scour Critical Bridges (see section 10).

Deterioration of structural material depends mainly on the type of material. For concrete, there are four main types of deterioration: cracking, scaling, spalling, and chemical attack. Steel foundation elements located in water, can suffer distress in the form of corrosion. Typical problems found in masonry structures include cracking, scaling, and deteriorated pointing. The deterioration of structural materials found on Bridge No. 0542 includes concrete scaling, and spalling with exposed steel; for detailed deficiencies and locations refer to Table 3.

9. Underwater Inspection Equipment and Safety Measures

- a. Vehicular Traffic The vehicular traffic was not impacted during the inspection. Traffic Control Devices and/or Maintenance of Traffic were not needed for UWI of this bridge.
- b. Access The access to many small bridges can be accomplished from the adjacent shore; for larger waterways, a boat will be necessary. In this case the bridge was accessed by the adjacent shore.
- c. Divers Equipment-There are several divers equipment including: exposure suits, commercial scuba equipment, and communication equipment, among others. For the evaluation of this bridge, diving equipment was used. For additional equipment employed in the evaluation of this bridge, refer to Table 1: "Inspection Data".
- d. Inspection Tools There are two types of inspection tools; hand tools and power tools.For this bridge, both types of tools have been used.
- Images-Color photographs taken during the UWI are included in the report, refer to Appendix B.

10. Inspect the Scour

UWI team must evaluate bridge for scour (Refer to NBIS-Item 113-Scour Critical Bridges). UWI team shall accomplished two main objectives in inspecting bridge for scour: To accurately record the present condition of the bridge and the stream and to identify conditions indicative of potential problems with scour and stream stability, for further review and evaluation by others. For bridges that are scour critical, bridge owners must prepare a plan of action to monitor known and potential deficiencies and to address critical findings.

A basic scour investigation should include sounding and probing the channel bottom adjacent to the structure, and determining channel cross sections in the area of the bridge.

For information related to scouring, refer to "Underwater Bridge Inspection Report", for Bridge No. 0542, made by Behar Ybarra & Associates, LLP and Bolt Underwater Services.

11. Critical Findings - Critical findings shall be identified by the UWI team and shall be addressed in a timely manner. The FHWA shall be periodically notified of the actions taken to resolve or monitor critical findings. The underwater inspection team found some incidental issues on Bridge No. 0542. There are:

a. There are struts running between Piles No. 1 & 2, of Bents No. 3 through 5, 6 feet, approximately, below the waterline.

12. Determine the Condition Rating and Core Element Level Condition Rating

UWI team shall determine the condition rating and the core element level condition rating. The NBI rating system assigns a numerical rating from "9" to "0" for substructure units; an element based rating system breaks the substructure units into Commonly Recognized (CoRe) Structural Elements, and determines the quantity of submerged piles that should be classified in various condition states. In general, the condition states range from "1" to "5".

The CoRe Structural Elements are a group of structural elements endorsed by the American Association of State Highway Transportation Officials (AASHTO) as a means of providing a uniform basis for data collection for any bridge management system. Each element is also assigned an environment rating from "1" to "4" representing the aggressiveness of operating practices and the local environment in which the element is located.

For NBIS ratings refer to Table 2: "NBIS Overall Condition Rating" of the "Underwater Bridge Inspection Report", for Bridge No. 0542, made by Behar Ybarra & Associates, LLP and Bolt Underwater Services,¹²

Bridges with fracture critical members and complex bridges shall be inspected according to those

procedures. ²The Procedure for Conducting the Underwater Inspection shall comply with the NBIS and OSHA requirements and any other more restrictive local or federal requirement. The Underwater Inspection Report for Bridge No. 0542, done by Behar Ybarra& Associates, LLP/Bolt Underwater Services on July 2013, as well as, previous inspection's reports for this bridge, provided by the Puerto Rico Highway and Transportation Authority, have been used as reference also.

A.10 Failure Critical Inspection Procedures

Inspection procedures begin with proper advanced planning. Important planning aspects usually based on an office review of the structural plans, fracture critical inspection records, and aerial views of the location, include:

Identify all fracture critical members on both the superstructure and substructure including all
primary gusset plate locations.

 Note the particular members in the structure that may require special field attention, such as built-up tension members composed of few individual pieces.

 Determine equipment necessary to access the fracture critical members, such as a SNOOPER* truck, ladders, bucket truck, boom lift, boat, etc.

 Identify all personal protective equipment necessary to inspect the structure such as hard hat, vest, steel toed boots, flashlight, respirator, or eye protection.

Many structures designed for urban situations with necessary complex alignment geometries
result in FCMs. Proper inspection of these bridges may require closing a traffic lane or require a
night time inspection due to high average daily traffic. Coordinate safe traffic control in advance
with the local District and Area offices and their Safety Review Team.

 Identify and make available any necessary special tools and equipment that may be required in addition to the normal inspection gear.

- Tools for cleaning:
 - Shop-vac to remove loose debris
 - o Brushes both wire and synthetic
 - o Needle scaler
 - o Chipping hammer
 - Compressed air

- Non-destructive test equipment
 - Penetrant Testing Used for crack verification and crack tip location.
 - o Magnetic Particle Testing Used for crack verification and crack tip location
 - ULtrasonic Testing Used to detect subsurface cracks and evaluate remaining thickness at locations that have experienced section loss. All pin-and-hanger connections are evaluated using this method.

The actual field inspection of all FCMs consists of a hands-on visual inspection of all fracture critical members. The inspector notes any:

• Visual cracks and records the crack length, direction, and location, describing what member the crack is in and where on the member the crack is located. Marks are made on the member documenting crack limits and the date crack observations were made. A picture is taken of each crack and placed in the picture report.

• Corrosion resulting in section loss of the fracture critical member, or resulting in pack rust between built-up members. At least one picture showing the worst location of this type of deficiency is placed in the picture report.

· Weld terminations, plug welds, or intersecting welds in a tension area.

- Interrupted back-up bars used for built-up-member fabrication.
- Arc strikes, scars from assembly cables or chains, or other physical damage.

Cross-section changes which may cause a sudden increase in the stress pattern.

• Each type of AASHTO defined fatigue detail and all known problematic details that exists on the member. A picture of each is taken and placed in the picture report.

After the field inspection has been performed, a report is written to document the inspection plan and the current condition of the FCMs. This written report is supplemented by a picture report. The picture report contains an example of each type of fatigue detail, the overall layout of the structure, a picture of every crack, and the location of moderate to severe section loss. The format of the report is as follows:

Methods:

 The equipment used to perform hands on inspection of all FCMs, including required safety equipment.

- Who performed the inspection?
- · How long was required to perform the inspection?
- When the inspection was performed (night/day date).

 Site specific details requiring special attention (fatigue details, problematic details, primary gusset plates, dangerous conditions). List special equipment necessary to clean and verify cracks and quantify section loss, including non-destructive evaluation techniques used.

· Equipment setup and access points

Traffic Control:

- The agency or contract firm that provided the traffic control.
- Lane closure information.
- · Advanced notification time required to obtain ROW access

Structure Description:

- Year Built, Structure Type, Length of Structure
- Structure Orientation.
- Identification of each FCM which are then grouped by the appropriate AASHTO fatigue category.
- · List of fatigue details and problematic welded detail.

Inspection Summary:

- Describe the general condition of the structure.
- List all cracks, on the structure, in a table showing length, location, and direction.
- List all section loss dimension and locations. This value should be recorded as remaining thickness.
- List all pack rust locations that are causing bowing of the built-up members or causing bolts or rivet to shear.

Recommendations:

 Repair and/or preventative maintenance recommendations based on the information shown in the inspection summary.

• Items to be updated on the NBI as a result of the fracture critical inspection. III tem 59 - Superstructure Rating (0-9)

- Item 60 Substructure Rating (0-9)
- Item 92A Fracture Critical Inspection Frequency (0-24)
- Item 93A Fracture Critical Inspection Date (Month/Year)

Appendix A includes an example layout of a typical fracture critical inspection report outlining items that are documented from the inspection.

Maintenance and Preservation

Although rare, routine FC inspections occasionally reveal defects or deterioration in fracture critical elements. In those cases, the inspectors who observe and document the defects work closely with the engineers in the Bridge Maintenance group, located in DOT Bridge Division, to develop appropriate repair procedures and details.

When damage is limited to a few isolated locations, DOT personnel often perform repair work themselves. There are several Certified Bridge Welders on staff in the Bridge Maintenance group who are capable of performing a variety of routine repairs to steel structures. When damage is more substantial or widespread, DOT engineers develop repair procedures and details for use by a qualified steel repair contractor.

Repairing damage to fracture critical elements is given a high priority, particularly when the deterioration appears to be rapidly advancing or when it could potentially lead to failure of the element and consequently to the bridge itself. Routine maintenance is also an important aspect of preserving fracture critical elements. Repairs are typically far more effective and less expensive when a problem is addressed before it advances to the point that the load-carrying capacity of the structure is compromised. For example, cleaning and coating steel that exhibits minor surface corrosion can prevent deterioration from worsening to the point that more substantial structural repairs are necessary.



| | Bridge Number: |
|---------------------|------------------------------|
| Location | |
| Team | |
| Insp. Date | |
| Previous Insp. Date | |
| | Structure Type and Materials |
| Number of Spans | |
| Main Span Material | |
| Deck Protection | |
| | |
| Structure Length | |
| Structure Width | |
| | |
| Material | Deck |
| Deterioration | |
| | |
| Drainage Safety | |
| Sujety | |
| | Slab or Plate |
| Material | |
| Condition | |
| Corrosion | |
| | Cumpetrustura |
| Туре | Superstructure |
| Paint | |
| Condition | |

| Туре | Steel beams |
|-----------|-------------|
| Condition | |
| Corrosion | |
| Paint | |
| | Concrete |
| Туре | |
| Condition | |
| Cracking | |
| | Truss |
| Paint | |
| Corrosion | |
| Members | |
| Comments | |
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Appendix C Inspection by PRHTA of PB 0960

C.1 April 15, 2014

| 1. Inspectio | Tune | Performed? | | Previous Insp. DATE | Next Insp. DAT | |
|--------------|--|-------------|--------|-------------------------|-------------------------|--|
| ITEM 90 | Type Routine Inspectio | (Yes/No/NA) | 48 | (MONTH/YEAR) 12/9/08 | (MONTH/YEAR) 4/15/18 | |
| ITEM 93 A | FC Inspection | N | - | - | | |
| ITEM 93 B | Underwater Insp | N | - | | | |
| ITEM 93 C | Other: | N | - | - | ~ | |
| Current Ins | | 5 4 | 5 | NN | N | |
| Other Chec | bection ks: (Y, N, NA) ical (items 113 & 6 | | Review | V V Comments: | N | |

| INSPECTION ncy 91: 48 months Inspection Date 90: 4/15/2014 Next Inspection: 04/15/20 quency 92A: NA FC Inspection Date 93A: NA Next FC Inspection: NA squency 92B: NA UW Inspection Date 93B: NA Next UW Inspection: NA usency 92C: NA SI Date 93C: NA Next SI: NA it Frequency: 48 months Element Inspection Date: 01/01/1901 Next Elem. Insp. Due: 01/01/190 REEHighway 100: 2 On Non-Interstate STRAParallel Structure 101: Unknown (NBI) |
|--|
| quency 92A: NA FC Inspection Date 93A: NA Next FC Inspection: NA equency 92B: NA UW Inspection Date 93B: NA Next UW Inspection: NA uency 92C: NA SI Date 93C: NA Next SI: NA It Frequency: 48 months Element Inspection Date: 01/01/1901 Next Elem. Insp. Due: 01/01/19 |
| equency 928: NA UW Inspection Date 938: NA Next UW Inspection: NA uency 92C: NA SI Date 93C: NA Next SI: NA It Frequency: 48 months Element Inspection Date: 01/01/1901 Next Elem. Insp. Due: 01/01/190 CLASSIFICATION |
| uency 92C: NA SI Date 93C: NA Next SI: NA It Frequency: 48 months Element Inspection Date: 01/01/1901 Next Elem. Insp. Due: 01/01/19 CLASSIFICATION |
| at Frequency: 48 months Element Inspection Date: 01/01/1901 Next Elem. Insp. Due: 01/01/19 CLASSIFICATION |
| CLASSIFICATION |
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| |
| tion of Traffic 102: 0 Not hwy traffic Temporary Structure 103: Not Applicable (P) |
| way System 104: 0 Not on NHS NBIS Length 112: Unknown (NBi) Facility 20: 3 On free road Functional Class 26: 12 Urban Fwy/Expwy |
| Historical Significance 37: Not Applicable (P) |
| Owner 22: -1 Unknown (P) Custodian 21: -1 Unknown (P) |
| obaodaan zi, -i onaiotti) (r) |
| CONDITION 58: 5 Fair Super 59: 4 Poor Sub 60: 5 Fair |
| ert 62: N N/A (NBI) Channel/Channel Protection 61: N N/A (NBI) |
| |
| LOAD RATING AND POSTING |
| ventory Rating Method 65: Unknown (NBI) Operating Rating Method 63:Unknown (NBI) |
| ventory Rating 66: MS- 6 Operating Rating 64: MS-0.6 esign Load 31: 7 Pedestrian Posting 70: Unknown (NBI) |
| sting status 41: Not Applicable (P) |
| |
| APPRAISAL |
| Ige Rail 36A: N N/A or not required Approach Rail 36C: N N/A or not require nsition 36B: N N/A or not required Approach Rail Ends 36D: N N/A or not require |
| Evaluation 67: N Deck Geometry 68: N Not applicable (N |
| Ierclearance, Vertical and Horizontal 69: 4 Tolerable |
| terway Adequacy 71: N Not applicable Approach Alignment 72: Not Applicable ur Critical 113: Not Applicable (P) |
| |
| PROPOSED IMPROVEMENTS |
| tge Cost 94: \$ 0 Type of Work 75: 35 Rehabilitate-ger adway Cost 95: \$ 0 Length of Improvment 76: 00.00 m |
| al Cost 96: \$ 42,115 Future ADT 114: 216,469 |
| r of Cost Estimate 97: 2014 Year of Future ADT 115: 2020 |
| NAVIGATION DATA gation Control 38: Unknown (NBI) |
| cal Clearance 39: Horizontal Clearance 40: |
| Protection 111: Not Applicable (P) Lift Bridge Vertical Clearance 116: |
| |

| YourState Department of Transportation | 8 1 | Bureau of Bridges and Structu Bridge Maintenar |
|---|--|---|
| | Bridge Inspection Report | |
| PAST INSPECTION | | |
| Inspection Date: 04/15/2014 | Type: 1 Regular NBI | |
| Inspector: -1 | Pontis User Key: Pontis - Pontis Poi | |
| Scope: | | |
| NBI: Other: | Element: | |
| Underwater: Fracture Cr | itical: | |
| INSPECTION NOTES | | |
| RAILINGS. RAMPS RAILINGS WITH BR WITH EXPOSED REINFORCED STEEL | S. HOLES AND MUCH VEGETATION ALONG THE WE OKEN SECTIONS FROM SUPPORTS AND MOVEME DUE TO TRAFFIC IMPACT AT BEAMS OF SECOND RSIBLE LANE. MEDIUM HORIZONTAL CRACK AT PIE | ENT. LARGE SPALLINGS SPAN OVER ROUTE |
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| INSPECTOR WORK CANDIDATES | | |
| INSPECTOR WORK CANDIDATES | | |
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| NSP002_Inspect_Report_Metric | | |

| PUERTO RICO HIGHWAY AND TRANSPORTATION AUTHORITY BRIDGE ENGINEERING OFFICE |
|--|
| Team Leader: Arturo Cáceres Bridge Inspector: Micky Santiago Bridge Evaluator: Arturo Cáceres Assistants: John Dávila |
| Weather Conditions: Sunny Amount of Time on Inspection: 0.5 Hours Equipment: X Bus or Van _ Underwater _ Ladders _ Snooper X Camera _ Boat _ Other: Bridge Number: 0960 |
| Road on Structure: N/A Number or Name: _ Km Road Under Structure: State Highway Number or Name: PR-18 Km. 1.7 Ident. Plaque: No Num 36. Traffic Safety Features: Bridge railings: not applicable or safety not reuired Transitions: not applicable or safety not reuired Approach Guardrail: not applicable or safety not reuired Approach Guardrail Ends: not applicable or safety not reuired 41. Posting: Condition: A - Open Sign Type: _ Posting Load: _ COMMENTS AND/OR RECOMMENDATIONS: Comments and |
| Inspection by: Micky Santiago Bridge Inspector BR-0960 |

| 58. DECK | | | | | | | | | | | | |
|-------------------|------------|-----------------|------------------------|----------|-------------|--------------|------------|----------|----------|------------|------------|-------------|
| 58.1 Weari | ng Surfa | ce: Mat | erial: C | oncrete | • | Cond | ition: 5 | | Thickr | ness | cm. | |
| Deterioratio | on: 0 to 1 | 0 % | Dra | ainage: | Adequate | • | Ponding | : No | | Safety: | Yes | |
| 58.2 Slab o | or Plate: | Materia | I: Conci | rete | Cor | ndition: 6 | | | | | | |
| Cracking: F | ine (0.0 t | o 0.5 m | m) | | | | | | | | | |
| Spalling: T | op: Smal | l Bot | tom: No | D | | | | | | | | |
| Scaling: T | op: Light | Bot | tom: No | C | | | | | | | | |
| Efflorescen | ce: No | Exu | dation: | No R | ust Stains: | Yes | Corrosic | n: Mo | derate | | | |
| 58.3 Mover | nent: | Dec | k to ba | ckwall: | cm. | Deck | to approac | h slab | | cm. | | |
| | Material | Cond. Rating | Height Loss (cm) | Joints | Drainage | Alignment | Corrosion | Paint | Safety | Cracking | Spalling | Scaling |
| 58.4 Curb | N/A | | | | - | | | - | | | | - |
| 58.5 Median | N/A | | | | - | | - | - | | - | | |
| 58.6 Sidewalks | N/A | | | - | | | | - | | - | | |
| 58.7 Parapets | N/A | | | - | | | - | - | | - | | |
| 58.8 Railing | Steel | 4 | | - | Good | Poor | - | - | No | - | | |
| 58.9 Lighti | ng Stand | lards: N | /aterial | N/A | Cor | ndition: N/A | | Functio | oning: N | 1/A | | |
| 58.10 Utilit | | | | | | | | r unou | shing. I | | | |
| Type: | | Size | Ð: | | Safe | ety: _ | | | | | | |
| Туре: | | Size | Ð: | | Safe | ety: _ | | | | | | |
| Type: | | Size | Ð: | | Safe | ety: _ | | | | | | |
| 58.11 Joint | s: Cor | dition: | N/A | | | | | | | | | |
| Type: Expa | nsion | Fun | ctioning |): No | Lea | king: N/A | Cracking | g: N | Spallir | ng: N | Armor: N | No |
| Type: N/A | Fun | ctioning | : N/A | Le | eaking: N// | A Crack | ing: N | Spallin | g: N | Armor: | No | |
| 58.12 Drain | ns and S | cupper | s: | | | | | | | | | |
| Material: Of | ther Con | dition: N | I Fur | nctionin | ig: N/A | | | | | | | |
| Comments | : | | | | | | | | | | | |
| 58.1- Super | | | | | | | | | 55 | | | |
| de acceso r | | | | | | | | | | e impedido | os. Hueco | os en la |
| superfice so | | | | | | | | | | | | |
| 58.8- "Railir | ng" en ar | ea de la | s rampa | as con s | secciones | partidas de | e sus base | es e inc | linadas | hacia el i | nterior de | e la rampa, |
| mucha vege | etación s | obre el ' | 'railing". | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

PUERTO RICO HIGHWAY AND TRANSPORTATION AUTHORITY BRIDGE ENGINEERING OFFICE 59. SUPERSTRUCTURE Out of Plumb: No 59.1 Bearing Devices: Type: Fixed/Mov. Paint: None Condition: 6 59.2 Bridge seats, pedestal, grout pads, abutments or pier seat where beams bear directly on conc. Condition: 6 Cracking: No Spalling: None Scaling: None Crushing: No 59.3 Steel beams: N/A Type: N/A Condition: N Corrosion: None Paint: None 59.4 Concrete: T-beams Type: Cont. Condition: 4 Cracking: Medium (0.5 to 1.0 mm) Spalling: Large Scaling: None 59.5 Truss: N/A Paint: None Corrosion: None Members: N/A 59.6 Drainage: Type: Condition: N Functioning: No 59.7 Hinges: Condition: N Functioning: N/A Movement: N/A 59.8 Deflection: Normal 59.9 Vibrations: Minimal 60.0 SUBSTRUCTURE: Cond Material Rating Cracking Spalling Scaling Corrosion Paint Movement Erosion Undermining Wingwalls Ν 60.1.1 N/A _ _ _ -Abutments Breast-60.1.2 Concrete 5 Μ Small L ---Fair No No No Backwall 60.1.3 Footing N/A N -------------------------60.1.4 Piles N/A N ---60.2.1 Caps Concrete 5 F Small L ---No No No Piers or Non Pile Bents 60.2.2 Bracing N/A N ---------------------60.2.3 Columns Concrete 6 F Small L ---No No No ---60.2.4 Footing N/A Ν -----------------------

60.2- Grieta mediana horizontal en "cap" de pilastra lado este.

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N

Ν

N

N

N

N

N

_

59.4- Vigas sobre ruta @ Caguas y carril reversible impactadas, "spallings" grandes y mucho acero expuesto en vigas "span" #2 (sobre carril reversible), otros "spallings" en vigas sobre carriles @ Caguas, fuertes impactos, "spallings" y

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60.2.5

60.3.1

60.3.2

60.3.3

60.4.1

60.4.2

60.4.3

acero expuesto.

Comments:

Rocker Bents

Pile Bents Piles

Caps

Piles

Caps

Piles

Bracing

Bracing

61. CHANNEL AND PROTECTION Condition: N

61.1 Channel Scour: N/A

61.2 Embankment Erosion: N/A

| | | Туре | Material | Condition Rating | Functioning |
|------|---------------------|-------|----------|---------------------|-------------|
| 61.3 | Protective Device | 11.00 | N/A | N | - |
| 61.4 | Fender System | | N/A | N | |
| 61.5 | Rip Rap | | N/A | N | |
| 61.6 | Spur Dikes, Jetties | | N/A | N | |

61.7 Obstruction: N/A

61.8 Channel Change: N/A Detrimental: N/A

61.9 Adequate Waterway: N/A

61.10 Surrounding Area: Flooding: N/A if yes explain:

> Erosion: N/A if yes explain:

61.11 Location of piers and/or abutment detrimental: N/A

61.12 Other features that may affect structure:

Comments:

62. CULVERT AND RETAINING WALL

| | Material | Condition Rating | Functioning | Cracking | Spalling | Scaling | Corrosion | Settlement | Alignment | Scour |
|---------------------|----------|------------------|-------------|----------|----------|---------|-----------|------------|-----------|-------|
| 62.1 Barrel | N/A | N | | | | | | | | |
| 62.2 Head Walls | N/A | N | | | - | | - | - | | |
| 62.3 Cut-off wall | N/A | N | | | | | | | | |
| 62.4 Retaining wall | N/A | N | | | | | | | | |

if yes explain:

Comments:

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| | PUERTO R | | | ANSPORTATION AUTHORITY RING OFFICE |
|--|--|-------------------|-------------------------------|---------------------------------------|
| 71. WATER AD | EQUACY: | N/A | N/A | |
| 72. APPROACE | ROADWAY | | | |
| 72.1 Alignment | t: 6 | | | |
| 72.2 Slab or Pa | vement | Condition: N | Material: Other | r |
| Cracking: I | No | | Spalling: None | Scaling: None Uneven: No |
| Rough: No | Settlem | ent: No Moven | nent: Approach s | slab-backwall: No Breaking up: No |
| Excessive | deformation: No | | | |
| Safety: | Hazardo | ous: No | | |
| Drainage: | Inadequ | ate: No | | |
| Movemen | t: Paveme | ent-approach sl | ab: No | |
| Embankm | ent: Condition: | N Function | oning: Yes | Erosion: No |
| Construct | ion: Flimsy: No | Integri | ty impaired: No | |
| 72.3 Undesirat | ole Impact: No | | | |
| 72.4 Joints: N | o Type: N | one Inadeo | uate: N/A | Satisfactory Alignment: N/A |
| 72.5 Guardrail | Type: None | Material: N/A | Function | oning: N/A |
| Conditio | 5 | ent Horizontal: N | | |
| | nctioning: N/A | Safety Securel | ly Attached: N/A | Pedestrian Hazards: N/A |
| Comments: | | | | |
| 93. CRITICAL Fracture (Underwar Other Spi 102. DIRECTIC 106. YEAR REC 107. DECK STI | ter: ecial Inspection: ON OF TRAFFIC: CONSTRUCTED RUCTURE TYPE | Highway traffi | ic not carried st-in-Place | |
| 108. WEARING | SURFACE/PRO | DTECTIVE SYS | STEM | |
| | ing surface: Con | crete | | |
| | brane: None | | | |
| | ection: None | | | |
| | ABUTMENT PRO | | R NAVIGATION | N): N/A |
| | RITICAL BRIDG | | | |
| | NAVIGATION | VERTICAL CLI | EARANCE | |
| AUXILIARY ITE | | | 12121 (K. 191 W. 1994) | |
| Signs: | Type: Route Ori | entation | Material: Alum | . Condition: 6 |
| | Type: N/A | | | |
| BR-0960 | | | | |

RATING ITEM 58 TO 60:

N: Not applicable

9: Excellent Condition

8: Very Good Condition: no problem noted.

7: Good Condition: some minor problems.

6: Satisfactory Condition: structural element show some minor deterioration.

5: Fair Condition: all primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.

4: Poor condition: advanced section loss, deterioration, spalling, or scour.

3: Serious condition: loss of section, deterioration, spalling, or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.

2: Critical condition: advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may

be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.

1: "Imminent" failure condition: major deterioration or section loss present in critical structural components or obvious vertical or

horizontal movement affecting structure stability. Bridge is closed

0: Failed condition: out of service: beyond corrective action.

RATING ITEM 61:

N: Not applicable. Use when bridge is not over a waterway (channel)

9: There are no noticeable noteworthy deficiencies which affect the condition of the channel

8: Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition.

7: Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift.

6: Bank is beginning to slump. River control devices and embankment protection have widespread minor damage. There is minor stream bed movement evident. Debris is restricting the channel slightly.

5: Bank protection is being eroded. River control devices and/or embankment have major damage. Trees and brush restrict the channel.

4: Bank and embankment protection is severely undermined. River control devices have severe damage. Large deposits of debris are in the channel.

3: Bank protection has failed. River control devices have been destroyed. Stream bed aggradations, degradation, or lateral

movement has changed the channel to now threaten the bridge and/or approach roadway.

2: The channel has changed to the extent the bridge is near a state of collapse.

1: Bridge closed because of channel failure. Corrective action may put back in light service.

0: Bridge closed because of channel failure. Replacement necessary.

RATING ITEM 62:

N: Not applicable. Use if structure is not a culvert.

9: No deficiencies.

8: No noticeable or noteworthy deficiencies which affect the condition of the culvert. Insignificant scrape marks caused by drift.

7: Shrinkage cracks, light scaling, and insignificant spalling which does not expose reinforcing steel. Insignificant damage caused by drift with no misalignment and not requiring corrective action. Some minor scouring has occurred near curtain walls, wingwalls, or pipes. Metal culverts have a smooth symmetrical curvature with superficial corrosion and no pitting.

6: Deterioration or initial disintegration, minor chloride contamination, cracking with some leaching, or spalls on concrete or masonry walls and slabs. Local minor scouring at curtain walls, wingwalls, or pipes. Metal culverts have a smooth curvature, non-symmetrical shape, significant corrosion, or moderate pitting.

5: Moderate to major deterioration or disintegration, extensive cracking and leaching, or spalls on concrete or masonry walls and slabs. Minor settlement or misalignment. Noticeable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection in one section, significant corrosion, or deep pitting.

4: Large spalls, heavy scaling, wide cracks, considerable efflorescence, or opened construction joint permitting loss of backfill.

Considerable settlement or misalignment. Considerable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection throughout, extensive corrosion or deep pitting.

3: Any condition described in Code 4 but which is excessive in scope. Severe movement or differential settlement of the segments, or loss of fill. Holes may exist in walls or slabs. Integral wingwalls nearly severed from culvert. Severe scour or erosion at curtain walls, wingwalls, or pipes. Metal culverts have extreme distortion and deflection in one section, extensive corrosion, or deep pitting with scattered perforations.

2: Integral wingwalls collapsed severe settlement of roadway due to loss of fill. Section of culvert may have failed and can no longer support embankment. Complete undermining at curtain walls and pipes. Corrective action required to maintain traffic. Metal culverts have extreme distortion and deflection throughout with extensive perforations due to corrosion.

1: Bridge closed. Corrective action may put back in light service.

0: Bridge closed. Replacement necessary.

RATING ITEM 113:

N: Bridge not over waterway.

U: Bridge with "unknown" foundation that has not been evaluated for scour. Until risk can be determined, a plan of action should be developed and implemented to reduce the risk to users from a bridge failure during and immediately after a flood event (see HEC 23).

T: Bridge over "tidal" waters that has not been evaluated for scour, but considered low risk. Bridge will be monitored with regular inspection cycle and with appropriate underwater inspections until an evaluation is performed ("Unknown" foundations in "tidal" waters should be coded U.)

9: Bridge foundations (including piles) on dry land well above flood water elevations.

8: Bridge foundations determined to be stable for assessed or calculated scour conditions. Scour is determined to be above top of footing. (Example A) by assessment i.e., bridge foundation are on rock formations that have been determined to resist scour within the service life of the bridge), by calculation or by installation of properly designed countermeasures (see HEC 23).

7: Countermeasures have been installed to mitigate an existing problem with scour and to reduce the risk of bridge failure during a flood event. Instructions contained in a plan of action have been implemented to reduce the risk to users from a bridge failure during or immediately after a food event.

6: Scour calculation/evaluation has not been made. (Use only to describe case where bridge has not yet been evaluated for scour potential.)

5: Bridge foundations determined to be stable for assessed or calculated scour conditions. Scour is determined to be within the limits of footing or piles (Exam. B) By assessment i.e., bridge foundations are on rock formations that have been determined to resist scour within the service life of the bridge), by calculations or by installation of properly designed countermeasures (see HEC 23).

4: Bridge foundations determined to be stable for assessed or calculated scour conditions; field review indicates action is required to protect exposed foundation (see HEC 23).

3: Bridge is scour critical; bridge foundations determined to be unstable for assessed or calculated scour conditions: Scour within limits of footing or piles. (Example B) or Scour below spread-footing base or piles tips. (Example C)

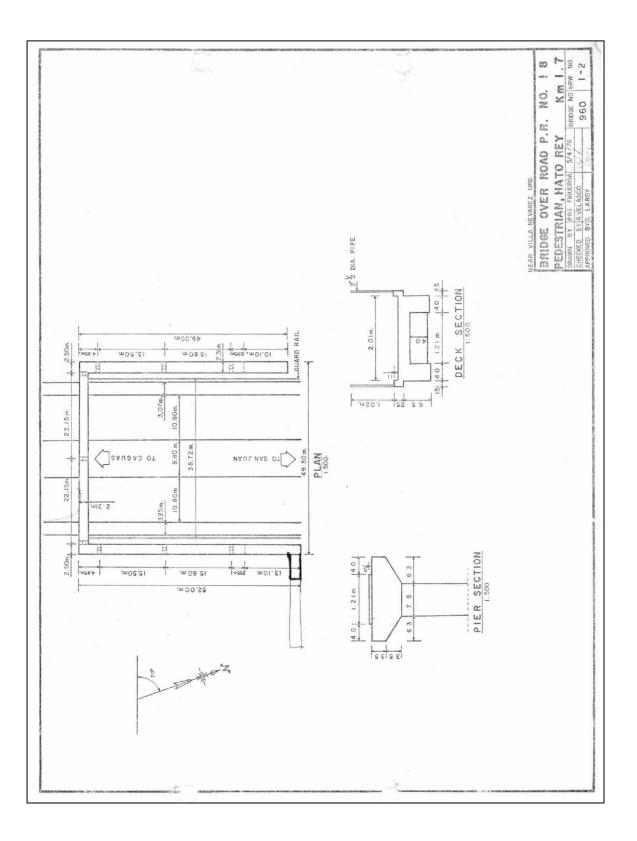
2: Bridge is scour critical; field review indicates that extensive scour has occurred at bridge foundations, which are determined to be unstable by: (a comparison of calculated scour and observed scour during the bridge inspection) or (an engineering evaluation of the observed scour condition reported by the bridge inspector in Item 60)

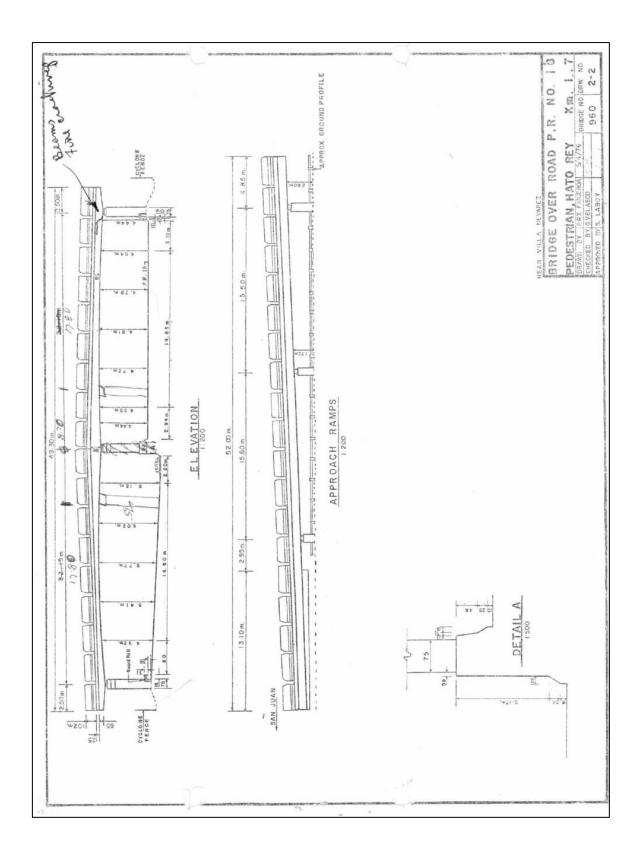
1: Bridge is scour critical; field review indicates that failure of piers/abutments is imminent. Bridge is closed to traffic. Failure is imminent based on: (a comparison of calculated scour and observed scour during the bridge inspection) or (an engineering evaluation of the observed scour condition reported by the bridge inspector in Item 60).

0: Bridge is scour critical. Bridge has failed and is closed to traffic.

| | | | | | C | ore Eleme | ents | | | | |
|--------------|----------------------|--------------|---|-------------------|--------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|--|
| Elem. No. | Elements Description | P a g. | E n v. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| _ | | - | 3 | | | | | | | | 0 |
| | | + | 3 | | | | | | | | 0 |
| | | ┢ | 3 | | - | | | | | | 0 |
| | | + | 3 | | | <u>4</u> | | | | | 0 |
| | | + | 3 | | | | | | | | 0 |
| - | | + | 3 | | | | | | | | 0 |
| | | + | 3 | | | | | | | | 0 |
| | | + | 3 | | | | | | | | 0 |
| | | + | 3 | | | | | | | - | 0 |
| | | \top | 3 | | | | | | | | 0 |
| | | \top | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| Flem | | Р | E | State | | Core Ele | ments _{Quantity} | Quantity | Quantity | Quantity | Total Sta |
| Elem. No. | Elements Description | a | E n v. | State Quantity | Non Units | | | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | |
| | Elements Description | | n v. | | | Quantity Condition | Quantity Condition | Condition | Condition | Condition | Quantity |
| | Elements Description | a | n v. 3 | | | Quantity Condition | Quantity Condition | Condition | Condition | Condition | Quantity 0 |
| | Elements Description | a | n v. 3 | | | Quantity Condition | Quantity Condition | Condition | Condition | Condition | Quantity 0 0 |
| | Elements Description | a | n v. 3 | | | Quantity Condition | Quantity Condition | Condition | Condition | Condition | Quantity 0 0 |
| | Elements Description | a | n v. 3 3 3 | | | Quantity Condition | Quantity Condition | Condition | Condition | Condition | Quantity 0 0 |
| | Elements Description | a | n v. 3 3 3 3 | | | Quantity Condition | Quantity Condition | Condition | Condition | Condition | Quantity 0 0 0 0 0 0 0 |
| | Elements Description | a | n v. 3 3 3 3 3 3 3 | | | Quantity Condition | Quantity Condition | Condition | Condition | Condition | Quantity 0 0 0 0 0 |
| | Elements Description | a | n v. 3 3 3 3 3 3 3 3 3 3 | | Units | Quantity Condition State 1 | Quantity Condition State 2 | Condition | Condition | Condition | 0 0 0 0 |
| | Elements Description | a | n v. 3 3 3 3 3 3 3 3 3 3 | | Units | Quantity Condition | Quantity Condition State 2 | Condition | Condition | Condition | Quantity 0 0 0 0 0 0 |
| | Elements Description | a | n v. 3 3 3 3 3 3 3 3 3 3 | | Units | Quantity Condition State 1 | Quantity Condition State 2 | Condition | Condition | Condition | Quantity 0 0 0 0 0 0 0 0 0 Total Stat |
| No. | | a g. | n v. 3 3 3 3 3 3 3 3 3 3 3 3 5 8 | Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Condition State 3 | Condition State 4 | Condition State 5 | Quantity 0 0 0 0 0 0 0 0 0 Total Stat |
| No. | | a g. | n v. 3 3 3 3 3 3 3 3 3 3 3 3 3 5 8 8 8 8 8 8 | Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Condition State 3 | Condition State 4 | Condition State 5 | Quantity 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| No. | | a g. | n v. 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 | Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Condition State 3 | Condition State 4 | Condition State 5 | Quantity 0 0 0 0 0 0 0 0 0 Total Stat Quantity 0 |
| No. | | a g. | n v. 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 | Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Condition State 3 | Condition State 4 | Condition State 5 | Quantity 0 0 0 0 0 0 0 0 0 0 Total Stat Quantity 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| No. | | a g. | n v. 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 | Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Condition State 3 | Condition State 4 | Condition State 5 | Quantity 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| No. | | a g. | n v. 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 | Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Condition State 3 | Condition State 4 | Condition State 5 | Quantity 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |

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0960-Apr.-15-2014-012.jpg



0960-Apr.-15-2014-015.jpg



0960-Apr.-15-2014-017.jpg



0960-Apr.-15-2014-018.jpg

C.2 August 12, 2002

| ourState Department of Transportation | | | | Bureau of Bridg | ges and Structur ridge Maintenan |
|---|---------------------------|---|--|---|-------------------------------------|
| E | Bridge In | spection | Report | b | |
| Bridge Key: 009601 | Agenc | | | Sufficiency | Rating: -1.0 |
| IDENTIFICATION | | | IK | ISPECTION | |
| acility Carried 7. cop te | 009601 KM N INT PR21 & | | months Inspection D | ate 90: 8/12/2002 Next In | |
| de (Oplinder) Es. | iB: 2 U.S. Numbered | FC Frequency 92A: N. | | | C Inspection: NA |
| Level of Service 5C: 1 Mainline Rte. Number 5D: | 10000 | | | | |
| Directional Suffix 5E: 1 North % Responsibility : | NA | SI Frequency 92C: N | | NA Next S | |
| SHD District 2: SAN JUAN County Code 3: Place Code 4: 78770 Million to 1 | San Juan | Element Frequency: 24 | months Element Insp | ection Date: 08/12/2002 Next E | lem. Insp. Due: 08/12/2004 |
| Nometer Post 11: | 01.7 kgr | | CLA | SSIFICATION | |
| Feature Intersected 6: PEDESTRIAN WALKWAY | | Defense Highway 100 | 2 Over/under STR/ | HNET Parallel Structure 101: | No bridge exists |
| Latitude 16: 18d 23' 24* Longitude 17: Border Bridge Code 98: Unknown (P) | 068d 04' 36" | Direction of Traffic 102 Highway System 104: | 2: 0 Not hwy traffic 0 Not on NHS | Temporary Structure 103: NBIS Length 112: | Unknown (NBI) Long Enough |
| Border Bridge Number 99: NA | | Toll Facility 20: | 3 On free road | Functional Class 26: | 12 Urban Fwy/Expwy |
| 40.208 | | | the second secon | at eligible for NRHP | |
| STRUCTURE TYPE AND MATER Number of Approach Spans 46: 0 Number of Spans Main Un | RIALS | Owner 22 Custodian | | 01 State Highway Agency 01 State Highway Agency | |
| Main Span Material/Design 43A/B: | | \succ | | ONDITION | |
| Concrete Continuous 04 | | Deck 58: 6 Satisfact | - | - Carolina | 0: 6 Satisfactory |
| | - at | Culvert 62: N N/A (NB | l) Cha | nnel/Channel Protection 61: N | N/A (NBI) |
| Deck Type 107: 1 Concrete-Cast-in-Place | | | | ING AND POSTING | |
| Wearing Surface 108A: 1 Monolithic Concrete | - | Inventory Rating Me | | Stress Operating Rating Method I | 3:2 AS Allowable Stress |
| Membrane 108B: 0 None Deck Protection 108C: None | i i i i i i | Inventory Rating 66: | | Operating Rating 64: | MS44.4 |
| | | Design Load 31: | 7 Pedestrian | Posting 70: | 5 Al/Above Legal Loads |
| AGE AND SERVICE fear Built 27: 1967 Year Reconstruct | | Posting status 41: | A Open, no restriction | n | |
| rear point 27: 1907 Year Reconstruct Type of Service on 42A: 3 Pedestrian-bicyle | cted 106: Unknown | <u> </u> | | | |
| Type of Service under 428: 1 Highway | | Bridge Rail 36A: | A N N/A or not required | Approach Rail 36C: | N N/A or not required |
| | of ADT 30: 2000 | Transition 36B: | N N/A or not required | Approach Rail Ends 36D: | N N/A or not required |
| | | and the second se | Unknown (NBI) | Deck Geometry 68: | Unknown (NBI) |
| GEOMETRIC DATA Length Max Span 48: 22.20 m Structure Length 49: | 49.30 m | and a second | cal and Horizontal 69: 71: N Not applicable | Unknown (NBI) Approach Alignment 72: | 6 Equal Min Criteria |
| Curb/Sdwik Wdth L 50A: 0.00 m Curb/Sidewalk Width R | | Scour Critical 113: | N Not Over Waterw | | o Equal Mill Cinena |
| Width Curb to Curb 51: 2.10 m Width Out to Out 52: Approach Roadway Width 32: 44.30 m Mediar | 2.30 m 33: 0 No median | | PROPOSE | DIMPROVEMENTS | |
| (w shoulders) Deck Area: | | Bridge Cost 94: | \$0 | Type of Work 75: | 35 Rehabilitate-gen. |
| Skew 34: 0.00 * Structure Flared 35: 0 No flar | | Roadway Cost 95: Total Cost 96: | \$0 | Length of Improvment | |
| Minimum Vertical Clearance Over Bridge 53: 99.99 m | ana ath atouch | Year of Cost Estimate | \$ 12,000 97: 2000 | Future ADT 114: Year of Future ADT 11: | 216,469 5: 2020 |
| Minimum Vertical Underclearance Reference 54A: H Hwy bi Minimum Vertical Underclearance 54B: 04.44 m | eneath struct | \sim | NAM | | |
| | eneath struct | Navigation Control 38: | N NA-no waterw | GATION DATA | |
| Minimum Lateral Undrolearance R 55: 03.30 m | | Vertical Clearance 39: Pier Protection 111: | 0.00 m | Horizontal Clearance 40: | 0.00 m |
| |) | | Unknown (NBI) | Lift Bridge Vertical Clearan | nce 116: |
| ELEMENT CONDITION STATE DATA | Total Qty % in 1 | Qty. St. 1 % in 2 Qty | 9 0 W - 0 0 | | 2 |
| Str Unit Elm/Env Description Units 2 12/3 Bare Concrete Deck sq.m | | 0 100 % | . St. 2 % in 3 Qty. 1,539 0 % | 0 0.00 | 5 Qty. St. 5 |
| 2 110/3 R/Conc Open Girder m. | 99 91 % | 90 9 % | 9 0% | | 0% d |
| 2 210/3 R/Conc Pier Wall m. | 18 100 % 26 100 % | 18 0 % | 0 0% | 0 00 | 0% 0 |
| 2 234/3 R/Conc Cap m. 2 358/3 Deck Cracking SmFlag ea. | 26 100 % | 26 0% | 0 0% | | 0% 0 |
| | | <u>_</u> | - Y 074 | 0 0% 0 | 0% d |
| NSP002_Inspect_Report_Metric | Agene | | | | / |
| | Agency | D: 00 | 9601 | Mon 1 | 0/7/2002 11:16:1 |

| | | | tation | | Bureau of Bridge Bri | dge Maintenance |
|-------------------------------------|--|---|---------------------------------------|---------------------|-------------------------|-----------------|
| | | | Bridge Inspec | tion Report | | |
| Str U | t Bem/Er | | | Element Notes | 1 | |
| 2 | 12/3 | Concrete Deck - Bare | | | | |
| 2 | 110/3 | Reinforced Conc Open Girder | Bear | | | |
| 2 | 210/3 | Reinforced Conc Pier Wall | | | | |
| 2 | 234/3 | Reinforced Conc Cap | 52 | | | |
| 2 | 358/3 | Deck Cracking | | | | |
| BRIC | GE NC | DTES | | | | |
| CUI | VERT | | | | | |
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| AS | T INSPI | ECTION | | | | |
| nspe | ection D | ate: 08/12/2002 | Type: 1 Regular N | BI | | |
| nsp | ector: | Pontis | Pontis User Key: | Pontis - Pontis Por | | |
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| Scot | e: NBI: | ✓ Othe | r: Elemer | nt: 🗸 | | |
| | | | ture Critical: | 🗀 | | |
| | Und | erwater: 🗌 Fract | | | | |
| NSF | ECTIO | N NOTES | | | | |
| Date | ious co | 08-12 - omments > < none > | | | | |
| Date | | | | | | |
| Date | ious co | mments > < none > | | τ. | | |
| Prev | tious co | emments > < none > | Type: 1 Regular N | IBI | | |
| Prev | ious co | emments > < none > | Type: 1 Regular N | | | |
| Prev | tious co | emments > < none > | Type: 1 Regular N Pontis User Key: | | | |
| Prev Prev Prev PAS | TINSP ection D ector: | ECTION bate: 02/01/2000 | Pontis User Key: | Pontis - Pontis Poi | | |
| Prev Prev Prev PAS | T INSP ection D ector: e: | ECTION bate: 02/01/2000 -1 Othe | Pontis User Key: | Pontis - Pontis Poi | | |
| Prev Prev Prev PAS | F INSP ection D ector: e: NBI: | ECTION bate: 02/01/2000 -1 Quete: 0the | Pontis User Key: | Pontis - Pontis Poi | | |
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| Prev | F INSP ection D ector: e: NBI: Und | ECTION bate: 02/01/2000 -1 Quete: 0the | Pontis User Key: | Pontis - Pontis Poi | | |
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| Prev PAS nspe Scop | F INSP ection D ector: e: NBI: Und | ECTION bate: 02/01/2000 -1 Erwater: C Othe erwater: Fract | Pontis User Key: | Pontis - Pontis Poi | | |
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| AS hspo scop | T INSP ection D ector: e: NBI: Und ECTIO | ECTION bate: 02/01/2000 -1 erwater: C Othe N NOTES | Pontis User Key: r: | Pontis - Pontis Poi | | |
| Pate Prev PAS nspe Bcop | T INSP ection D ector: e: NBI: Und ECTIO | ECTION bate: 02/01/2000 -1 Erwater: C Othe erwater: Fract | Pontis User Key: r: | Pontis - Pontis Poi | Mon | 10/7/2002 11:16 |

C.3 February 9, 2000

| 1 | | | | PAGE 1 OF 7 |
|---|--|---------------------------------------|-----------------|-----------------------------|
| NGINEER: HERIDER | PUERTO RICO HIG | | EQUIP | MENT |
| NGINEER: HERIBERTO GONZALEZ SISTANTS: LUIS QUINONEZ | BRIDGE STUDIES AND | | BUS X | LADDERS |
| : ALFREDO ERAZO | BRIDGE REINSPECTION | & EVALUATION REPORT | BOAT | CAMERA X |
| . DIMON DODDO | | FEDERAL SYSTEM | UNDERWATER | SNOOPER # |
| : JAIME RIVAS | BRIDGE No.: 00960 | FEDERAL SISTEM | SNOOPER OPERATO | R |
| | | KM. No. : 0001.700 | PLAQU | |
| VALUATION DATE: 09-FEB-2000 | AD No.: PR 18 | KH. NO 00011111 | YES NO | No. |
| 0012000 | | | FILM NO. | |
| | IDENTIFICA | TION | | |
| 1- STATE : | | Generalth of Pue | rto Rico | 721 |
| 2- HIGHWAY AGENCY DISTRICT : | • | Commonwearth of the | AN JUAN | 01 |
| 2- HIGHWAY AGENCY DISTRICT : | ••••••••••••••••••••••• | SAN J | UAN | 127 |
| 4- PLACE CODE : | | CAN JUAN URBAN ZONE | | 76770 |
| 5- INVENTORY ROUTE : | ••••••• | . SAN DOAL OLES 2-1-1 | -00001-0 | 221100001 |
| 6- FEATURES INTERSECTED : | • | PEDESTRIAN WALKWA | Y PEDES | TRIAN WALKWAY |
| 7- FACILITY CARRIED BY STRUCTURE : | | P.R 18 | | PR 18 |
| 8- STRUCTURE NUMBER : | | BRIDGE 960 | 1 OF 1 | 009601 |
| A TOCHTTON . | | 0.5 KM N INT PR21 | a PAIO | M N INT PR21 & PR18 0444 |
| A THREE DOLLER MANTAL WEDTICHT CTT | ADANCE . | 4.44 MT (14 | | 0001700 |
| 1- KILOMETERPOINT : | | | . 1.70 | 1 |
| 2- BASE HIGHWAY NETWORK : | | | | 000000001800 |
| THE INVENTORY POUTE SUBBOUTE NUMBER | | | | 18232400 |
| | | DEGREES 23.4 MINUTES | | 066043600 |
| | 66 | DEGREES 04.6 MINUTES | S In all make | 000 |
| 7- LONGITUDE : 9- BYPASS, DETOUR LENGTH (NEAREST KILOME | TER) : | STRUCTURE OVER HIG | HWAY | |
| | | | | |
| | CLASSIFICA | TION | | |
| | 01.5 | DEE BOND | | 3 |
| 0- TOLL : | ON F | REE ROAD | | 01 |
| 1- MAINTENANCE RESPONSABILITY : | D.T.P.W. | | | 01 |
| 2- OWNER : | INTERS | TATE | | 12 |
| 2- OWNER : | | | | |
| | AGE AND SE | RVICE | | |
| 7- YEAR BUILT : | | | 1967 | 1967 |
| 7- YEAR BUILT : | | 0 LANES ON / 9 LANES UN | DER | 0009 |
| R- LANES ON AND UNDER STRUCTURE | | 169,700 | | 169700 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : | | | 1998 | 1998 |
| 9- A.D.T. OF INVENTORY ROUTE : | | | | |
| | | ATA | | |
| 1- DESIGN LOAD : | | PE | DESTRIAN | 7 |
| 1- DESIGN LOAD : 2- APPROACH ROADWAY WIDTH : | | 44.30 MT (145 | .30 FT) | 0443 |
| 2- APPROACH ROADWAY WIDTH : 3- BRIDGE MEDIAN : | | NONE | | (|
| 3- BRIDGE MEDIAN : | | NO | | 00 |
| 4- SKEW ANGLE : | | | NO | (|
| 5- STRUCTURE FLARED : 6- TRAFFIC SAFETY FEATURES : | | · · · · · · · · · · · · · · · · · · · | N-N-N-N | NNN |
| 6- TRAFFIC SAFETY FEATURES : | | | 5 | |
| HISTORICAL SIGNIFICANCE : NAVIGATION CONTROL : | | | N/A | 1.200 |
| 8- NAVIGATION CONTROL | | | N/A | 000 |
| VERTICAL CLEARANCE | •••••• | ····· | N/A | 0000 |
| WALLON VERTICAL CLEARNING | | | . OPEN | |
| 9- NAVIGATION VERTICAL CLEARANCE : | FF. 1 | THE UT OTHER Y | | |
| 9- NAVIGATION VERTICAL CLEANAGE 10- NAVIGATION HORIZONTAL CLEARANCE : | DEDECTDIAN O | VER HIGHWAY | | 3 |
| 9- NAVIGATION VERTICAL CLEARANCE : 10- NAVIGATION HORIZONTAL CLEARANCE : 11- STRUCT. OPEN, POSTED OR CLOSED TO TRAI 12- TYPE OF SERVICE : | PEDESTRIAN 0 | VER HIGHWAY | | |
| NAVIGATION VERTICAL CLEARANCE : NAVIGATION HORIZONTAL CLEARANCE : STRUCT. OPEN, POSTED OR CLOSED TO TRAI TYPE OF SERVICE : STRUCTURE TYPE, MAIN : | PEDESTRIAN O CONCRETE CONTINUOS NONE | VER HIGHWAY | 100 | 20 |
| NAVIGATION VERTICAL CLEARANCE : | PEDESTRIAN O CONCRETE CONTINUOS NONE | VER HIGHWAY | 100 | 31 204 000 002 |
| NAVIGATION VERTICAL CLEARANCE : NAVIGATION HORIZONTAL CLEARANCE : STRUCT. OPEN, POSTED OR CLOSED TO TRAI TYPE OF SERVICE : | PEDESTRIAN O CONCRETE CONTINUOS NONE | VER HIGHWAY | 100 | 20- |

| | | | | City - | |
|--|------------------------------------|---|-----------------|--|-------------------|
| AL SYSTEM | | | | | PAGE 2 OF 7 |
| | _ | PUERTO RICO HIGHWAY | | | PAGE 2 CT |
| ADGE No.: 00960 | | RIDGE STUDIES AND EVA | | | |
| | BRII | DGE REINSPECTION & EV | ALUATION REPORT | | |
| 47- TNV POURT MORA | | 17.80mt | | | 178 kg |
| 47- INV. ROUTE, TOTAL HORIZ. CI | EARANCE : | | IT | (68.36 FT) | |
| 48- LENGTH OF MAXIMUM SPAN : | •••••• | 22.15 MT | (7 | 2.65 FT) | 00222 |
| 49- STRUCTURE LENGTH : | | 49 30 MT | (1 | 61.70 FT) | 000493 |
| 50- CURB OR SIDEWALK WIDTHS : . | | N/A | | | 000000 |
| | | | | | |
| | | STRUCTURE DATA | | | |
| 51- BRIDGE ROADWAY WIDTH, CURB | TO CURB | | 2 10 MT | (6.59 FT) | 0021 |
| 52- DECK WIDTH, OUT TO OUT : | | | 2 31 MT | (7.58 FT) | 0023 |
| 53- MI. VERT. CLEAR. OVER BRIDG | E ROADWAY | | INT | TMITED | 9999 |
| 54- MINIMUM VERTICAL UNDERCLEAR | ANCE | | A 44 MT | (14' - 7") | H0444 |
| 55- MINIMUM LATERAL UNDERCLEARA | NCE ON BIOUT | ••••••••••••••••••••• | | (10 8 57) | H033 |
| 56- MINIMUM LATERAL UNDERCLEARA | NCE ON LEET | ••••••• | 3.25 MI | (10.8 FT) | 026 |
| | NCB ON LEFT : | • | 2.55 MT | (8.36 F1) | |
| | | | | | |
| | ***** | CONDITION== | | | |
| | | | | | |
| 58- DECK: FAIR CONDITION | RATING: 6 | | | DECK COMMENTS: DECK SURFACE HAS PLAST | TTO DETACHMENT SC |
| 58.1 WEARING SURFACE: MATERI | AL: CONCRETE | CONDITION : 5 | | | TER DETREMENT, CC |
| THICKNESS: | | | | ALING AND FINE TO | OVC THERE ARE 4 |
| DETERIORATION: X YES N | | DEQUATE INADEQUATE | | MEDIUM TRANSVERSAL CRA | ICKS. THERE AND |
| | SAFETY: X YES NO | | | PERFORATIONS (20 CMS. | DIAM.), INO |
| 58.2 SLAB OR PLATE: MATERIAL | CONCRETE | CONDITION 6 | | OVER EACH NEW PIER THA | |
| | MEDIUM OPEN | | | LED TO PREVENT AN ACCI | |
| TOP BOTTOM | | | 1 | RAMP LOWER THAN DECK S | |
| | | 1. & L > 1 in. x 6 | | POSSIBLE ACCESS ON WHE | |
| SCALING : X | to ½ in., M ½ in | % in., H % in 1 j | in., S > 1 | EAST RAMP DISPLACED 10 | |
| L | | | | ING INCLINED TOWARD DE | CK. |
| XEFFLORESCENCE EXUDATION | | | CRATE SEVERE | | |
| 58.3 MOVEMENT: DECK TO BACKWA | LL CM. DEC | K TO APPROACH SLAB | cm. | | |
| Instant adjustment for second statements of a monospectrum second se Second second second second second se | r | | 1 | | |
| | | (58.6) (58.7) | | | |
| | CURBS MEDIAN | SIDEWALKS PARAPETS | RAILING | | |
| | | | | | |
| MATERIAL | 1 1 1 | 1 | G/STEEL | | |
| CONDITION RATING | - | | - | | |
| HEIGHT LOSS (cm) | 1 1 1 | 1 | 1 1 | | |
| JOINTS | | | - | | |
| DESTRICE | 1 1 | 1 | ок | | |
| ALIGNMENT | · | | - P0 | | |
| | 1 | | 1 1 | | |
| PAINT: G-GOOD, F-FAIR, | · | | - N | | |
| P-POOR, N-NONE | i i i | 1 | 1 | | |
| U-USELESS TO PAINT | | 1 | 1 1 | | |
| SAFETY | | | - NO | | |
| | i i i | | 1 1 | | |
| CRACKING (F-M-O) | | | | | |
| SPALLING (S-L) | i i i | 1 | i i | | |
| SCALING (L-M-H-S) | | | ii | | |
| | | | | | |
| | TREAT AL. | CONDITION: | FUNCTO | ONING: YES NO | |
| 58.9 LIGHTING STANDARDS: MAT | SIZE: | SAFETY: | roncin | MING: IES NO | |
| 58.10 UTILITIES: TYPE: | | DITION: | FUNCTIONING: | YPO NO | |
| 58.11 JUINIS. | CONSTRUCTION CON CRACKING: FINE | | SPALLING: SMAL | Transfer and the second s | |
| LEAKING: YES NO | | CONDITION: | | | |
| 58.12 DRAINS AND SCUPPERS: MA | ILERIAD: | CONDITIONT | FUNCTION | VING: YES NO | |
| | | | | | |

| | 7 |
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| L SYSTEM PUERTO RICO HIGHWAY AUTHORITY | PAGE 3 OF 7 |
| BRIDGE STUDIES AND EVALUATION OFFICE | |
| OGE No.: 00960 BRIDGE REINSPECTION & EVALUATION REPORT | |
| | |
| 59- SUPERSTRUCTURE: FAIR CONDITION RATING: 5 SUPERSTRUCTURE COMMENT | TS: |
| TOWARD CACUAS L | ANES WITH BIG DEL |
| CONCEPTE I | DUE TO TRUCK IMPA |
| | |
| CONDITION: FUNCTIONING: 125 NO | |
| 59.2 BRIDGE SEATS, PEDESTAL, GROUT PADS, ABUTMENTS OR PIER SEATS WHERE BEAMS BEAR | |
| DIRECTLY ON CONCRETE | |
| CONDITION: 6 CRACKING: X F M O SPALLING: X S L | |
| SCALING: L M H S CRUSHING: | |
| 59.3 STEEL-BEAMS: TYPE: DIMENSIONS(height;width;thickness): | |
| CONDITION: CORROSION: L M S PAINT: G F P N U | |
| 59.4 CONCRETE-BOX BEAMS, I-BEAMS, SLAB, T-BEAM, TYPE: T-BEAM | |
| CONDITION: 5 CRACKING: X F M O SPALLING: S X L | |
| SCALING: L M H S | |
| 59.5 TRUSSES: TYPE: CONDITION: CORROSION: L M S | |
| DAMAGE: DEFORMATION: PAINT: G F F | |
| A-TRUSS B-UPPER & LOWER LATERAL BRACING C-PORTALS D=FLOOR BEAMS E*-STRINGERS | |
| 59.6 DRAINAGE: TYPE: CONDITION: FUNCTIONING: 125 | |
| 59.7 HINGES: CONDITION: | |
| ALIGNMENT: GOOD BAD PAINT: G | |
| 59.8 DEFLECTIONS: X NORMAL EXCESSIVE Cms. | |
| 59.9 VIBRATIONS: X MINIMAL MODERATE EXCESSIVE | |
| | |
| | |
| | |
| | |
| | |
| RATING: 6 | 1 |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 | es bents> |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 | SS BENTS> |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 | 50.4.2 60.4.3 |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 | 50.4.2 60.4.3 |
| 60- SUBSTRUCTURE: SATISPACTORY RATING: 6 I ABUTMENTS I ABUTMENTS I I I | 50.4.2 60.4.3 |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 I ABUTMENTS I BUTMENTS I I I< | 50.4.2 60.4.3 |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 | 50.4.2 60.4.3 RACING PILES |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 | 50.4.2 60.4.3 RACING PILES |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 I ABUTMENTS I ABUTMENTS I I I | 50.4.2 60.4.3 RACING PILES |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 I ABUTMENTS I ABUTMENTS I I I | 50.4.2 60.4.3 RACING PILES |
| 60- SUBSTRUCTURE: SATISPACTORY RATING: 6 Image: Constructure: Satispactory ABUTMENTS Image: Constructure: Satispactory Image: Constructure: Satispactory Image: Constructure: Satispactory ABUTMENTS Image: Constructure: Satispactory Image: Constructure: Satispactory | 50.4.2 60.4.3 RACING PILES |
| 60- SUBSTRUCTURE: SATISPACTORY RATING: 6 Image: Constructure: Satispactory ABUTMENTS Image: Constructure: Satispactory Image: Constructure: Satispactory Image: Constructure: Satispactory ABUTMENTS Image: Constructure: Satispactory Image: Constructure: Satispactory | 50.4.2 60.4.3 RACING PILES |
| 60- SUBSTRUCTURE: SATISPACTORY RATING: 6 Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS Image: ABUTMENTS | So.4.2 60.4.3 RACING PILES |
| 60- SUBSTRUCTURE: SATISPACTORY RATING: 6 Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS Image: ABUTMENTS | So.4.2 60.4.3 RACING PILES |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS Image: ABUTMENTS Image: A | BaCING PILES |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS Image: ABUTMENTS Image: A | BaCING PILES |
| 60- SUBSTRUCTURE: SATISFACTORY RATING: 6 Image: ABUTMENTS Image: ABUTMENTS Image: ABUTMENT< | BaCING PILES |
| 60- SUBSTRUCTURE: SATISPACTORY RATING: 6 Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS Image: ABUTMENTS | BaCING PILES |
| 60- SUBSTRUCTURE: SATISFACTORY RATIN: 6 Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS Image: ABUTMENTS Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS Image: ABUTMENTS | BaCING PILES |
| 60- SUBSTRUCTURE: SATISPACTORY RATINE: 6 Image: constructure: satispactory ABUTMENTS Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory <t< td=""><td>BaCING PILES </td></t<> | BaCING PILES |
| 60- SUBSTRUCTURE: SATISPACTORY RATINE: 6 Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS Image: ABUTMENTS Image: ABUTMENTS PIERS OR NON PILES BENTS Image: ABUTMENTS Image: ABUTMENTS Image: ABUTMENT | BaCING PILES |
| 60- SUBSTRUCTURE: SATISPACTORY RATINE: 6 Image: constructure: satispactory ABUTMENTS Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory <t< td=""><td>BaCING PILES </td></t<> | BaCING PILES |
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| 60- SUBSTRUCTURE: SATISPACTORY RATINE: 6 Image: constructure: satispactory ABUTMENTS Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory Image: constructure: satispactory <t< td=""><td>BaCING PILES </td></t<> | BaCING PILES |

| SYSTEM | | PAGE 4 OF 7 |
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| SISTER | PUERTO RICO HIGHWAY AUTHORITY | PAGE 4 OF |
| SE NO. 1 00960 | BRIDGE STUDIES AND EVALUATION OFFICE | |
| GE NO.1 00960 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| | | |
| 61- CHANNEL & CHANNEL | | |
| 61.1 CHANNEL SCOUR (E | | |
| 61.2 EMBANKMENT EROS | ION (EXTENT) : | |
| | | |
| | | |
| | CONDITION FUNCTIONING | |
| | TYPE MATERIAL RATING | |
| | I I YES NO I | |
| | | |
| 61.3 PROTECTIVE DEV | | |
| 61.4 FENDER SYSTEM | I III | |
| 61.5 RIP RAP | | |
| 61.6 SPUR DIKES, JET | TTIES | |
| | | |
| | | |
| 61.7 OBSTRUCTION (D | EBRIS, GROWTHS): | |
| 61.8 CHANNEL CHANGE | | |
| DETRIMENTAL: | YES NO IF YES, EXPLAIN | |
| 61.9 ADEQUATE WATER | NWAY: YES NO IF NO, EXPLAIN | |
| | REA: FLOODING: YES NO IF YES, EXPLAIN | |
| | EROSION: YES NO IF YES, EXPLAIN | |
| | | |
| 61.11 LOCATION OF PI | Description of Descri | |
| 61.11 LOCATION OF PI IF YES, EXPLA | ERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO | |
| IF YES, EXPLA | ERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO | |
| IF YES, EXPLA | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO | |
| IF YES, EXPLA | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO | |
| IF YES, EXPLA | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO | |
| IF YES, EXPLA 61.12 OTHER FEATURES | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: | |
| IF YES, EXPLA 61.12 OTHER FEATURES | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: | |
| IF YES, EXPLA 61.12 OTHER FEATURES | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS : N/A RATING : N CULVERT COMMENTS: | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS : N/A RATING : N CULVERT COMMENTS: | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6. [4] MATERIAL [| IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6: [4: [4: [4: [4: [4: [4: [4: [4: [4: [4 | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO VIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL [62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL] | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6: [6: [6: [6: [6: [6: [6: [6: [6: [6: | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO VIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL [62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL] | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6] MATERIAL [CONDITION RATING] FUNCTIONING (Y-N)] CRACKING (F-M-0)] SPALLING (S-L)] | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL [62.2HEADWALL] 62.3CUT-OFFWALL] 62.4RETAINING WALL | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6: [6: [6: [6: [6: [6: [6: [6: [6: [6: | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL [62.2HEADWALL] 62.3CUT-OFFWALL] 62.4RETAINING WALL | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6: [6: [6: [6: [6: [6: [6: [6: [6: [6: | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO VIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6] MATERIAL [CONDITION RATING]- FUNCTIONING(Y-N)] CRACKING(F-M-O)]- SPALLING (S-L) [SCALING (S-M-S)]- CORROSION(L-M-H-S)]- | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL [62.2HEADWALL] 62.3CUT-OFFWALL] 62.4RETAINING WALL | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6] MATERIAL [CONDITION RATING]- FUNCTIONING(Y-N)] CRACKING(F-M-O)]- SPALLING (S-L) [SCALING (S-M-S)]- CORROSION(L-M-H-S)]- | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: 52.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL | |
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| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6] MATERIAL [CONDITION RATING] FUNCTIONING (Y-N)] CRACKING (F-M-O) [SPALLING (S-L)] SCALING (L-M-S)] CORROSION (L-M-S)] CORROSION (L-M-S)] SETTLEMENT (Y-N) [| IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO VIN 3 THAT MAY AFFECT STRUCTURE: NING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN 52- CULVERT AND RETAIN 66 MATERIAL CONDITION RATING - FUNCTIONING (Y-N) CRACKING (F-M-O) - SPALING (S-L) SCALING (L-M-H-S) - CORROSION (L-M-S) SETTLEMENT (Y-N) ALIGNMENT (Y-N) - ALIGNMENT (Y-N) - | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN 52- CULVERT AND RETAIN 63- METHOD USED TO DETA | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO NIN 3 THAT MAY AFFECT STRUCTURE: NING WALLS :N/A RATING :N CULVERT COMMENTS: 2.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL | 2 |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN 52- CULVERT AND RETAIN 53- CONDITION RATING FUNCTIONING (Y-N) CRACKING (F-M-O) SPALLING (S-L) SCALING (S-L) SCALING (S-L) SCALING (S-L) SCALING (S-L) SCALING (L-M-H-S) CORROSION (L-M-S) CORROSION (L-M-S) SETTLEMENT (Y-N) ALIGNMENT (Y-N) ALIGNMENT (Y-N) S3- METHOD USED TO DETI 54- OPERATING RATING : | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS : N/A RATING :N CULVERT COMMENTS: 32.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL | |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6] MATERIAL [MATERIAL [MATERIAL] CONDITION RATING [FUNCTIONING (Y-N)] CRACKING (F-M-O) [SPALLING (S-L)] SCALING (L-M-S)] CORROSION (L-M-S)] C | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IIN 3 THAT MAY AFFECT STRUCTURE: MING WALLS :N/A RATING :N CULVERT COMMENTS: 32.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 2 800 2 |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6] MATERIAL [MATERIAL [MATERIAL [CONDITION RATING] FUNCTIONING (Y-N)] CRACKING (F-M-O) [SPALLING (S-L)] SCALING (L-M-S)] CORROSION (L-M-S)] CO | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IIN 3 THAT MAY AFFECT STRUCTURE: HING WALLS : N/A RATING :N CULVERT COMMENTS: 32.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL | 800 |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6] MATERIAL [MATERIAL [MATERIAL] CONDITION RATING [FUNCTIONING (Y-N)] CRACKING (F-M-O) [SPALLING (S-L)] SCALING (L-M-S)] SCALING (L-M-S)] CORROSION (L-M-S)] SETTLEMENT (Y-N) [PAINT (G-F-P-N-U)] 53- METHOD USED TO DETIN 54- OPERATING RATING : 55- METHOD USED TO DETIN | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IIN 3 THAT MAY AFFECT STRUCTURE: MING WALLS :N/A RATING :N CULVERT COMMENTS: 32.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 800 |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6] MATERIAL [CONDITION RATING] FUNCTIONING (Y-N)] CRACKING (F-M-O) [SPALLING (S-L)] SCALING (L-M-S)] SETTLEMENT (Y-N) [ALIGNMENT (Y-N)] PAINT (G-F-P-N-U) [53- METHOD USED TO DETING 54- OPERATING RATING : 55- METHOD USED TO DETING 55- METHOD USED TO DETING 55- METHOD USED TO DETING 56- METHOD USED TO DETING 56- METHOD USED TO DETING 55- METHOD USED TO DETING | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IIN 3 THAT MAY AFFECT STRUCTURE: MING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 800 |
| IF YES, EXPLA 61.12 OTHER FEATURES 52- CULVERT AND RETAIN [6] MATERIAL [MATERIAL [MATERIAL [CONDITION RATING] FUNCTIONING (Y-N)] CRACKING (F-M-O) [SPALLING (S-L)] SCALING (L-M-S)] CORROSION (L-M-S)] CO | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IIN 3 THAT MAY AFFECT STRUCTURE: MING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 800 |
| IF YES, EXPLA 61.12 OTHER FEATURES 62- CULVERT AND RETAIN 62- CULVERT AND RETAIN 62- CONDITION RATING 64- CONDITION RATING 63- METHOD USED TO DETI 64- OPERATING RATING 65- METHOD USED TO DETI | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IIN 3 THAT MAY AFFECT STRUCTURE: MING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 800 |
| IF YES, EXPLA 61.12 OTHER FEATURES 62- CULVERT AND RETAIN 62- CULVERT AND RETAIN 62- CULVERT AND RETAIN 64- CONDITION RATING CONDITION RATING CONDITION RATING CONDITION RATING CRACKING (F-M-O) [SPALLING (S-L)] SCALING (L-M-S)] SETTLEMENT (Y-N) [ALIGNMENT (Y-N)] PAINT (G-F-P-N-U) [63- METHOD USED TO DETI 64- OPERATING RATING : 65- METHOD USED TO DETI | IERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IIN 3 THAT MAY AFFECT STRUCTURE: MING WALLS :N/A RATING :N CULVERT COMMENTS: 22.1BARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 800 |

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| TSTEM | | | |
| | | RICO HIGHWAY AUTHORITY | PAGE 5 OF 7 |
| NO.: 00960 | BRIDGE STU | DIES AND EVALUATION OFFICE | |
| | BRIDGE REINS | PECTION & EVALUATION REPORT | |
| - STRUCTURAL EVALUATION : | | | |
| | | | 5 |
| WEARING SURFACE HAS | DETACIONIS | | |
| 20 CMS. DIAM. ON DEC | DETACHMENT OF CONCRETE PLAST | ER. THERE ARE 4 PERFORATION | |
| SURFACE. RAMP RAILI | CK THAT NEED TO BE SEALED. ACC NG BROKEN FROM BASE AND INCLIN | CESS RAMP LOWER THAN DECK | |
| | THOMEN FROM BASE AND INCLIN | NED TOWARD DECK. | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | 7 |
| - DECK GEOMETRY : | | | |
| | | | M |
| N/A. | | | V |
| | | | |
| - UNDERCLEARANCE, VERTICAL | HORIZONTAL : | | |
| | | | I |
| MEETS MINIMUM TOLER. | ABLE LIMITS TO BE LEFT IN PLAC | CE AS IS. | |
| | | | |
| - BRIDGE POSTING : | | N/A. | 5 |
| | | | |
| - WATERWAY ADEQUACY : | | | N |
| | | | |
| N/A. | | | |
| | The Art Constant of State | | TT I DOG THAN 3 YEARS. |
| REMOTE - GREATER THAN 10 | 0 YEARS. SLIGHT - 11 TO 100 | YEARS. OCASSIONAL - 3 TO 10 YEARS. FREQUEN IN A MATTER OF HOURS. SIGNIFICANT - TRAFFIC | DELAYS OF UP TO SEVERAL I |
| INSIGNIFICANT - MINOR IN | CONVENIENCE. HIGHWAY PASSABLE | IN A MATTER OF HOURS. SIGNIFICANT - HAFFIC | |
| SEVERE - LONG TERM DELAY | S TO TRAFFIC WITH RESULTING HU | ARDSHIP | |
| 20 | Market and the | | |
| - APPROACH ROADWAY ALIGNMEN | F | | |
| | | | |
| N/A. | | | |
| | CONDITION : 6 MAT | TERIAL : RAMPS | |
| 72.2 SLAB OR PAVEMENT | | G: L M X H S UNNEVEN: YES NO ROUG | 3H: YES NO |
| CRACATING: | O MOVEMENT: APPROACH SLAB-I | BACKWALL: YES NO BREAKING UP: EXCESSI | IVE DEFORMATION: |
| SETTLEMENT. INC. | YES NO DRAINAGE: INADEQU | | |
| SAFETY: HAZARDOUS MOVEMENT: PAVEMENT-APP | ROACH SLAB: YES NO EN | MBANKMENT: CONDITION: | |
| MOVEMENT: PAVEMENT ATT | ING: YES NO EROSION: | YES NO IF YES, EXPLAIN | |
| CONSTRUCTION: FLIMSY: | | | |
| CONSTRUCTION | Y IMPAIRED: YES NO II | F YES, EXPLAIN | |
| 72.3 UNDESIRABLE IMPACT: | YES NO | | |
| 72.4 JOINTS: TYPE: | INADEQUATE: YES NO | | |
| 72.5 GUARDRAIL: TYPE: | MATERIAL: | CONDITION: FUNCTIONING: YES | |
| ALIGNMENT: HORIZONTAL | : GOOD BAD VERTICAL: | | NO |
| SAFETY: SECURELY ATTA | CHED: YES NO PEDESTR | RIAN HAZARDS: YES NO | |
| | | | |
| - APPROACH ROADWAY - COMMEN | rs: | | |
| Artimonon | | | |
| | | | |
| | | | |
| | | | |

| AL SYSTEM | | PUERTO RICO HIGHWAY AUTHORITY | PAGE 6 OF 7 |
|--|--|---|-------------|
| F | BR | IDGE STUDIES AND EVALUATION OFFICE | |
| 100960 | BRID | GE REINSPECTION & EVALUATION REPORT | |
| ATD'S | | | |
| the second second second | | == PROPOSED IMPROVEMENT======= | |
| | | | |
| TYPE OF WORK : | | REHABILITATION | 352 |
| 76- LENGTH OF STRUCTURE IMPR | ROVEMENT : | | 000493 |
| /6 | | | |
| | | INSPECTIONS | |
| | | | |
| - RESERVED | | | 0200 |
| - INSPECTION DATE : | | FEBRUARY-09-2000 | 24 |
| | | 24 MONTHS | N N N |
| | | N/A. | |
| | | | |
| FRACTURE CRITICAL | UNDERWATER | OTHER | |
| | | | |
| | | IMPROVEMENT COST | |
| | | | Second (|
| - BRIDGE IMPROVEMENT COST | | N/A | 200000 A |
| 5- ROADWAY IMPROVEMENT COS | т | N/A | 000012 |
| 6- TOTAL PROJECT COST : | | | 2000 |
| 7- YEAR OF IMPROVEMENT COS | T ESTIMATED : | | |
| | | | |
| | CLAS | SIFICATION AND STRUCTURE DATA== | |
| | | | |
| 8- BORDER BRIDGE : | | | × BJ |
| | The second s | DEFENSE MIGHT | N |
| | | | 0 |
| | | | Ū |
| | | | 0 |
| THE ANALY ANALY ANALY | INVENTORY ROUTE : | | 0 |
| 104- HIGHWAY SYSTEM OF THE 105- FEDERAL LANDS HIGHWAYS | | | 0000 |
| 105- FEDERAL LANDS HIGHWAL | | NO RECONSTRUCTION CONCRETE CAST IN PLACE | 1 |
| | | | 100 |
| 107- DECK STRUCTURE TYPE : 108- WEARING SURF./ PROTECT | r. SYSTEM : | CONCRETE NONE NONE | 04 |
| LOB- WEARING BOILY TRUCK TH | RAFFIC : | A & | 0 |
| | | | |
| 110- DESIGNATED NATIONAL NE 111- PIER OR ABUT. PROTECTI | ION (NAVIGATION) : | | ¥ |
| 112. NBIS BRIDGE LENGTH : . | | BRIDGE OVER HIGHWAY | N |
| 113- SCOUR CRITICAL BRIDGE | : | BRIDGE OVER HIGHWAY 239,277 | 239277 |
| 114- FUTURE AVERAGE DAILY T | RAFFIC | 2018 | 2018 |
| 115- YR. OF FUTURE A.D.T. | | 2018 N/A | |
| 116- MINIM. NAVIG. VERT. CI | LEARANCE . | | |
| VERTICAL LIFT BRIDGE | | | |
| 117- SUFFICIENCY RATING : . | | 09-FEB-2000 | |
| 125- PRIORITY RATING: | | 09-FEB-2000 | 020900 |
| 127- EVALUATION DATE : | | | |
| 130- CRITICAL FRACTURE INSI | P. DATE | | |
| | | | |
| ENGINEER :HERIBERTO GO | | | |
| | | | |
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| | | | |

40 2 SYSTEM PAGE 7 OF 7 PUERTO RICO HIGHWAY AUTHORITY BRIDGE STUDIES AND EVALUATION OFFICE DGE NO. :00960 BRIDGE REINSPECTION & EVALUATION REPORT AUXILIARY ITEMS 1-SIGNS TYPE: MATERIAL: CONDITION: REMARKS : THE REHABILITATION CONSIST IN REPAIR ALL DEFICIENCIES DESCRIBED ON THE ITEM #67.

C.4 March 20, 1998

| ENGINEER: HERIBERTO GONZALEZ | PUERTO RICO HIG | HWAY AUTHORITY | | PAG | B I OF |
|---|--|--|--|-----------------|---|
| 1 COLONDES | BRIDGE STUDIES AND | | | EQUI PMENT | |
| ASSISTANTS: LUIS QUINONEZ | BRIDGE REINSPECTION | 6 EVALUATION REPORT | BUS X | LADDER | s |
| : ALFREDO ERAZO | | | BOAT | CAMERA | |
| | BRIDGE No.: 00960 | FEDERAL SYSTEM | UNDERWATE | R SNOOPE | R 🛢 |
| | | (m) | SNOOPER C | PERATOR | |
| | OAD No.: PR 18 | KM. No. : 0001.700 | | PLAQUE ID | |
| EVALUATION DATE: MAR-20-1998 | | | YES | NO NO. | |
| | | | FI | LM NO. | |
| | IDENTIFICA | TION | | | |
| 1- STATE : | | | | | 721 |
| 2- HIGHWAY AGENCY DISTRICT : | •••••• | Commonwealth of Puer | to Rico | | 01 |
| 3- COUNTY (PARISH) CODE : | ••••••••• | | IN JUAN | | 127 |
| 4- PLACE CODE : | •••••••• | SAN JU | | | 76770 |
| 5- INVENTORY ROUTE : | | | 00001-0 | | 211000010 |
| 6- FEATURES INTERSECTED : | | | | PEDESTRIAN WALK | AY |
| 7- FACILITY CARRIED BY STRUCTURE : | | | | PR 18 | |
| 8- STRUCTURE NUMBER : | | | OF 1 | | 009601 |
| 9- LOCATION : | | | | 0.5 KM N INT PR | 1 4 PR18 |
| 0- INVENTORY ROUTE, MINIMUM VERTICAL CL | | | | | 0444 |
| 1- KILOMETERPOINT : | | | | | 0001700 |
| 2- BASE HIGHWAY NETWORK : | | | | | 1 |
| 13 - LRS INVENTORY ROUTE, SUBROUTE NUMBER | | | | 000 | 000001800 |
| 16- LATITUDE : | | DEGREES 23.4 MINUTES | | | 18232400 |
| 17- LONGITUDE : | | | | | 066043600 |
| 19- BYPASS, DETOUR LENGTH (NEAREST KILOM | | | WAY | | 000 |
| | | | | | |
| | CLASSIFICAT | 10N | | | |
| | | | | | |
| 20- TOLL : | | EE ROAD | | | 3 |
| 1- MAINTENANCE RESPONSABILITY : | D.T.P.W. | | | | 01 |
| 22- OWNER : | D.T.P.W. | | | | 01 |
| 26- FUNCTIONAL CLASS. OF INVENTORY ROUTE | : INTERST | ATE | | | 11 |
| | AGE AND SER | VICE | | | |
| | | | | | |
| 27- YEAR BUILT : | | | 1967 | | 1967 |
| A ANTE ON NO IDEER STRUCTURE : | | O LANES ON / & LANES UND | ER | | 0009 |
| A A A A A A A A A A A A A A A A A A A | | 169,700 | | | 169700 |
| | | | | | |
| 0- YEAR OF A.D.T. : | | | 1996 | | 1996 |
| 0- YEAR OF A.D.T. : | | | 1996 | | 1996 |
| 0- YEAR OF A.D.T. : | STRUCTURE DA | TA | | | 1996 |
| 10- YEAR OF A.D.T. : | STRUCTURE DA | TA PED | ESTRIAN | | 1996 7 044 5 2 |
| 0- YEAR OF A.D.T. : | STRUCTURE DA | TA PED | ESTRIAN | | 1996 7 04 4 3 |
| 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 2- APPROACH ROADWAY WIDTH : | STRUCTURE DA | TA PED 44.30 MT (145. NONE | ESTRIAN | | 044 3 |
| 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 2- APPROACH ROADWAY WIDTH : 3- BRIDGE MEDIAN : | STRUCTURE DA | TA PED 44.30 MT (145. NONE NO | ESTRIAN 30 FT) | | 04 4 3 |
| 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 2- APPROACH ROADWAY WIDTH : 3- BRIDGE MEDIAN : 4- SKEW ANGLE : | STRUCTURE DA | TA PED | ESTRIAN 30 FT) D | | 044 3 00 00 |
| 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 2- APPROACH ROADWAY WIDTH : 3- BRIDGE MEDIAN : 4- SKEW ANGLE : 5- STRUCTURE FLARED : | STRUCTURE DA | TAPED | ESTRIAN 30 FT) D N-N-N-N | | 7 044 3 0 00 00 NNNN |
| 0- YEAR OF A.D.T. : | STRUCTURE DA | TAPED | ESTRIAN 30 FT) D N-N-N-N 5 | | 7 044 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 2- APPROACH ROADWAY WIDTH : 3- BRIDGE MEDIAN : 4- SKEW ANGLE : 5- STRUCTURE FLARED : 6- TRAFFIC SAFETY FEATURES : 7- HISTORICAL SIGNIFICANCE : 8- NAVIGATION CONTROL : | STRUCTURE DA | TA PED 44.30 MT (145. NONE NO NO | ESTRIAN 30 FT) 0 N-N-N-N 5 5 N/A | | 7 04473 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| 0- YEAR OF A.D.T. : | STRUCTURE DA | TA PED | ESTRIAN 30 FT) 0 N-N-N-N | | 7 04473 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| 0- YEAR OF A.D.T. : | STRUCTURE DA | TA PED | ESTRIAN 30 FT) 0 N-N-N-N | | 7 044 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| 0- YEAR OF A.D.T. : | STRUCTURE DA | TA PED | ESTRIAN 30 FT) 0 N-N-N-N | | 7 0447 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| 0- YEAR OF A.D.T. : | STRUCTURE DA | TA PED | ESTRIAN 30 FT) 0 N-N-N-N | | 7 0447 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| 10- YEAR OF A.D.T. : | FF. : PEDESTRIAN OVI CONCRETE CONTINUOS TI | TA PED | ESTRIAN 30 FT) 0 N-N-N-N | | 7 0447 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| YEAR OF A.D.T. : | FF. : PEDESTRIAN OVI CONCRETE CONTINUOS TI NONE | TA PED 44.30 MT (145. NONE NO NO NO NO NO NO NO | ESTRIAN 30 FT) 0 N-N-N-N | | 7 0447 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| 41. DESIGN LOAD : | FF. : PEDESTRIAN OVI CONCRETE CONTINUOS TI NONE | TA PED 44.30 MT (145. NONE NO NO NO NO NO NO NO | ESTRIAN 30 FT) 0 N-N-N-N | | 7 0447 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |

| FEDERAL SYSTEM | | ERTO RICO HIGHWAY | | | PAGE 2 OF 7 |
|--|---|--|-----------------------------|------------------------|-------------------|
| | BRIDG | E STUDIES AND EVAL | UATION OFFICE | | |
| BRIDGE No.: 00960 | BRIDGE | REINSPECTION & EVA | LUATION REPORT | | |
| 47- INV. ROUTE, TOTAL HORIZ. CLEARAN | CE : | | | | 208 |
| 48- LENGTH OF MAXIMUM SPAN : | | 20.84 MT | | (68.36 FT) | 0022174 |
| 49- STRUCTURE LENGTH : | | 22-15 MI- 7700 | | 2.65 FT) | 0004942 |
| 50- CURB OR SIDEWALK WIDTHS : | | | () | .61.70 FT) | 000000 |
| 30 | | N/A | | | |
| | | ===STRUCTURE DATA= | | | A. 1 |
| 51- BRIDGE ROADWAY WIDTH, CURB TO CU | RB : | | 2.10 MT | (6.59 FT) | 00211 |
| 52- DECK WIDTH, OUT TO OUT : | | | | (7.58 FT) | 0023 |
| 53- MI. VERT. CLEAR. OVER BRIDGE ROA | DWAY : | | UNI | IMITED | 9999 |
| 54- MINIMUM VERTICAL UNDERCLEARANCE | | | 4.44 MT | (14' - 7") | H0444 |
| 55- MINIMUM LATERAL UNDERCLEARANCE O | N RIGHT : | | 3.25 MT | (10.8 FT) | H033 |
| 56- MINIMUM LATERAL UNDERCLEARANCE O | N LEFT : | | 2.55 MT | (8.36 FT) | 026 |
| | | ======CONDITION=== | *********** | | |
| | | | | | |
| | ATING: 6 | | | DECK COMMENTS: | |
| 58.1 WEARING SURFACE: MATERIAL: C | CONCRETE CO | NDITION : 6 | | DETACHMENTS OF CONCRET | E WITH EXPOSED RE |
| THICKNESS: | | | | INFORCEMENT, FINE | |
| DETERIORATION: X YES NO E | DRAINAGE: ADEQU | INADEQUATE | | TRANSVERSAL CRACKS WIT | H EFFLORESCENCES |
| PONDING: YES X NO SAFETY | T: YES NO | | | •0 | |
| 58.2 SLAB OR PLATE: MATERIAL: CON | ICRETE | CONDITION | 6 | | |
| X CRACKING: X FINE MEDIU | JM OPEN | | | | |
| TOP BOTTOM | | | | | |
| SPALLING: X S<1 i | in. DEEP x 6 in. | & L>lin. x6 | in. & | | |
| | | in., H ½ in 1 i | | | |
| | and a second second second | | i | | |
| XEFFLORESCENCE EXUDATION RUS | ST STAINS CORROS | ION: LIGHT MODE | RATE SEVERE | | |
| 58.3 MOVEMENT: DECK TO BACKWALL | | TO APPROACH SLAB | cm. | | |
| 5015 1012 2017 2221 21 21 21 | | | | | |
| 1 (56 | 8.4) (58.5) (| (58.6) (58.7) | (58.8) | | |
| | | DEWALKS PARAPETS | | | |
| | | | | | |
| | | i | G/STEEL | | |
| MATERIAL CONDITION RATING | | | | | |
| | | | | | |
| HEIGHT LOSS (cm) | | 1 | -l0Kl | | |
| JOINTS | | | - 0 | | |
| DRAINAGE | | 1 | | | |
| ALIGNMENT | | | - OK | | |
| CORROSION (L-M-S) | 1 1 | I. | | | |
| PAINT: G-GOOD, F-FAIR, | | | - F | | |
| P-POOR, N-NONE | 1 1 | - 1 | 1 1 | | |
| | 1 1 | 1 | 1 1 | | |
| U-USELESS TO PAINT | 8 | | - YES | | |
| U-USELESS TO PAINT | | | 1 | | |
| SAFETY | | | | | |
| SAFETY | at strengthered | 1 | - | | |
| SAFETY | at strengthered | 1 | | | |
| SAFETY | at strengthered | 1 | | | |
| SAFETY CRACKING (F-M-O) SPALLING (S-L) SCALING (L-M-H-S) L | | | - | | |
| SAFETY CRACKING (F-M-O) SPALLING (S-L) SCALING (L-M-H-S) 58.9 LIGHTING STANDARDS: MATERIA | AL: C | NONDITION: | - | TIONING: YES NO | |
| SAFETY | AL: C | XONDITION: SAFETY: | - | | |
| SAFETY CRACKING (F-M-O) SPALLING (S-L) | AL: C SIZE: STRUCTION CONDI | CONDITION: SAFETY: | FUNCTIONING: | YES NO | |
| SAFETY CRACKING (F-M-O) SPALLING (S-L) SCALING (L-M-H-S) 58.9 LIGHTING STANDARDS: MATERIA 58.10 UTILITIES: TYPE: 58.11 JOINTS: EXPANSION CONS LEAKING: YES NO CRA | AL: C SIZE: STRUCTION CONDI ACKING: FINE | XONDITION: SAFETY: ITION: MEDIUM OPEN | FUNCTIONING: SPALLING: S | YES NO MALL LARGE | |
| SAFETY CRACKING (F-M-O) SPALLING (S-L) | AL: C SIZE: STRUCTION CONDI ACKING: FINE | CONDITION: SAFETY: | FUNCTIONING: SPALLING: S | YES NO | |

| ARAL SYSTEM | | |
|---|---|---|
| AIDSE NO.: 00960 | PUERTO RICO HIGHWAY AUTHORITY BRIDGE STUDIES AND EVALUATION OFFICE BRIDGE REINSPECTION & EVALUATION REPORT | PAGE 3 OF 7 |
| 59- SUPERSTRUCTURE: SATISFACTORY 59.1 BEARING DEVICES: TYPE PAINT: GOOD FA CONDITION: 59.2 ERIDGE SEATS, PEDESTAL, GROU DIRECTLY ON CONCRETE | RATING: 6 FIXED MOVABLE OUT OF PLUMB IR POOR NOME USELESS TO PAINT FUNCTIONING: YES NO F PADS, ABUTMENTS OR PIER SEATS WHERE BEAMS BEAR | SUPERSTRUCTURE COMMENTS: BEAMS TOWARD CAGUAS LANES WITH BIG DET ACHMENTS OF CONCRETE DUE TO TRUCK IMPA CT. |
| SCALING: L M H | RACKING: X F M O SPALLING: X S L S CRUSHING: | |
| 59.3 STEEL-BEAMS: TYPE: CONDITION: CO | DIMENSIONS(height;width;thickness): RROSION: L M S PAINT: G F P N U | |
| | S, SLAB, T-BEAM, TYPE: T-BEAM CRACKING: X F M O SPALLING: S X L | |

- SCALING: L M H S 59.5 TRUSSES: TYPE: CONDITION: CORROSION: L M S DAMAGE: DEFORMATION: PAINT: G F P N U
- A-TRUSS B-UPPER & LOWER LATERAL BRACING C-PORTALS D-FLOOR BEAMS E*-STRINGERS
- ATROSS H=UPPER & LOWER LATERAL BRACING C=PORTALS D=FLOOR BEAMS E*=STRINGERS 59.6 DRAINAGE: TYPE: CONDITION: FUNCTIONING: YES NO 59.7 HINGES: CONDITION: FUNCTIONING: YES NO MOVEMENT: YES NO ALIGNMENT: GOOD BAD PAINT: G F P N U 59.8 DEFLECTIONS: X NORMAL EXCESSIVE cms. 59.9 VIBRATIONS: X MINIMAL MODERATE EXCESSIVE

60- SUBSTRUCTURE: SATISFACTORY RATING: 6

| | WINGWALL | 60.1.2 BREAST & BACKWALL | FOOTING | and the second second | A Constant of | 60.2.2 | COLUMNS | 50.2.4 FOOTINGS | 60.4.1 CAPS | 60.4.2 | 60.4.3 PILES |
|------------------|-----------|--------------------------------|---------|-----------------------|---------------|--------|----------|--------------------|----------------|-------------------------|-----------------------|
| TERIAL | | 1 | | | CONCRETE | 1 | CONCRETE | | | 1 | |
| NDITION RATING | | | | | F | | 6 | | | | |
| RACKING (F-M-O) | 1 | 1 1 | 1 | I | S | I | F | 1 | I | 1 | 1 |
| PALLING (S-L) - | | | | | | | s | | | · | |
| CALING (L-M-H-S) | 1 | 1 | í i | 1 | 1 | 1 | 1 | 1 1 | 1 | 1 | 1 |
| ORROSION (L-M-S) | | | | | | | | | | • • • • • • • • • • • | |
| AINT (G-F-P-N-U) | 1 | 1 | l. | L | F | I | F | | l | 1 | 1 |
| OVEMENT | | | | | NO | | NO | | | ·l | |
| ROSION | 1 | 1 | 1 | l | 1 | | NO | I | I | 1 | 1 |
| NDERMINING | | | | | | | NO | | | - | |
| | L | L | | | 1 | L | | | | 1 | 1 |
| | | | | | | | | | | | |
| - SUBSTRUCTURE C | OMMENTS : | | | | | | | | | | |

| TRAL SYSTEM | | PUERTO RI | CO HIGHWAY AUTHORITY | | PAGE 4 OF 7 | |
|-------------------------|------------------|----------------------------|--------------------------|--------------------|-------------|----|
| | | | ES AND EVALUATION OFFIC | | | |
| ADGE NO. : 00960 | | | | | | |
| | | BRIDGE REINSPE | CTION & EVALUATION REPOR | RT | | |
| - CHANNEL & CHANNEL PE | OTECTION : N/A | | | | | |
| 61.1 CHANNEL SCOUR (EXT | TENT) : | RA | FING : N | CHANNEL COMMENTS : | | |
| 61.2 EMBANKMENT EROSIO | | | | | | |
| 61.4 | (1111) | | | | | |
| | | | | | | |
| | | · · · · | | | | |
| | | CONDITION FU | NCTIONING | | | |
| | TYPE | MATERIAL RATING | | | | |
| | 1 1 | 1 13 | YES NO | | | |
| | <u>├</u> | <u> </u> | | | | |
| 61.3 PROTECTIVE DEVIC | CE | i i | i i | | | |
| 61.4 FENDER SYSTEM - | | | | | | |
| 61.5 RIP RAP | 1 1 | i i | 1 1 | | | |
| 61.6 SPUR DIKES, JETT | IES | 1 | | | | |
| | | | | | | |
| | | | | | | |
| 61.7 OBSTRUCTION (DE | | | | | | |
| 61.8 CHANNEL CHANGE: | | | | | | |
| | | and a second second second | | | | |
| | | ES, EXPLAIN | | | | |
| 61.9 ADEQUATE WATERW | | IF NO, EXPLAIN | | | | |
| 61.10 SURROUNDING ARE | | YES NO IF YES, EN | PLAIN | | | |
| | | TES NO IF YES, EXI | | | | |
| 61.11 LOCATION OF PIE | RS AND/OR ABUTME | ENTS: DETRIMENTAL: | YES NO | | | |
| IF YES, EXPLAI | N | | | | | |
| 61.12 OTHER FEATURES | THAT MAY AFFECT | STRUCTURE: | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 62- CULVERT AND RETAINI | NG WALLS :N/A | RAT | ING :N | CULVERT COMMENTS: | | |
| | | | | | | |
| _ | | | | | | |
| 162 | BARREL 62 . 2HE | ADWALL 62.3CUT-OFFWALL | 62.4RETAINING WALL | | | |
| | | | <u> </u> | | | |
| | | i | 1 | | | |
| MATERIAL | | | | | | |
| CONDITION RATING | | 1 | 1 | | | |
| FUNCTIONING (Y-N) | 1 | | | | | |
| CRACKING (1 1 0/ 1 | | | i i | | | |
| SPALLING (S-L) | 1 | | | | | |
| SCALING (L-M-H-S) | | | | | | |
| CORROSION (L-M-S) | D Doors | | | | | |
| SETTLEMENT (Y-N) | | | | | | |
| ALIGNMENT (Y-N) | 1 | 1 | , I. | | | |
| PAINT (G-F-P-N-U) | | | | | | |
| L | | | | | | |
| | | | | | | |
| 63- METHOD USED TO DETI | ERMINE OPERATING | RATING | | | | 2 |
| 64- OPERATING RATING : | | PEDESTRIAN | | | 80 | |
| 65. METHOD USED TO DET | ERMINE INVENTORY | RATING | | | | 2 |
| 66- INVENTORY RATING : | | PEDESTRIAN | | | 80 | 10 |
| | | | | | | |
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| PAGE 5 07 7 BRIDE STEM DUE DO HIGHNY ADDRERTY DE DO STATUS DE DOS DE DO STATUS DE DOS DE DO STATUS DE DOS DEDOS DE DOS DE DOS DEDOS DE DOS DEDOS DE DOS DE DOS DEDOS DE DOS DE DOS DEDOS DE DOS DEDOS DE DOS DEDOS DE DOS DEDOS DE DOS DE DOS DEDOS DE DOS DEDOS | | |
|--|----------------------------------|---|
| NO.1 00560 BRIDGE REINSPECTION & EVALUATION REPORT FINCTURAL EVALUATION : REALTING SURFACE HAVE CONCRETE LOSE WITH EXPOSED STEEL. BOTTOM SLAH HAVE PINE TRANSVERAL CHACKS WITH PERIORECENSES BEALING MUE LIGHT COMBOSION. REALTING SURFACE HAVE CONCRETE LOSE WITH EXPOSED STEEL. DIFFECT. DAMP AT NEDICAL CENTER SIDE HAVE LARGE SPALLING WITH EXPOSED STEEL. NA. SURGERCERRENCE, VERTICAL & HORIZONTAL ; NA. SURGERCERRENCE : NA. SURGERCERRENCE : SURGERCERRENCERERENCE : SURGERCERRENCE : SURGERCERE | LAL SYSTEM | - Latto Alco Alco Alchari Adirokili |
| PERSONNEL EVALUATION : | | |
| VENERAL DAVE DAVE DAVE CONCERTS LOSE WITH EFFLORECHICS. BEARING HAVE LIGHT CORRESION. BEARS AT CARLES WITH REFLORECHICS. BEARING HAVE LIGHT CORRESION. BEARS AT CARLES WAY HAVE BEG SPALLING WITH EXPOSED STELL BY IMPACT. HAMP AT WEDICAL CHRIER BIDE HAVE LARGE SPALLING WITH EXPOSED STELL. . DECK GEOMETRY : | 103 No. : 00960 | BRIDGE REINSPECTION & EVALUATION REPORT |
| PINE TRANSMERAL CEACES WITH EFFLORECENCES. BEARING HAVE LIGHT CORRECTION. BENNE AT CARGING WAY BERG EFALLING WITH EXPOSED STEEL BY IMPACT. RAMP AT HEDICAL CENTER SIDE HAVE LARGE FRALLING WITH EXPOSED STEEL. DECK GEOMETRY : | . STRUCTURAL EVALUATION : | |
| PINE TRANSMERAL CENCES WITH EFFLORECENCES. BEARING HAVE LIGHT CORRECTION. BEARS AT CARGING WAY HAVE BIG EPALLING WITH EXPOSED STEEL BY IMPACT. RAMP AT HEDICAL CENTER SIDE HAVE LARGE SPALLING WITH EXPOSED STEEL. DCC GEOMETRY : | WEARING SURFACE HAVE CON | RETE LOSE WITH EXPOSED STEEL BOTTON CLAR HAVE |
| BENG AT CAGUAS MAY HAVE DIG EPALLING HITH EXPOSED STEEL BY IMPACT. HAMP AT HEDICAL CENTER SIDE HAVE LARGE SPALLING MITH EXPOSED STEEL. DECK GEOMETRY : N/A. DECK GEOMETRY : N/A. GENERCLEARANCE, VERTICAL & HORIZONTAL : MERTS MINIMUM TOLERABLE LIMITS TO BE LEFT IN PLACE AS IS. BELOGE FORTING : MITERIAL DISCONTRY : N/A. S MATERIAL ADDRESS SLIGHT - 11 TO 100 YEARS. OCASIONAL - 3 TO 10 YEARS. FREQUENT - LESS THAN 3 YEARS. INFORMATION INCOMPSIENCE. HIGH MAY PASSABLE IN A MATTER OF HOUSS. BIGHIFICANT - TRAFFIC DELAYS OF UP TO SEVERAL DA N/A. MATERIAL ADDRESS OF THE IN DIACE AS IS. MATERIAL ADDRESS OF HOUSS. BIGHT - LESS THAN 3 YEARS. INFORMATION INCOMPSIENCE. HIGH MAY PASSABLE IN A MATTER OF HOUSS. BIGHTPICAT - TRAFFIC DELAYS OF UP TO SEVERAL DA N/A. N/ | FINE TRANSVERSAL CRACKS | ITH REFLORGER PRAINS UND LIGHT CORPORTING |
| NEDICAL CENTER SIDE HAVE LARGE SPALLING WITH EXPOSED STEEL. BGCK GEOMETRY : N/A. GEOREGENERTY : N/A. GEOREGENERTY : N/A. GEOREGENERTY : N/A. BEITOG FOSTING : MICHANALE LIMITS TO BE LEFT IN PLACE AS IS. BEITOG FOSTING : MICHANALE LIMITS TO BE LEFT IN PLACE AS IS. BEITOG FOSTING : MICHANALE LIMITS TO BE LEFT IN PLACE AS IS. BEITOG FOSTING : MICHANALE LIMITS TO BE LEFT IN PLACE AS IS. BEITOG FOSTING : MICHANALE LIMITS TO BE LEFT IN PLACE AS IS. BEITOG FOSTING : MICHANALE LIMITS TO BE LEFT IN PLACE AS IS. BEITOG FOSTING : MICHANICAL STANDARD STAN | | |
| DECK GEOMETRY : N/A. N/A. SUBJERCLEARANCE, VERTICAL & HORIZONTAL : MEDTS MINIMUM TOLERABLE LIMITS TO BE LEFT IN PLACE AS 15. BELIDGE FOSTING : MATERNAN ADEQUACY : N/A. SILDGE FOSTING : N/A. MARTENAN ADEQUACY : N/A. SUBJERCLEARANCE, VERTICAL & HORIZONTAL : MATERNAN ADEQUACY : N/A. MARTENAN ADEQUACY : N/A. SUBJERCLEARANCE, VERTICAL & HORIZONTAL : MARTENAN ADEQUACY : N/A. MARTENAN ADEQUACY : N/A. SUBJERCLEARANCE, MINIMUM PARABLE, SLIGHT - 11 TO 100 YEARS, OCASSIONAL - 3 TO 10 YEARS, FREQUENT - LESS THAN 3 YEARS. INSTRUMENT, ADEQUACY I TRAFFIC WITH HEADUTING HADDOHIP SEVERE - LONG TEMP BLAYS TO TRAFFIC WITH HEADUTING HADDOHIP APPROACH ROADMANT ALIGNMENT : N/A. N/A. | | |
| BECK GEOMETRY : N/A. SUBJERCIEARANCE, VERTICAL & HORIZONTAL : MEETS MININUM TOLERABLE LIMITS TO BE LEFT IN PLACE AS IS. BRIDGE FOSTING : N/A. SUBJECT OFFICE COREATER THAN 100 YEARS. SLIGHT - 11 TO 100 YEARS. COASTONAL - 3 TO 10 YEARS. FREQUENT - LESS THAN 3 YEARS. N/A. REMOTE - GREATER THAN 100 YEARS. SLIGHT - 11 TO 100 YEARS. COASTONAL - 3 TO 10 YEARS. FREQUENT - LESS THAN 3 YEARS. N/A. REMOTE - GREATER THAN 100 YEARS. SLIGHT - 11 TO 100 YEARS. COASTONAL - 3 TO 10 YEARS. FREQUENT - LESS THAN 3 YEARS. INSTONIFICANT - MINOR INCONVENTENCE. HIGHWY PASSALE IN A MATTER OF HOURS. SIGNIFICANT - TRAFFIC DELAYS OF UP TO SEVERAL DAY SEVERE - LONG TERM DELAYS TO TRAFFIC WITH RESULTING HANDHIP APPROACH ROADWAY ALIGNMENT | | |
| DECK GEOMETRY : N/A. UNDERCLEARANCE, VERTICAL & BORIZONTAL ; UNDERCLEARANCE, VERTICAL & BORIZONTAL ; METES MINIMUM TOLERABLE LIMITS TO BE LEFT IN PLACE AS IS. BRIDGE ROSTING : MATERNAN ADEQUACY : N/A. NA N/A. SINGER FORTING : N/A. N/A. SINGERFORT FOR THAN 100 YEARS. SLIGHT - 11 TO 100 YEARS. CONSTITUTE AND THAN THAN INCOMPARISMES. SIGNIFICANT - MINOR INCOMPARISMES APPROACH BLADENTS APPROACH ROADMAY ALIGNMENT * MO DEPARTING AND ADD DEPART APPROACH BLADENT AND MATTER OF BOURS. SIGNIFICANT - MINOR INCOMPARISMENT APPROACH BLADENT APPROACH | | |
| N/A. UNDERCLEARANCE, VERTICAL & HORIZONTAL ; | | |
| N/A. UNDERCLEARANCE, VERTICAL & HORIZONTAL ; | | |
| N/A. UNDERCLEARANCE, VERTICAL & HORIZONTAL ; | | |
| N/A. UNDERCLEARANCE, VERTICAL & HORIZONTAL ; | | |
| UNDERCLEARANCE, VERTICAL & HORIZONTAL; INDERCLEARANCE, VERTICAL & HORIZONTAL; METES MINIMUM TOLERABLE LIMITS TO BE LEFT IN PLACE AS IS. BRIDGE FOSTING : | . DECK GEOMETRY : | |
| MEETS MINIMUM TOLERABLE LIMITS TO BE LEFT IN PLACE AS IS. SEILOGE FOSTING : | N/A. | |
| <pre>MEETS MINIMUM TOLERABLE LIMITS TO BE LEFT IN PLACE AS IS. 5 SELICE FOSTING :</pre> | | |
| 5. BRIDGE FOSTING: | . UNDERCLEARANCE, VERTICAL & HUR | ZUNTAL : |
| DENDGE FOSTING: | MEETS MINIMUM TOLERABLE : | |
| WATERMAY ADEQUACY : | | |
| N/A. REMOTE - GREATER THAN 100 YEARS. SLIGHT - 11 TO 100 YEARS. CCASSIONAL - 3 TO 10 YEARS. FREQUENT - LESS THAN 3 YEARS. INSIGNIFICANT - MINOR INCONVENIENCE. HIGHWAY PASSABLE IN A MATTER OF HOURS. SIGNIFICANT - TRAFFIC DELAYS OF UP TO SEVERAL DAY SEVERE - LONG TERM DELAYS TO TRAFFIC WITH RESULTING HARDSHIP 2. APPROACH ROADWAY ALIGNMENT : | - BRIDGE POSTING : | N/A. |
| N/A. REMOTE - GREATER THAN 100 YEARS. SLIGHT - 11 TO 100 YEARS. OCASSIONAL - 3 TO 10 YEARS. FREQUENT - LESS THAN 3 YEARS. INSIGNIFICANT - MINOR INCONVENIENCE. HIGHWAY PASSABLE IN A MATTER OF HOURS. SIGNIFICANT - TRAFFIC DELAYS OF UP TO SEVERAL DAY SEVERE - LONG TERM DELAYS TO TRAFFIC WITH RESULTING HARDSHIP 2. APPROACH ROADWAY ALIGNMENT : | ADEOLIACY I | |
| REMOTE - GREATER THAN 100 YEARS. SLIGHT - 11 TO 100 YEARS. OCASSIONAL - 3 TO 10 YEARS. FREQUENT - LESS THAN 3 YEARS. INSIGNIFICANT - MINOR INCONVENIENCE. HIGHWAY PASSABLE IN A MATTER OF HOURS. SIGNIFICANT - TRAFFIC DELAYS OF UP TO SEVERAL DAY SEVERE - LONG TERM DELAYS TO TRAFFIC WITH RESULTING HARDSHIP 2- APPROACH ROADWAY ALIGNMENT : | - WATERWAT ADBOART | |
| REMOTE - GREATER THAN 100 YEARS. SLIGHT - 11 TO 100 YEARS. OCASSIONAL - 3 TO 10 YEARS. FREQUENT - LESS THAN 3 YEARS. INSIGNIFICANT - MINOR INCONVENIENCE. HIGHWAY PASSABLE IN A MATTER OF HOURS. SIGNIFICANT - TRAFFIC DELAYS OF UP TO SEVERAL DAY SEVERE - LONG TERM DELAYS TO TRAFFIC WITH RESULTING HARDSHIP 2- APPROACH ROADWAY ALIGNMENT : | | |
| INSIGNIFICANT - MINOR INCONVENTENCE. HIGHWAY PASSADD IN THE SEVERE - LONG TERM DELAYS TO TRAFFIC WITH RESULTING HARDSHIP 2- APPROACH ROADWAY ALIGNMENT : | N/A. | LESS THAN 3 YEARS. |
| <pre>INSIGNIFICANT - MINOR INCONVENTENCE. HIGHWAY PASSADD IN THE SEVERE - LONG TERM DELAYS TO TRAFFIC WITH RESULTING HARDSHIP 2- APPROACH ROADWAY ALIGNMENT :</pre> | THE TOP YEAR | S SLIGHT - 11 TO 100 YEARS. OCASSIONAL - 3 TO 10 YEARS. FREQUENT - LESS THAT - |
| SEVERE - LONG TERM DELAYS TO TRAFFIC WITH REDURING THEORY AND | REMOTE - GREATER THAN 100 TEA | TENCE HIGHWAY PASSABLE IN A MATTER OF HOURS. SIGNIFICANT - TRAFFIC DELAIS OF OF 10 DELAIS |
| 2- APPROACH ROADWAY ALIGNMENT : | INSIGNIFICANT - MINOR INCONVE | DARELC WITH RESULTING HARDSHIP |
| N/A. 72.2 SLAB OR PAVEMENT CONDITION: 6 MATERIAL: RAMPS 72.2 SLAB OR PAVEMENT CONDITION: 6 MATERIAL: RAMPS 72.2 SLAB OR PAVEMENT CONDITION: 6 STALLING: L S SCALING: L M X H S UNNEVEN: YES NO ROUGH: YES NO SETTLEMENT: YES NO MOVEMENT: APPROACH SLAB-BACKNALL: YES NO BREAKING UP: EXCESSIVE DEFORMATION: SETTLEMENT: PAVEMENT-APPROACH SLAB: YES NO EMBANKMENT: CONDITION: MOVEMENT: PAVEMENT-APPROACH SLAB: YES NO EMBANKMENT: CONDITION: FUNCTIONING: YES NO EMBANKMENT: CONDITION: FUNCTIONING: YES NO EMBANKMENT: CONDITION: INTEGRITY IMPAIRED: YES NO IF YES, EXPLAIN 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 72.4 JOINTS: TYPE: NATERIAL: CONDITION: 72.5 GUARDEALL: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 73.4 LIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | SEVERE - LONG TERM DELAYS TO | APPIC WIN ADDITION |
| N/A. 72.2 SLAB OR PAVEMENT CONDITION: 6 MATERIAL: RAMPS 72.2 SLAB OR PAVEMENT CONDITION: 6 MATERIAL: RAMPS 72.2 SLAB OR PAVEMENT CONDITION: 1 S SCALING: 1 M X H S UNNEVEN: YES NO ROUGH: YES NO SETTLEMENT: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: EXCESSIVE DEFORMATION: SETTLEMENT: PAVEMENT-APPROACH SLAB: YES NO EMBANKMENT: CONDITION: MOVEMENT: PAVEMENT-APPROACH SLAB: YES NO EMBANKMENT: CONDITION: FUNCTIONING: YES NO EMBANKMENT: CONDITION: FUNCTIONING: YES NO EMBANKMENT: CONDITION: INTEGRITY IMPAIRED: YES NO IF YES, EXPLAIN 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 72.4 JOINTS: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 73.5 GUARDRALL: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 73.6 JOINTS: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 74.6 JOINTS: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 75.6 JOINTS: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 75.6 JOINTS: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 75.6 JOINTS: FUNCTIONIL: GOOD EAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO 75.6 ALIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: YES NO 75.6 JOINTS: FUNCTIONING: YES NO 75.7 SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO 75.7 SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO 75.7 SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO 75.7 SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO 75.7 SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO 75.7 SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO 75.7 SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO 75.7 SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO 75.7 SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO 75.7 SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO 75.7 SAFETY: SECURELY ATTACHED: YE | | |
| 72.2 SLAB OR PAVEMENT CONDITION: 6 MATERIAL: RAMPS CRACKING: F N O SPALLING: L S SCALING: L M X H S UNNEVEN: YES NO ROUGH: YES NO SETTLEMENT: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: EXCESSIVE DEFORMATION: SAFETY: HAZARDOUS YES NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO SAFETY: HAZARDOUS YES NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO FUNCTIONING: YES NO EROSTON: YES NO IF YES, EXPLAIN CONSTRUCTION: FLIMSY: YES NO EROSTON: YES NO IF YES, EXPLAIN INTEGRITY IMPAIRED: YES NO CONSTRUCTION: FLIMSY: YES NO 100 UNDESIRABLE IMPACT: YES NO 100 UNDESIRABLE IMPACT: YES NO 100 SATISFACTORY ALIGNMENT: YES NO 101 ONTS: TYPE: INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 102.4 JOINTS: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 102.4 JOINTS: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 103 UNDESIRABLE IMPACT: YES NO 104 OFFICIAL: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO 104 JOINTLE: HORIZONTAL: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO 104 SAFETY: SECURELY ATTACHED: YES NO 105 PEDESTRIAN HAZARDS: YES NO | 2- APPROACH ROADWAY ALIGNMENT : | |
| 72.2 SLAB OR PAVEMENT CONDITION: 6 MATERIAL: RAMPS CRACKING: F N O SPALLING: L S SCALING: L M X H S UNNEVEN: YES NO ROUGH: YES NO SETTLEMENT: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: EXCESSIVE DEFORMATION: SAFETY: HAZARDOUS YES NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO SAFETY: HAZARDOUS YES NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO FUNCTIONING: YES NO EROSTON: YES NO IF YES, EXPLAIN CONSTRUCTION: FLIMSY: YES NO EROSTON: YES NO IF YES, EXPLAIN INTEGRITY IMPAIRED: YES NO CONSTRUCTION: FLIMSY: YES NO 100 UNDESIRABLE IMPACT: YES NO 100 UNDESIRABLE IMPACT: YES NO 100 SATISFACTORY ALIGNMENT: YES NO 101 ONTS: TYPE: INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 102.4 JOINTS: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 102.4 JOINTS: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 103 UNDESIRABLE IMPACT: YES NO 104 OFFICIAL: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO 104 JOINTLE: HORIZONTAL: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO 104 SAFETY: SECURELY ATTACHED: YES NO 105 PEDESTRIAN HAZARDS: YES NO | | |
| 72.2 SLAB OR PAVEMENT CONDITION . S SCALING: L M X H S UNNEVEN: YES NO ROUGH: YES NO CRACKING: F N O SPALING: L S SCALING: L M X H S UNNEVEN: YES NO ROUGH: YES NO SETTLEMENT: YES NO MOVEMENT: APPROACH SLAB-BACKNALL: YES NO BREAKING UP: EXCESSIVE DEFORMATION: SAFETY: HAZARDOUS YES NO DRAINAGE: INADEQUATE: YES NO PONDING: YES NO SAFETY: HAZARDOUS YES NO DRAINAGE: INADEQUATE: YES NO PONDING: YES NO CONSTRUCTIONING: YES NO EROSTON: YES NO EMEANIMENT: CONDITION: FUNCTIONING: YES NO EROSTON: YES NO IF YES, EXPLAIN FUNCTIONING: YES NO EROSTON: YES NO IF YES, EXPLAIN 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 72.5 GUARDRALL: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRALL: TYPE: NATERIAL: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO 73.5 GUARDRALL: TYPE: NO PEDESTRIAN HAZARDS: YES NO | N/A. | |
| 72.2 SLAB OR PAVEMENT CONDITION . S SCALING: L M X H S UNNEVEN: YES NO ROUGH: YES NO CRACKING: F N O SPALING: L S SCALING: L M X H S UNNEVEN: YES NO ROUGH: YES NO SETTLEMENT: YES NO MOVEMENT: APPROACH SLAB-BACKNALL: YES NO BREAKING UP: EXCESSIVE DEFORMATION: SAFETY: HAZARDOUS YES NO DRAINAGE: INADEQUATE: YES NO PONDING: YES NO SAFETY: HAZARDOUS YES NO DRAINAGE: INADEQUATE: YES NO PONDING: YES NO CONSTRUCTIONING: YES NO EROSTON: YES NO EMEANIMENT: CONDITION: FUNCTIONING: YES NO EROSTON: YES NO IF YES, EXPLAIN FUNCTIONING: YES NO EROSTON: YES NO IF YES, EXPLAIN 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 72.5 GUARDRALL: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRALL: TYPE: NATERIAL: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO 73.5 GUARDRALL: TYPE: NO PEDESTRIAN HAZARDS: YES NO | ta a a de des | MATERIAL : RAMPS |
| CRACKING: F N O SPAINAR. SETTLEMENT: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: EXCESSIVE DEFORMATION: SETTLEMENT: YES NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO SAFETY: HAZARDOUS YES NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO FUNCTIONING: YES NO EROSION: YES NO IF YES, EXPLAIN FUNCTIONING: YES NO CONSTRUCTION: FLIMSY: YES NO INTEGRITY IMPAIRED: YES NO 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 72.5 GUARDRALL: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO ALIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | 72.2 SLAB OR PAVERIE | TION : YES NO ROUGH: YES NO |
| SETTLEMENT: YES NO MOVEMENT WINGER: INADEQUATE: YES NO PONDING: YES NO SAFETY: HAZARDOUS YES NO DRAINAGE: INADEQUATE: YES NO PONDING: YES NO MOVEMENT: PAVEMENT-APPROACH SLAB: YES NO EMBANKMENT: CONDITION: FUNCTIONING: YES NO ENDIN: FLIMSY: YES NO INTEGRITY IMPAIRED: YES NO IF YES, EXPLAIN INTEGRITY IMPAIRED: YES NO IF YES, EXPLAIN 1000000000000000000000000000000000000 | | ING: D BREAKH SLAB-BACKWALL: YES NO BREAKING UP: EXCESSIVE DEFORMATION: |
| SAFETY: HAZARDOUS YES NO DARINGUM OF MEMANKMENT: CONDITION: MOVEMENT: PAVEMENT-APPROACH SLAB: YES NO EMBANKMENT: CONDITION: FUNCTIONING: YES NO EROSION: YES NO IF YES, EXPLAIN CONSTRUCTION: FLIMSY: YES NO IF YES, EXPLAIN INTEGRITY IMPAIRED: YES NO IF YES, EXPLAIN 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INNDEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 72.5 GUARDRAIL: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRAIL: TYPE: GOOD EAD VERTICAL: GOOD EAD JOINTS: FUNCTIONING: YES NO ALIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: GOOD EAD JOINTS: FUNCTIONING: YES NO SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | SETTLEMENT: YES NO | WEMENT: APPROACH DEEL YES NO PONDING: YES NO |
| MOVEMENT: PAVEMENT-APPROACH SLAS: NO EROSION: YES NO IF YES, EXPLAIN FUNCTIONING: YES NO EROSION: YES NO IF YES, EXPLAIN CONSTRUCTION: FLIMSY: YES NO IF YES, EXPLAIN 1NTEGRITY IMPAIRED: YES NO IF YES, EXPLAIN 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INADEQUATE: YES NO 72.5 GUARDRAIL: TYPE: MATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRAIL: TYPE: MATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRAIL: TYPE: MATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRAIL: GOOD EAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO ALIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: GOOD EAD VERTICAL: SAFETY: SECURELY ATTACHED: YES NO | HAZARDOUS YES | CONDITION: |
| FUNCTIONING: IDS CONSTRUCTION: FLIMSY: YES NO INTEGRITY IMPAIRED: YES NO IF YES, EXPLAIN 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 72.5 GUARDRAIL: TYPE: MATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRAIL: TYPE: GOOD EAD VERTICAL: GOOD EAD JOINTS: FUNCTIONING: YES NO ALIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: GOOD EAD JOINTS: FUNCTIONING: YES NO SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | MONEMENT · PAVEMENT - APPROACH | SLAB: YES NO EMPARIMENT. OF YES, EXPLAIN |
| CONSTRUCTION: FLIMSY: YES NO INTEGRITY IMPAIRED: YES NO 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 72.5 GUARDRAIL: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRAIL: TYPE: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO ALIGNMENT: HORIZONTAL: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | FUNCTIONING: | 100 |
| INTEGRITY IMPARED: INC 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO 72.5 GUARDRALL: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRALL: TYPE: NATERIAL: GOOD EAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO ALIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | FLIMSY: | |
| 72.3 UNDESIRABLE IMPACT: YES NO 72.4 JOINTS: TYPE: INADEQUATE: YES NO 72.4 JOINTS: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRAIL: TYPE: NATERIAL: CONDITION: FUNCTIONING: YES NO 72.5 GUARDRAIL: TYPE: NATERIAL: GOOD BAD JOINTS: FUNCTIONING: YES NO ALIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | INTEGRITY IMP | RED: YES NO IF YES, EXPLAIN |
| 72.4 JOINTS: TYPE: INADEQUARY CONDITION: FUNCTIONING: YES NO 72.5 GUARDRALL: TYPE: NATERIAL: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO ALIGNMENT: HORIZONTAL: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | YES | NO NO |
| 72. GOUNDRALL: TYPE: 72.5 GUARDRALL: TYPE: ALIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING: YES NO SAFETY: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | | VADEQUATE: YES NO SATISFACIONI ALIGUMENTO TRADUCTORING VEC NO |
| ALIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: GOOD EAD CONTENT THEORY AND ALIGNMENT: HORIZONTAL: GOOD EAD VERTICAL: GOOD EAD CONTENT THEORY AND ALIGNMENT: SECURELY ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | TYPE: | MATERIAL: TOTATE TOTATE, EDUCTIONING, YES NO |
| 2- APPROACH ROADWAY - COMMENTS: | BLICHMENT: HORIZONTAL: | DOD BAD VERTICAL: GOOD BAD COLLEGATION |
| | 2- APPROACH ROADWAY - COMMENTS: | |
| | 265 (559) | |
| | | |

| | PUERTO RICO HIGHWAY AUTHORITY | PAGE 6 OF 7 |
|--|--|-------------|
| STEM | BRIDGE STUDIES AND EVALUATION OFFICE | PAGE 0 01 |
| R. | | |
| p. 100960 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| | ======PROPOSED IMPROVEMENT======= | |
| TTS OF NORK : | REHABILITATION | 352 AQ |
| TTS OF WORK : | | 00049/3 20 |
| BUTH OF STATE | | U |
| | INSPECTIONS | |
| | Mapriz 20-1998 | 0398 |
| # ISON | MARCH-20-1998 24 MONTHS | 24 |
| RESIGNATED INSPECTION FRECUENCY : | 24 MONTHS | NNN |
| CESIGNATED INSPECTION FRECUENCY : | N/A. | |
| CONTICAL FLAI. INSTRUCT BILLOT CONTICAL | N/A | |
| FRACTURE CRITICAL UNDERWATER | OTHER | |
| - | IMPROVEMENT COST | |
| | | 000009 |
| - BRIDGE IMPROVEMENT COST : | N/A | 000000 |
| COST . | | 000012 |
| - TOTAL PROJECT COST : | (49.30X2.31X\$1035X10%)=\$11,787 | 1998 |
| 7- YEAR OF IMPROVEMENT COST ESTIMATED : | 1998 | |
| - | =CLASSIFICATION AND STRUCTURE DATA== | |
| | | |
| | | |
| BORDER BRIDGE STRUCTURE NUMBER : NO- STRAHNET HIGHWAY DESIGNATION : | DEFENSE HIGHWAY | 1 |
| 00- STRAHNET HIGHWAY DESIGNATION : | NO PARALLEL STRUCTURE TRAFFIC NOT CARRIED | m Az |
| 1- PARALLEL STRUCTURE DESIGNATION | TRAFFIC NOT CARRIED | 20p |
| 2- DIRECTION OF TRAFFIC : | N/A N.H.S. | V 1 |
| | | 1 |
| 04- HIGHWAY SYSTEM OF THE INVENIORI RECEIPTON 05- FEDERAL LANDS HIGHWAYS : | | 0000 |
| 55- FEDERAL LANDS HIGHMAN | NO RECONSTRUCTION CONCRETE CAST IN PLACE | 1 |
| 66- YEAR RECONSTRUCTION | CONCRETE NONE NONE | 100 |
| 07- DECK STRUCTURE TYPE : | CONCRETE NONE NONE | 04 |
| A AUERACE DALLY TRUCK TRAFFIC : | 4 % | 0 |
| | | 5 |
| 10- DESIGNATED NATIONAL NETWORK 1 | N/A | Y |
| 12- NBIS BRIDGE LENGTH : | BRIDGE OVER HIGHWAY | N |
| 12- NBIS BRIDGE LENGTH : 13- SCOUR CRITICAL BRIDGE : | 220 277 | 239277 |
| 13- SCOUR CRITICAL BRIDGE : | | 2016 |
| 15- YR. OF FUTURE A.D.T. : | 2016 N/A | |
| 16- MINIM. NAVIG. VERT. CLEARANCE : | N/A | |
| VERTICAL LIFT BRIDGE : | ······ | |
| 17- SUFFICIENCY RATING : | | |
| | | 032098 |
| 127- EVALUATION DATE : | | |
| ENGINEER HERIBERTO GONZALEZ | | |
| | | |
| | | |
| | | |

1 AL SYSTEM PUERTO RICO HIGHWAY AUTHORITY PAGE 7 OF 7 BRIDGE STUDIES AND EVALUATION OFFICE TE NO. :00960 BRIDGE REINSPECTION & EVALUATION REPORT AUXILIARY ITEMS 1-SIGNS TYPE: MATERIAL: CONDITION: REMARKS : THE REHABILITATION CONSIST IN REPAIR ALL DEFICIENCIES DESCRIBED ON THE ITEM #67.

C.5 March 15, 1996

| | PUERTO RICO HIGHWAY AUTHORITY | PAGE 1 OF |
|------------------------------------|---|------------------------|
| | BRIDGE STUDIES AND EVALUATION OFFICE | DATE : 03/15/ |
| | BRIDGE REPORT | TIME : 09:56: |
| FEDERAL SYSTEM | BRIDGE NO. : 00960 - ROAD NO. : PR 18 - KM. NO. : | 001.700 |
| | | |
| 1- STATE : | | |
| 2- STATE HIGHWAY DEPARTMENT : | Commonwealth of Puerto Rico | |
| 3- COUNTY (PARISH) CODE : | SAN JUAN SAN JUAN | |
| 4- PLACE CODE : | SAN JUAN URBAN ZONE | 76 |
| 5- INVENTORY ROUTE : | | 211000 |
| 6- FEATURES INTERSECTED : | PEDESTRIAN WALKWAY | PEDESTRIAN WALKWAY |
| 7- FACILITY CARRIED BY STRUCTURE | : P.R 18 | PR 18 |
| 8- STRUCTURE NUMBER : | BRIDGE 960 1 OF 1 | 009 |
| 9- LOCATION : | | 0.5 KM N INT PR21 & PR |
| 0- INV. ROUTE, MIN. CLEAR. (0.01m |): | 1- |
| | | 001 |
| | | 18 |
| | 66 DEGREES 04.6 MINUTES | 066 |
| | MILE) : STRUCTURE OVER HIGHWAY | |
| | | |
| | CLASSIFICATION | |
| | ON FREE ROAD | |
| 1- MAINTENANCE RESPONSABILITY : . | | |
| 2- OWNER : | | |
| 6- FUNCTIONAL CLASS. OF INVENTORY | ROUTE : INTERSTATE | |
| | AGE AND SERVICE | |
| | | 19 |
| 7- YEAR BUILT : | 0 LANES ON / 9 LANES UNDER | 00 |
| A A D T OF THE PROPY POINTE . | | 2228 |
| 0- YEAR OF A.D.T. : | | |
| | STRUCTURE DATA | |
| 1- DESING LOAD : | PEDESTRIAN | |
| - ADDROACH ROADWAY WIDTH : | 44.30 MT (145.30 FT) | |
| DETOCE MEDIAN . | NONE | |
| A OWNER ANOTE | NO | |
| | NO | |
| | N-N-N-N | N |
| 7- HISTORICAL SIGNIFICANCE : | 5 | |
| B- NAVIGATION CONTROL : | N/A | |
| 9- NAVIGATION VERTICAL CLEARANCE | N/A | 00 |
| 0- NAVIGATION HORIZONTAL CLEARANCE | B : N/A OPEN | |
| 1- STRUCT. OPEN, POSTED OR CLOSED | TO TRAFF. : OPEN | |
| 2- TYPE OF SERVICE : | PEDESTRIAN OVER HIGHWAY | 2 |
| | CONCRETE CONTINUOS TEE BEAMS | c |
| 4- STRUCTURE TYPE APPR. : | | c |
| 5- NUMBER OF SPAN IN MAIN UNIT : | NONE | 00 |
| THE PARTY OF THE | ANTE - COLOR MA | 6 |
| | 22.13 ML | 00 |
| B- LENGTH OF MAAIMUM SPAN : | 49.30 MT (161.70 FT) | 0001 |
| 9- STRUCTURE LENGTH | N/A | 0000 |
| 50- CURB OR SIDEWALK WIDTHS : | | |

| | 1 | | | |
|-----|--|---|--|---------------|
| | 1 | PUERTO RICO HIGHWA | | PAGE 2 OF 3 |
| | | BRIDGE STUDIES AND EV. | ALUATION OFFICE | |
| 1 | FEDERAL SYSTEM | BRIDGE NO - COOCO | | |
| 1 | | BRIDGE NO. : 00960 - ROAD | NO. : PR 18 - KM. NO. : 001. | .700 |
| p. | | STRUCTURE | D | |
| 51- | BRIDGE ROADWAY WIDTH, CURB | NO CURB : | 2 10 10 10 10 | |
| | Duck WIDIA, OUT TO OUT : | ***** | | 0066 |
| 33- | MI. VERT. CLEAR. OVER BRIDG | E ROADWAY : | | 0076 |
| 24- | MINIMUM VERTICAL UNDERCLEAR | ANCE : | a second second second | 9999 |
| | ALALAUM LAIERAL UDERCLEARANG | LE ON RIGHT : | | H1407 |
| 56- | MINIMUM LATERAL UNDERCLEARAN | NCE ON LEFT : | •••••••••••••••••••••••••••••••••••••• | H108 |
| | | | | 084 |
| | | CONDIT | ION | |
| | | MATERIAL | CONDITION ANALYSIS | |
| 58- | | | | |
| 59- | DECK | CONCRETE | SATISFACTORY | 6 |
| 60- | SUBSTRUCTURE | CONCRETE | SATISFACTORY | 6 |
| 61- | CHANNEL & CHANNEL PROTECTION | N | SATISFACTORY | 6 |
| 62- | CULVERT | N/A | N/A | N |
| 64- | OPERATING RATING : | ······ N/A | N/A | N |
| 66- | INVENTORY RATING : | •••••••••••••••••••••••••••••••••••••• | ····· PEDESTRIAN | 800 |
| | | | PEDESTRIAN | 800 |
| | FINE TRANSVERSAL CRAC BEAMS AT CAGUAS WAY H | CONCRETE LOSE WITH EXPOSED STEEL, KS WITH EFFLORECENCES. BEARING HAV AVE BIG SPALLING WITH EXPOSED STEE AVE LARGE SPALLING WITH EXPOSED ST | E LIGHT CORROSION. L BY IMPACT. RAMP AT | |
| | | | | |
| | 1.11 - CB(1) | | | |
| | | and the second se | | |
| | | | | |
| 68- | | | •••••• | N |
| | | | | |
| | | | | |
| 60 | | | | |
| 09. | - UNDERCLEARANCE, VERTICAL & | HURISUNTAL : | •••••• | 4 |
| | MEETS MINIMUM WATERA | LE LIMITS TO BE LEFT IN PLACE AS I | 8. | |
| | FILLIS FILMINON TOLERAD | and an and the second and and and and and and a | | |
| 70- | - BRIDGE POSTING : | | N/A. | AX- |
| 71. | - WATERWAY ADEQUACY : | | | N |
| | | | | |
| | N/A. | | | |
| | | | | |
| 72 | - APPROACH ROADWAY ALIGMENT : | ••••• | ••••••••••••••••••••••••••••••••••••••• | سللمه |
| | | | | ٨ |
| | N/A. | | | K |
| | | PROPOSED IMPR | OVENENT | // |
| 76 | TYPE OF LODY | PROPOSED IMPR | | ۷ |
| | | MENT : 49.3 | | 352 000162 |
| ,0 | - MENGIA OF STRUCTURE IMPROVE | | | 000162 |
| | | | | |
| | | | | |
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| PUERTO RICO HIGHWAY AUTHORITY | PAGE 3 OF 3 |
|--|-------------|
| BIRDGE STUDIES AND EVALUATION OFFICE | 11100 |
| | |
| FEDERAL SYSTEM BRIDGE NO. : 00960 - ROAD NO. : PR 18 - KM. NO. : 001.700 | |
| | |
| INSPECTIONS | |
| 89- RESERVED | 0396 |
| 90- INSPECTION DATE : | 24 |
| 91- DESIGNATED INSPECTION FRECUENCY : | N N N |
| 92- CRITICAL FEATURE INSPECTION : | NNN |
| 93- CRITICAL FEAT. INSPECT. DATE: | |
| IMPROVEMENT COST | |
| 94- BRIDGE IMPROVEMENT COST : N/A | 000009 |
| 95- ROADWAY IMPROVEMENT COST : | 000000 |
| 96- TOTAL PROJECT COST : | 000012 |
| 97- YEAR OF IMPROVEMENT COST ESTIMATED : 1996 | 96 |
| | |
| CLASSIFICATION AND STRUCTURE DATA | |
| | |
| 98- BORDER BRIDGE : | |
| 99- BORDER BRIDGE STRUCTURE NUMBER : | |
| 100- DEFENSE HIGHWAY DESIGNATION : DEFENSE HIGHWAY | N |
| 101- PARALLEL STRUCTURE DESIGNATION : NO PARALLEL STRUCTURE | 3 |
| 102- DIRECTION OF TRAFFIC : TRAFFIC NOT CARRIED | - |
| 103- TEMPORARY STRUCTURE DESIGNATION : | 1 |
| 104- HIGHWAY SYSTEM OF THE INVENTORY ROUTE : | |
| 105- RESERVED | 0000 |
| 106- YEAR RECONSTRUCTION : NO RECONSTRUCTION | 1 |
| 107- DECK STRUCTURE TYPE : | 100 |
| 108- WEARING SUBE / PROTECT. SYSTEM : CONCRETE NONE NONE | 04 |
| 109- AVERAGE DAILY TRUCK TRAFFIC : | 0 |
| 110- DESIGNATED NATIONAL NETWORK : NOT PART OF NETWORK | |
| 111- PIER OR ABUT. PROTECTION (NAVIGATION) : N/A | Y |
| 111- PIER OR ABOT. FROMELING ANALOGIEN, TERMENTER, TERMENT | N |
| 112- NOIS BRIDGE MININGE : BRIDGE OVER HIGHWAY | 369900 |
| 113- SCOR CRITICLE DIRECT TRAFFIC : | 12 |
| 114- FUTURE AVERAGE DALLY TRAFFIC : | |
| TRADA | • |
| 116- MINIM. NAVIG. VERT. CHENGUES 1 | 031396 |
| 117- SUFFICIENCY RATING : | 031396 |
| 126- FIELD INSPECTION DATE : | |
| 127- INSPECTION EVAL. DATE : | |
| 131- EVALUATOR ENGINEER : | / |
| REMARKS: | |
| | |
| THE REHABILITATION CONSIST IN REPAIR ALL DEFICIENCIES DESCRIBED ON THE | |
| | |
| ITEN #67. | |
| | |
| | |

C.6 September 30, 1992

| | PUERTO RICO HIGHWAY AUTHORITY HIGHWAY SYSTEM ADMINISTRATION OFFICE BRIDGE REPORT | PAGE 1 UF 3 DATE : 09/30/93 TIME : 08:43:47 |
|---|--|---|
| FEDERAL SYSTEM | BRIDGE NO. : 00960 - ROAD NO. : PR 18 | - KH. ND. : 004400 |
| | | |
| 1- CTAT | ======IDENTIFICATION======== | 721 |
| 2- STATE UTCHNAY DECADENCIT | Commonwealth o | Fuerto Rico 01 |
| 3- COUNTY (PARISH) CODE . | | 200 TION 127 |
| | San Juan Urban Zone | /6//0 |
| 5- INVENTORY ROUTE : | 2011 2012 2012 2012 2012 2012 2012 2012 | 2-1-1-00001-0 211000010 |
| | PEDESTRIAN WA | ALKWAY PEDESTRIAN WALKWAY |
| 7- FACILITY CARRIED BY STRUCTURE : | | - 18 PR 18 |
| 8- STRUCTURE NUMBER : | | |
| 9- LOCATION : | 0.5 KM N INT | 00440 |
| 11- MILEPOINT : | | 4.40 |
| 16- LATITUDE : | 18 DEGREES 2 | 06604 |
| 17- LUNGITUDE : | 66 DEGREES C | |
| 99- BORDER BRIDGE STELLETINE MINDER . | | |
| T BOULT BUDGE STOCTORE ROUDEN : | | 87.7 |
| Contraction of the second second | =====STRUCTURE TYPE AND MATERIAL====== | |
| 43- STRUCTLIRE TYPE, MAIN : | CONCRETE CONTINUOS TEE BEAMS | 20 |
| 4- STRUCTURE TYPE APPR. : | NONE | |
| 15- NUMBER OF SPAN IN MAIN UNIT : . | | |
| 16- NUMBER OF APPROACH SPAN : | 00 TTT00000 | ARTER A MUNC |
| 107- DECK STRUCTURE TYPE : 108- WEARING SURF./ PROTECT. SYSTEM | CONCRETE NONE NONE | 10 |
| | | |
| 19- BYPASS, DETOUR LENGTH (NEAREST M | ILE) : SIRUCTURE OVER | HIGHWAY 0 1967 1967 |
| | | 111111111111111111111111111111111111111 |
| A LANGE ON AND LANCE CTOUCTION . | U LANES UN / 7 LANE | 2001C |
| 29- A.D.T. OF INVENTORY ROUTE : | 200,100 | |
| | FEUESIKIAN UVER DIDOWIT | |
| | | ION 000 |
| 106- YEAR RELUNSTRUCTION : | | 4 % 0 |
| 104- AVERHOE DAIL! INDER HOLIED | | |
| | GEOMETRIC DATA | // A / THA |
| | | (14' - 7") 140 |
| 32- APPROACH ROADWAY WIDTH : | 44.30 MT | (145.30 FT) 14 INE |
| | NE | |
| | | NO |
| TOTAL LODIT CEARON | - · · · · · · · · · · · · · · · · · · · | |
| | | 2.65 FT) 000 |
| AN INTERFICE I FUCTURE | 49.30 HT (16 | 61.70 FT) 00016 |
| | | 00000 |
| | | (6.59 FT) 000 |
| | | |
| 53- MIN. VERT. CLEAR. OVER BRIDGE RU | ADWHT : | (14' = '7") |
| 54- MINIMUM VERTICAL UNDERCLEANANCE | 1. DICUT . 3.25 NI | (10 8 ET) H14 |
| SE_ MINIMIM I ATERAL UNDERCLEARANCE U | V LEFT : 2.55 MT | (10.0 FT) H1(|

| | | PUERTO RICO HIGHWAY HIGHWAY SYSTEM ADHINIS | AUTHORITY TRATION OFFICE | PAGE 2 0F 3 |
|-------------|---------------------------|---|--------------------------------|-------------|
| | | | | |
| | FEDERAL SYSTEM | BRIDGE NO. : 00960 - ROAD N | 10. : PR 18 - KH. NO. : 004400 | |
| | | ======CLASSIFICA | | |
| 20- TOLL : | | ON FRE | | |
| | | | E RGAD | .3 |
| | | | | 01 |
| TO IDIADIAS | | | TE | 01 |
| | | | | 11 5 |
| 101- PAPALI | SE DIGHWAY DESIGNATION : | | DEFENSE HIGHWAY | 1 |
| | | | | Ň |
| 103- TEMPOR | RARY STRUCTURE DESIGNATIO | N . | TRAFFIC NOT CARRIED | 3 |
| 104- HIGHWA | AY SYSTEM OF THE INVENTOR | N : Y ROUTE : | •••••• N/A | |
| | | | | 1 |
| 112- NBIS 1 | BRIDGE LENGTH : | | NOT PART OF NETWORK | 0 |
| | | | YE5 | Y |
| | | ====================================== | Y===== | |
| 38- NAVIGA | TION CONTROL : | | •••••• N/A | |
| 37- MHVIDH | TIDR VERITLAL ULLARANUE : | | N// | N 000 |
| HAL WHATCH | TIUN HURIZUNTAL CLEARENCE | 1 | N/a N/A | 0000 |
| III- PICK | UR HOUT. PRUTELITUN (NAVI | GATION) : N/A | | 0000 |
| 110- UINIU | . MAVID, VERI. LLEARANCE | | N/A | |
| | | ======PROPDSED IMPR | OVEMENT====== | |
| 75- TYPE O | F WORK : | | • REHABILITATION | 352 |
| 76- LENGTH | OF STRUCTURE IMPROVEMENT | : 49.30 | MT (161.70 FT) | 000162 |
| | | •••••• N/A | | 000000 |
| | | N/A | | 000000 |
| | | | 1993 | 000009 |
| 114- FIME | F AVERAGE DALLY TRAFFIC : | | 302 149 | 93 |
| | | | 2010 | 302146 |
| | | =====LOAD RATING AM | D POSTING====== | 10 |
| | | | | |
| | I LOAD : | | PEDESTRIAN | 7 |
| | | TO TRAFF. : | | A |
| | | | | 800 |
| | | | | 800 |
| 10- DRIDGE | - PUSIING : | | R/H. | N |
| | | ======CONDIT. | ON=========== | |
| | | MATERIAL | CONDITION ANALYSTS | |
| | | | BORD FIOR BIRLIDIO | |
| 58- DECK | | CONCRETE | SATISFACTURY | 6 |
| 59- SUPERS | STRUCTURE | CONCRETE | SATISFACTORY | 6 |
| 60- SUBSTR | | N/A | SATISFACTURY | 6 |
| 61- CHANNE | EL & CHANNEL PROTECTION | N/A | N/A | N |
| 62- CULVEF | SI | ····· | N/I | N |
| | | | | |
| | | | | |
| | 1997 - 1997 - | and the second se | and the second second second | |

| | | | PUERTO RICO HIGHWAY AUTHORITY HIGHWAY SYSTEM ADMINISTRATION OFFICE | | PAGE 3 OF 3 |
|--|---|--|--|---|---|
| | FEDERAL SY | STEN | BRIDGE ND. : 00960 - RDAD NO. : PR 18 | - KM. ND. : 004400 | |
| 67- STR | WEARING SURFACE H FINE TRANSVERSAL THE STRUCTURE, ES | HAVE CONCRE CRACKS WITH EARING HAVE | TE LOSE WITH EXPOSED STEEL, BOTTOM SLAB HAVE H EFFLORECENCES, CYCLONE FENCE PROTECTION IN LIGTH CORROSION, BEAMS HAVE IMPACTS OVER THE | | 6 |
| | CAGUAS WAY. RAMP STEEL. | AT MEDICAL | CENTER SIDE HAVE LARGE SPALLING WITH EXPOSED | | |
| | | | | | |
| 68- DEC | X GEOMETRY : | | | | N |
| | N/A. | | | | |
| 69- UNI | DERCLEARANCE, VERTIC | AL & HORIZO | NTAL : | | 4 |
| | | | IITS TO BE LEFT IN PLACE AS IS. | | and a state of |
| | N/A. | | | | |
| 72- AP | PROACH ROADWAY ALIGN | MENT : | | | |
| | | | | | |
| | N/A. | | | | |
| 36- TR 113- S | | S : S : | BRIDDE OVER HIGHWA | N-N-N-N | hann N |
| 113- S | AFFIC SAFETY FEATURE | S : | BRIDDE OVER HIGHWA | N -N-N Y | NNNN |
| 113- S 89- RE 90- IN | AFFIC SAFETY FEATURE COUR CRITICAL BRIDGE SERVED | S : | BRIDGE OVER HIGHWA | N-N-N-N Y EMBER 3, 1993. 24 MONTHS | NNNN |
| 113- S 89- RE 90- IN 91- DE 92- CR | AFFIC SAFETY FEATURE COUR CRITICAL BRIDGE SERVED | S : FRECUENCY : CTION : | BRIDGE OVER HIGHWA | N-N-N-N Y EMBER 3, 1993. 24 MONTHS | NNNM N 0993 |
| 113- S 89- RE 90- IN 91- DE 92- CR 93- CR 105- R 117- S | AFFIC SAFETY FEATURE COUR ORITICAL BRIDGE SERVED SIGNATED INSPECTION ITICAL FEATURE INSPECT ITICAL FEATURE INSPECT ITICAL FEAT. INSPECT SUFFICIENCY RATING : | FRECUENCY : CTION : | BRIDGE OVER HIGHWA | N-N-N-N Y EMBER 3, 1993. 24 MONTHS | NNNN N 0993 24 |
| 113- S 89- RE 90- IN 91- DE 92- CR 93- CR 105- R 117- S 126- F 127- I 130- C | AFFIC SAFETY FEATURE COUR ORITICAL BRIDGE SERVED SIGNATED INSPECTION ITICAL FEATURE INSPECT ITICAL FEATURE INSPECT IESERVED SUFFICIENCY RATING : TIELD INSPECTION DATE | S : FRECUENCY : CTION : DATE: | BRIDGE OVER HIGHWA ==================================== | M-N-N-N Y EMBER 3, 1993. 24 MONTHS 090393 090393 | NNNN N 0993 24 N N N - 090393 090393 |
| 113- S 89- RE 90- IN 91- DE 92- CR 93- CR 105- R 117- S 126- F 127- I 130- C | AFFIC SAFETY FEATURE COUR ORITICAL BRIDGE SERVED SIGNATED INSPECTION ITICAL FEATURE INSPECTION ITICAL FEATURE INSPECT REFICIENCY RATING : INSPECTION DATE INSPECTION EVAL. DATE INSPECTION EVAL. DATE INSPECTION EVAL. DATE INSPECTION EVAL. DATE INSPECTION EVAL. DATE RES: | S : FRECUENCY : CTION : DATE : P. DATE : . | BRIDGE OVER HIGHWA | N-N-N-N Y EMBER 3, 1993. 24 MONTHS | NNNN N 0993 24 N N N - 090393 090393 |
| 113- S B9- RE 90- IN 91- DE 92- CR 93- CR 105- R 117- S 126- F 127- I 130- C 131- E | AFFIC SAFETY FEATURE COUR ORITICAL BRIDGE SERVED SFECTION DATE : SIGNATED INSPECTION ITICAL FEATURE INSPECTION ITICAL FEAT. INSPECT SUFFICIENCY RATING : TIELD INSPECTION DATE INSPECTION EVAL. DATE INSPECTION EVAL. DATE INSPECTION EVAL. DATE REVENUE AND ENGINEER : RKS: | S : FRECUENCY : CTION : DATE : P. DATE : . | BRIDGE OVER HIGHWA | M-N-N-N Y EMBER 3, 1993. 24 MONTHS 090393 090393 | NNNN N 0993 24 N N N - 090393 090393 |
| 113- S B9- RE 90- IN 91- DE 92- CR 93- CR 105- R 117- S 126- F 127- I 130- C 131- E | AFFIC SAFETY FEATURE COUR ORITICAL BRIDGE SERVED SIGNATED INSPECTION ITICAL FEATURE INSPECTION ITICAL FEATURE INSPECT REFICIENCY RATING : INSPECTION DATE INSPECTION EVAL. DATE INSPECTION EVAL. DATE INSPECTION EVAL. DATE INSPECTION EVAL. DATE INSPECTION EVAL. DATE RES: | S : FRECUENCY : CTION : DATE : P. DATE : . | BRIDGE OVER HIGHWA | M-N-N-N Y EMBER 3, 1993. 24 MONTHS 090393 090393 | NNNN N 0993 24 N N N - 090393 090393 |

Appendix D Inspection by PRHTA of PB 1137

D.1 May 15, 2017

| BRIDGE: 1137 TEAM LEADER: Duget Lopez NSP. DATE: 15 mayo 2017 Inspection Type and Dates: |
|---|
| |
| |
| . Inspection Type and Dates: |
| |
| VBI Performed? Freq (Yes / No / NA) Previous Insp. DATE Next Insp. DATE VBI Type (Yes / No / NA) (MONTHS) (MONTH/YEAR) (MONTH/YEAR) |
| TEM 90 Routine Inspection Yes - Jan 2019 - |
| TEM 93 A FC Inspection |
| TEM 93 B Underwater Insp. |
| TEM 93 C Other: |
| Item 58 Item 59 Item 60 Item 61 Item 62 Item 113 Previous Inspection 5 5 6 — — — Current Inspection 4 5 5 — — — |
| Current Inspection 7 5 5 Teleview Comments: |
| Scour Critical (items 113 & 60) AASHTO Core's & NBI CD consistent Smart Flags (scour, steel plate, fire damage, etc) Channel Profile/Clearance Table FC & Underwater Members Tables Asphalt Overlay Thickness Drawings Photos Critical Finding |
| Inspector & Team Leader Signature |
| afety Eng.: |
| |

| Facily Carried 7: PR28 Losation 9: BALDONICTY DE CASTRO AVE. Facily Carried 7: PR28 Losation 9: BALDONICTY DE CASTRO AVE. Ris (On-Kinder)5A: One Route Under Ris. Signing Prefix 5B: 2.U.S. Numbered UW Requency 523: NA Next FC Inspection: NA Level of Service 5C: I Maintine Ris. Number 5D: 00003 Bit Requency 523: NA UW Inspection: Date 333: NA Next FC Inspection: NA Level of Service 5C: I Maintine Ris. Number 5D: 00003 Bit Requency 523: NA Status Intermediation Date 333: NA Next SI: NA Direction 6D 4: 76776 Kilsmeter Post 11: 04.1 km Element Requency: 24 months: Element Requency: 24 months: | Bridge Key: 011371 | Agency ID: 011371 | Sufficiency Rating: -1.0 |
|--|--|---|--|
| Water Span Material/Design 45A/B: 09 Deck Type 107: Unknown (NB) Water Span Material/Design 45A/B: 09 Deck Type 107: Unknown (NB) Water Span Material/Design 45A/B: Operating Address 51 × NNA (NB) Water Span Material/Design 45A/B: Unknown (NB) Water Span Material/Design 45A/B: Unknown (NB) Materiane 100D: Unknown (NB) Materiane 102C: Unknown (NB) AGE AND SERVICE Year Reconstructed 105: Yaar Built 27: 1564 Type of Service und 428: Prodemtine brig/le Type of Service und 428: 3 Prodemtine brig/le Type of Service und 428: 1 Highwar Extreme 0.251: Unknown Length Max Span 48: 2.360 m Studied of Data Length 19: 0.0 km Matter 10: Studied 206: 5 (Job m) GEOMETRIC DATA Medice 33: Unknown (NB) Unknown Vetteal Underdewares Bareria 53: Unknown (NB) Wetteal Underdewares Bareria 53: Unknown (NB) Wetteal Underdewares Bareria 53: Unknown (NB) Wetteal Underdewares Bareri 10: Medice 33: < | State 1: 72 Puerto Rico Strue Num 8: Fadilty Carried 7: PR 26 Location 9: BALC CAST Rite (On/Under)SA: One Route Under Rite, Signing Prefix 68 Level of Service SC: 1 Mainline Rite, Number 5D: Diractional Suffix 5E: 0 N/A (NBI) % Responsibility : SHD District 2: Unknown County Code 3: Place Dodo 4: 76770 Killometer Post 11: Feature Intersected 6: PEDESTRIAN WALKWAY Latilude 18: 184 27' 18* Longikude 17: Berder Bridge Code S8: Unknown Pender Bridge Number 59: STRUCTURE TYPE AND MATERI | ORIOTY DE RO AVE. FC Frequency S2A: NA FC in Council of the second seco | setion Date 90; 5/19/2017 Next Inspection: 05/15/201 respection Date 938: NA Next PC Inspection: NA inspection Date 938: NA Next UV inspection: NA ate 936: NA Next 81: NA Next 81: NA ate 936: NA Next 81: NA Next 81: NA ate 936: NA Next 81: NA Next 81: NA ate 936: NA Next 81: NA NEX |
| Deck Protection 1080: Unknown (NBi) AGE AND SERVICE Year Built 27: 1968 Year Reconstructed 106: Unknown Type of Service on 42A: 3 Pedestrian-blogle Type of Service on 42A: 1 Highwary Lanes on 26A: Unknown ACT 29: 67,300 Trank ADT 109: 4 % Year af ADT 109: 4 % | Main Span Material/Design 43A/B: I Steel 09 Desk Type 107: Unknown (NBI) Weening Surface 108A: Unknown (NBI) | Deck 58; 4 Poor S Culvert 52; N N/A (NBI) | CONDITION super 59: 5 Fair Sub 60: 5 Fair Channel/Channel Protection 61: N N/A (NBI) D RATING AND POSTING |
| Type of Service under 428: 11 Highway Lanes on 26A: Unknown Lanes Under 206: 5 Detour Length 19: 0.0 km ADT 29: 67,300 Truck ADT 109: 4 % Year of ADT 30: 2002 Str. Evaluation 35B: N MA or not required Approach Rail 36C: N NA or not required ADT 29: 67,300 Truck ADT 109: 4 % Year of ADT 30: 2002 Str. Evaluation 67: Unknown (NBI) CECOMETRIC DATA Ength Max Span 48: 23,60 m Structure Length 49: 61,00 m Out 200 m Carb/StAlk Width 1, 50A: Carb/Stalwaik Width R 50B: Midth Out to Out 52: Approach Alignment 72: 6 Equal Min Criteria Sour Critical 113: N Not Over Walerway Modian 33: *Unknown (NBI) Waterway Adequary 71: N Not Over Walerway Width Cub to Cub 51: L08 m Minicrim Vertical Underdearance Over Bridge 53: Unknown (NBI) Skew 34: -1.00 * Structure Flared 35: Unknown (NBI) Minimum Vertical Underdearance Reference 54A: H Hwy beneath struct Navigation Control 38: Unknown (NBI) Minimum Vertical Underdearance Reference 75A: H Hwy beneath struct Navigation Control 38: Unknown (NBI) | AGE AND SERVICE fear Built 27: 1968 Year Reconstructs ype of Service on 42A: 3 Pedestrian-bioyle | Design Load 31: 7 Pedestriar Posting status 41: A Open, no | n Posting 70: Unknown (NBI) resbiction |
| Wildh Curb to Curb 51; 1.89 m Wildh Dut to Out 52; Approach Readway Wildth 32: 24.60 m Median 33: 'Unknown (NBI) Deck Area: Bridge Cost 94: NA Type of Work 75: Unknown (P) Deck Area: Sincture Flared 35: Unknown (NBI) Roadway Cost 95: Unknown Langth: of Improvement 76: Minimum Vertical Underdiexrance Over Bridge 53: Minimum Vertical Underdiexrance 84Ference 54A: H Hwy beneath struct Minimum Vertical Underdiexrance 84B: 05.11 m Navigation Control 38: Unknown (NBI) | Lanes on 284: Unknown Lanes Under 206: 5 Detour NDT 29: 67,300 Truck ADT 109: 4 % Year of GEOMETRIC DATA Length Max Span 48: 23,60 m Structure Length 49: | Length 19: 0.0 km Transition 36B: N N/A or not re- Not 30: 2002 MDT 30: 2002 Str. Evaluation 67: Unknown (NBI) Underclearance, Vertical and Horizont Waterway Adequacy 71: N Not appli | quifed Approach Rail Ends 35D: N N/A or not required Deck, Geometry 65: Unknown (NBI) (al 69: Unknown (NBI) (asbla: Approach Allgriment 72: 6 Equal Min Criteria |
| Minimum Vertical Underviewance 54B: 05.11 m NAVIGATION DATA Minimum Lateral Underviewance Reference R 55A: H Hwy beneath struct Navigation Control 38: Unknown (NBI) | Width Curb to Curb 51; 1.69 m Width Out to Out 52; Approsoft Readway Width 32; 24,60 m Medien ; Wishoulders) Deck Area; Skew 34; -1.00 ° Structure Flared 35; Unknown f Mainmum Vertioni Clearance Over Bridge 53; | s3: *Unknown (NBI) Bridge Cost 94: Readway Cost 95: U Yotal Cost 96: U Yotal Cost 96: U | NA Type of Work 75: Unknown (P) Anknown Langeti of Improviment 75: Jinknown Future ADT 114: 92,073 |
| Minimum Lateral Undrolearance L 56: 02.20 m Plar Protection 111; Unknown (NBI) Lift Bridge Varileal Clearance 116; | Minimum Vertical Undersiearance 548: 05.11 m Minimum Lateral Undersiearance Reference R 554: H Hwy ber Minimum Lateral Undroteerance R 55: 01.20 m | eath struct. Navigation Control 35: Unkn Vertical Clearance 39: | own (NBI) Horizontal Clearance 40: |

BRIDGE INVENTORY MANAGEMENT OFFICE INFRASTRUCTURE DIRECTORY PRHTA

| | PRHTA |
|---|--|
| | Team Leader: Angel T. López |
| | Bridge Inspector: Angel T. López |
| | Bridge Evaluator: Manuel Coll |
| | Assistants: José R. Vázquez |
| | Driver: José A. Ortíz |
| | Inspection date: May, 15, 2017 |
| | Weather Conditions: Sunny |
| | Amount of Time on Inspection: 1 Hours |
| ļ | Equipment: X Bus or Van _ Underwater _ Ladders _ Snooper X Camera _ Boat |
| | _ Other: |
| | Bridge Number: 1137 |
| | Road on Structure: N/A Number or Name: Km. |
| | Road Under Structure: State Highway Number of Name: PR-26 Km. 4.1 |
| | Ident. Plaque: No Num. |
| | 36-Traffic Safety Features: |
| | Bridge railings: not applicable or safety not reuired |
| | Transitions: not applicable or safety not reuired |
| | Approach Guardrail: not applicable or safety not reuired |
| | Approach Guardrail Ends: not applicable or safety not reuired |
| | 41- Posting: Condition: A-Open Sign type: _ Posting Load: |
| | Type of Inspection: Regular/routine inspection |
| | COMMENTS AND/OR RECOMMENDATIONS: |
| | (61.00mts de largo) |
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| | (Jo |
| | Inspection by: Angel T. López Revised and Approved by: Manauel Coll |
| | Bridge Inspector Bridge Evaluator |
| | |
| | R-1137 |
| | |

| × c | | | BRI | | | | DIREC' | | | E | | |
|--------------------------|------------------|------------------------------|------------|----------|---------------------------------------|---------------|-------------|----------|---------|---------------------------------|----------|----------------|
| 58. DECK | | | | | | PRHT | 4 | | | | | |
| 58.1 Weari | ng Surfac | ce: Mat | erial: St | teel | Cor | ndition: 4 | | Thickn | ess | cm. | | |
| Deterioratio | - on: 50 to ' | 75 % | Dra | ainage: | Inadequa | te | Ponding | : No | | Safety: | No | |
| 58.2 Slab o | or Plate: | Material | : Steel | - | Cor | ndition: 4 | | | | 500000 1000 0000 - 40000 | | |
| Cracking: N | None | | | | | | | | | | | |
| Spalling: T | op: No | Bott | tom: No | 5 | | | | | | | | |
| Scaling: T | 50 | Bot | tom: No | D | | | | | | | | |
| Efflorescer | | Exu | dation: | No | Rus | st Stains: N | lo | Corros | ion: Se | vere | | |
| 58.3 Mover | ment: | Dec | k to bad | ckwall: | cm. | Deck | to approac | h slab | : (| cm. | | |
| | | | | | | | | | | | | |
| | | Cond. | Height | | · · · · · · · · · · · · · · · · · · · | | | | | | 1969 | |
| 12 | Material | Rating | Loss (cm) | Joints | Drainage | Alignment | Corrosion | Paint | Safety | Cracking | Spalling | Scaling |
| 58.4 Curb | N/A | - | | - | | | | | | | | - |
| 58.5 Median 58.6 | N/A | - | | | | | | | | | - | |
| Sidewalks 58.7 | N/A | | | ×22 | | - | | | | | | |
| Parapets 58.8 Railing | N/A Steel | 5 | | Good | Good | Good | Severe | Poor | Yes | | | |
| | | 1 | | | | 1, | | | L | | | |
| 58.9 Lightir | (四) | ards: Ma | iteriai: N | I/A C | ondition: r | N/A | Functior | iing: N | /A | | | |
| 58.10 Utiliti | ies: | | | | | | | | | | | |
| Туре: | | Size | | | Saf | ety: _ | | | | | | |
| 58.11 Joint | | ndition: N | | | | | | | 27 | | | |
| Type: N/A | | ictioning | | Le | eaking: N/ | A Crack | ing: N | Spallir | ig: N | Armor: | No | |
| 58.12 Drait | | 1000 CENTER 1000 CENTER 1000 | | | | | | | | | | |
| Material: N | | ndition: N | a Fui | nctionir | ng: N/A | | | | | | | |
| Comments | | | | ., | | | | | | <u>.</u> | 22 | 1911 - 21 - 21 |
| 58.1- Hay r | | 52 | | | 10.202 | 10 | | | 257 | | | |
| hay una se | | | | | | | | | | | | |
| secciones | | 850 | | | | 15 | | | | | | |
| parchos qu | | | | | | and the state | | | | | | |
| secciones | 50. 2000 | ntadas c | on oxid | o rojo p | ara protec | cción del a | cero, la si | iperfici | e de la | estructura | esta en | pobres |
| condicione | S. | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | |
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| | | | | | | | | | | | | |
| BR-1137 | | | | | | | | | | | 9 | . 1 |

| | e ** | | BR | | | | RE DIR | EMENT (ECTOR | | ЭE | | |
|-------|----------------|---------------------|--------------|-----------------|-------------|------------|-----------|------------------|---------|-------------|---------|-------------|
| 59. | SUPER | STRUCTUR | RE | | | T IXU | | | | | | |
| 59. | 1 Bearing | g Devices: | Type: Fixe | ed/Mov. | OL | t of Plum | b: No | Paint: | None | | | |
| | Condit | ion: 5 | | | | | | | | 0. | | |
| 59.3 | 2 Bridge | seats, pede | estal, grout | pads, a | butments | or pier se | eat wher | e beams b | ear dir | ectly on co | nc. | |
| н | Condi | ion: N | Cracking: | No | 2 | | Spalling | : None | Scal | ing: None | | |
| | Crush | ing: No | | | | | | | | | | 1 |
| 59. | 3 Steel b | eams: N/A | Type: N/A | | | | | | | | | |
| | Condi | tion: N/A | С | orrosior | n: N/A | Pai | nt: N/A | | | | | |
| 59. | 4 Concre | te: N/A | Type: N/A | | | | | | | | | |
| | Condi | tión: N | Cracking: | No | | | Spalling | g: Small | Scal | ing: None | | |
| 59. | 5 Truss: | Ped, Bailey | Condition | 5 F | Paint: Fair | Cor | rosion: N | Moderate | Men | bers: N/A | | |
| 59.0 | 6 Draina | ge: Type: N | /A C | onditior | n: N/A Fu | nctioning | : N/A | | | | | |
| 59. | 7 Hinges | : Condition: | N/A F | unctioni | ng: N/A | Mo | vement: | N/A | | | | |
| 59.8 | 8 Deflect | ion: N/A | | | | | | | | | | |
| 59. | 9 Vibratio | ons: N/A | | | | | | 19 | | | | |
| 60. | 0 SUBST | RUCTURE | 1 | | | | | | | | | |
| | | | Material | Cond. Rating | Cracking | Spalling | Scaling | Corrosion | Paint | Movement | Erosion | Undermining |
| 10 | 60.1. 1 | Wingwalls | N/A | N | | | - | 222 | - | - | | |
| nents | 60.1.2 | Breast- Backwall | N/A | N | | | | | - | - | | |

| | 60.1. 1 | Wingwalls | N/A | N | | | | 1922 | - | - | 194473 | |
|----------------------|----------------|---------------------|----------|-----|---|-------|-----------------|--------------|------|-------------|--------|----|
| Abutments | 60.1.2 | Breast- Backwall | N/A | N | | | - | - | - | | | |
| but | 60.1.3 | Footing | N/A | N . | | | - | | - | - | | |
| ` | 60.1.4 | Piles | N/A | Ν | | | 1000 | | - | | | - |
| <u>e</u> | 60.2.1 | Caps | N/A | N | - | - | | | - | - | | |
| E E | 60.2.2 | Bracing | N/A | N | | | | | | | | |
| or Non Pile Bents | 60.2.3 | Columns | Steel | 5 | | | - | Severe | Poor | No | No | No |
| Piers o | 60.2.4 | Footing | Concrete | 7 | F | Small | - | 1 <u>912</u> | - | No | No | No |
| ä | 60.2.5 | Piles | N/A | N | 2 | - | 10 <u>110</u> 0 | 102 | - | 1 <u></u> 1 | 1 | |
| 5.00 | 60.3.1 | Caps | N/A | N | | | | | | - | | |
| Rocker Bents | 60.3.2 | Bracing | N/A | N | | | - | 1992 | 222 | | | |
| αв | 60.3.3 | Piles | N/A | N | | - | - | 122 | | - | 19.22 | |
| | 60.4.1 | Caps | N/A | N | | | | ~= | - | - | - | |
| Pile Bents | 60.4.2 | Bracing | N/A | N | | | 19 <u>11</u> 0 | | | | | |
| Ш | 60.4.3 | Piles | N/A | N | | | - | | | | | |

Comments: 59.5- Varios de los componentes laterales de los "bracing" tienen ligera, moderada y severa corrosión y pérdida de sección, algunas secciones en el "upper chord" tienen moderada pérdida de sección por corrosión,

60.2.3- Columnas en acero en buenas condiciones, ligera corrosión.

BR-1137

3

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BRIDGE INVENTORY MANAGEMENT OFFICE INFRASTRUCTURE DIRECTORY PRHTA

61. CHANNEL AND PROTECTION Condition: N

61.1 Channel Scour: N/A

61.2 Embankment Erosion: N/A

| | | Туре | Material | Condition Rating | Functioning |
|------|---------------------|------|----------|---------------------|-------------|
| 61.3 | Protective Device | | N/A | N | |
| 61.4 | Fender System | | N/A | N | |
| 61.5 | Rip Rap | | N/A | N | |
| 61.6 | Spur Dikes, Jetties | | N/A | N | |

61.7 Obstruction: N/A

 \mathbf{r}

61.8 Channel Change: N/A Detrimental: N/A

61.9 Adequate Waterway: N/A

61.10 Surrounding Area: Flooding: N/A if yes explain:

Erosion: N/A if yes explain:

2

61.11 Location of piers and/or abutment detrimental: N/A if yes explain:

61.12 Other features that may affect structure:

Comments:

62. CULVERT AND RETAINING WALL

| | Material | Condition Rating | Functioning | Cracking | Spalling | Scaling | Corrosion | Settlement | Alignment | Scour |
|---------------------|----------|------------------|-------------|----------|----------|---------|-----------|------------|-----------|-------|
| 62.1 Barrel | N/A | N | | | | | - | | 1221 | 19220 |
| 62.2 Head Walls | N/A | N | | | | | | | | |
| 62.3 Cut-off wall | N/A | N | | | | | | | | |
| 62.4 Retaining wall | N/A | N | | | _ | | | | - | |

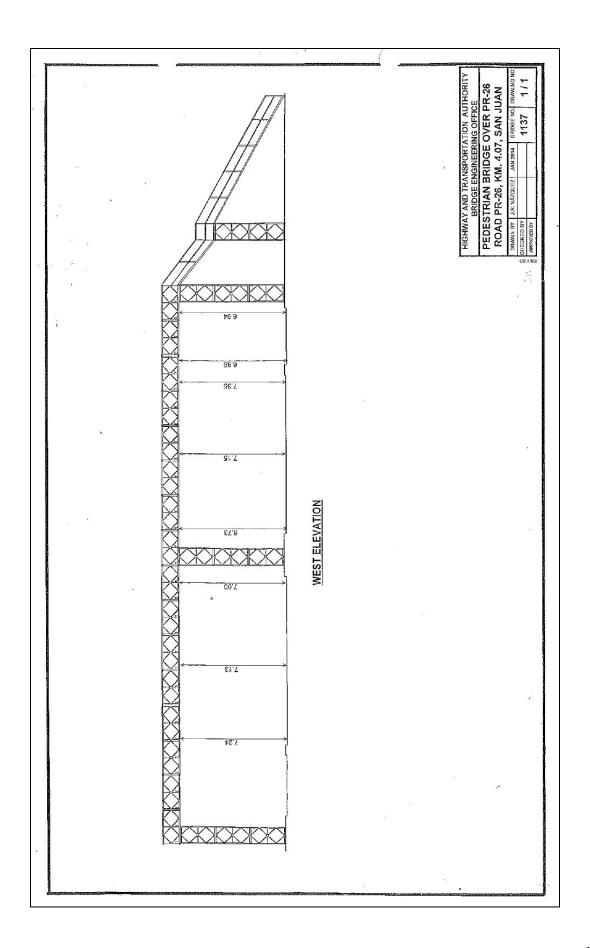
Comments:

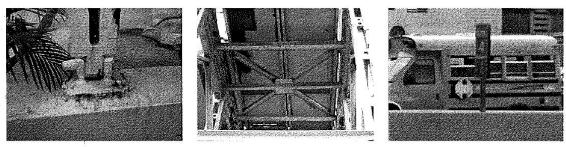
BR-1137

| BRIDGE INVENTORY MANAGEMENT OFFICE INFRASTRUCTURE DIRECTORY PRHTA | |
|---|---|
| 71. WATER ADEQUACY: N/A N/A | |
| 72. APPROACH ROADWAY | |
| 72.1 Alignment: 6 | |
| 72.2 Slab or Pavement Condition: N Material: Other | |
| Cracking: No Spalling: None Scaling: None Uneven: No | |
| Rough: No Settlement: No Movement: Approach slab-backwall: No Breaking up: No | 2 |
| Excessive deformation: No | |
| Safety: Hazardous: No | |
| Drainage: Inadequate: No | |
| Movement: Pavement-approach siab: No | |
| Embankment: Condition: N Functioning: Yes Erosion: No | |
| Construction: Flimsy: No Integrity impaired: No | |
| 72.3 Undesirable Impact: No | |
| 72.4 Joints: No Type: None Inadequate: N/A Satisfactory Alignment: N/A | |
| 72.5 Guardrail Type: None Material: N/A Functioning: N/A | |
| Condition: N Alignment Horizontal: N/A Vertical: N/A | |
| Joints Functioning: N/A Safety Securely Attached: N/A Pedestrian Hazards: N/A | |
| Comments: | |
| | |
| 90. INSPECTION DATE: May, 15, 2017 93. CRITICAL FEATURE INSPECTION DATE Fracture Critical: Underwater: Other Special Inspection: 102. DIRECTION OF TRAFFIC: Highway traffic not carried 106. YEAR RECONSTRUCTED: 107. DECK STRUCTURE TYPE: Steel Plate (includes orthotropic) 108. WEARING SURFACE/PROTECTIVE SYSTEM Type wearing surface: Other Type Membrane: None Deck protection: None 111. PIER OR ABUTMENT PROTECTION (FOR NAVIGATION): N/A 113. SCOUR CRITICAL BRIDGES: N 116. MINUMUM NAVIGATION VERTICAL CLEARANCE: AUXILIARY ITEMS Signs: Type: Route Orientation Material: Alum. Condition: 5 | |
| BR-1137 | 5 |

| PRHTA Core Elements | | | | | | | | | | | |
|------------------------|---------------------------------------|----------|-----------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| Elem. No. | Elements Description | a | | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
| | | | \vdash | | | | | | | | 0 |
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| | 37 | | | | | | | | | | 6 |

BRIDGE INVENTORY MANAGEMENT OFFICE





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1137-may-15-2017-018.jpg



1137-may-15-2017-020.jpg



1137-may-15-2017-030.jpg



1137-may-15-2017-032.jpg

D.2 January 23, 2014

| BRIDGE: | INSPE | ection report Intruní) | SUMMARY | & QC SHEET | |
|-------------|--|-------------------------------|------------------|-------------------------------------|---------------------------------|
| INSP. DATE: | ER: Eng. Arturo Cácer 1 / J 3/ 1 f n Type and Dates: | res Febus | | | |
| NBI | Type | Performed? (Yes /)No / NA) | Freq (MONTHS) | Previous Insp. DATE (MONTH/YEAR) | Next Insp. DATE (MONTH/YEAR) |
| ITEM 90 | Routine Inspection | yes | 24 | 12/10/2008 | 1/23/10 |
| ITEM 93 A | FC Inspection | N | - | - | - |
| ITEM 93 B | Underwater Insp. | N | - | - | - |
| ITEM 93 C | Other: | N | _ | 2 | ~ |

2. NBI Condition Rating Summary:

| 201 312 326 336 3375 | Item 58 | Item 59 | Item 60 | Item 61 | Item 62 | Item 113 |
|----------------------|---------|---------|---------|---------|---------------|----------|
| Previous Inspection | 5 | 5 | 4 | N | \mathcal{N} | N |
| Current Inspection | 5 | 5 | 6 | N | N | N |

Other Checks: (Y, N, NA)

Review Comments:

∠ Scour Critical (items 113 & 60)
 ∠ AASHTO Core's & NBI CD consistent
 Smart Flags (scour, steel plate, fire damage, etc)
 ∠ Channel Profile/Clearance Table

- ∠FC & Underwater Members Tables

- Asphalt Overlay Thickness Drawings Photos Critical Finding Inspector & Team Leader Signature

Reviewer: Safety Eng.:

| YourState Department of Transportation | Bureau of Bridges and Structure Bridge Maintenanc |
|--|--|
| Bridge In | spection Report |
| Bridge Key: 011371 Agenc | y ID: 011371 Sufficiency Rating: -1.0 |
| IDENTIFICATION | INSPECTION |
| State 1: 72 Puerto Rico Struc Num 8: 011371 | Frequency 91: 24 months Inspection Date 90: 1/23/2014 Next Inspection: 01/23/2016 |
| Facility Carried 7: PR 26 Location 9: BALDORIOTY DE CASTRO AVE. | FC Frequency 92A: NA FC Inspection Date 93A: 1/23/2014 Next FC Inspection: NA |
| Rte.(On/Under)5A: One Route Under Rte. Signing Prefix 5B: 2 U.S. Numbered | UW Frequency 92B: NA UW Inspection Date 93B: NA Next UW Inspection: NA |
| Level of Service SC: 1 Mainline Rte. Number 5D: 00026 | SI Frequency 92C: NA SI Date 93C: NA Next SI: NA |
| Directional Suffix 5E: 0 N/A (NBI) % Responsibility : NA | Element Frequency: 24 months Element Inspection Date: 01/01/1901 Next Elem. Insp. Due: 01/23/2014 |
| SHD District 2: SAN JUAN County Code 3: SAN JUAN | |
| Place Code 4: SAN JUAN ZONA Kilometer Post 11: 04.1 km URBANA | CLASSIFICATION |
| Feature Intersected 6: PEDESTRIAN WALKWAY | Defense Highway 100: 0 Not a STRAHNET hwy Parallel Structure 101: No bridge exists |
| Latitude 16: 18d 27' 18" Longitude 17: 066d 03' 18" | Direction of Traffic 102: 0 Not hwy traffic Temporary Structure 103: Not Applicable (P) |
| Border Bridge Code 98: Unknown (P) | Highway System 104: 0 Not on NHS NBIS Length 112: Long Enough |
| Border Bridge Number 99: Unknown | Toll Facility 20: 3 On free road Functional Class 28: 14 Urban Other Princ Historical Significance 37: 5 Not eligible for NRHP |
| | Historical Significance 37: 5 Not eligible for NRHP Owner 22: 01 State Highway Agency |
| STRUCTURE TYPE AND MATERIALS Number of Approach Spans 46: 0 Number of Spans Main Unit 45: 2 | Custodian 21: 01 State Highway Agency |
| Main Span Material/Design 43A/B: | |
| 3 Steel 09 | CONDITION Deck 58: 5 Fair Sub 60: 6 Satisfactory |
| | Culvert 62: N N/A (NBI) Channel/Channel Protection 61: N N/A (NBI) |
| Deck Type 107: 5 Steel Plate | |
| Wearing Surface 108A: 9 Other | LOAD RATING AND POSTING |
| Membrane 108B: 0 None | Inventory Rating Method 65: Unknown (NBI) Operating Rating Method 63:Unknown (NBI) |
| Deck Protection 108C: None | Inventory Rating 66: MS6 Operating Rating 64: MS-0.6 |
| | Design Load 31: 7 Pedestrian Posting 70: Unknown (NBI) |
| AGE AND SERVICE Year Built 27: 1968 Year Reconstructed 106: Unknown | Posting status 41: Unknown (NBI) |
| Year Built 27: 1968 Year Reconstructed 106: Unknown Type of Service on 42A: 3 Pedestrian-bicyle | |
| Type of Service under 42B: 1 Highway | APPRAISAL |
| Lanes on 28A: Unknown Lanes Under 28B: 5 Detour Length 19: 0.0 km | Bridge Rail 36A: Unknown (NBI) Approach Rail 36C: Unknown (NBI) |
| ADT 29: 67,300 Truck ADT 109: 4 % Year of ADT 30: 2005 | Transition 36B: Unknown (NBI) Approach Rail Ends 36D: Unknown (NBI) Str. Evaluation 67: Unknown (NBI) Deck Geometry 68: Unknown (NBI) |
| GEOMETRIC DATA | Str. Evaluation 67: Unknown (NBI) Deck Geometry 68: Unknown (NBI) Underclearance, Vertical and Horizontal 69: Unknown (NBI) |
| Length Max Span 48: 24.37 m Structure Length 49: 53.14 m | Waterway Adequacy 71: N Not applicable Approach Alignment 72: Unknown (NBI) |
| Curb/Sdwik Wdth L 50A: 0.00 m Curb/Sidewalk Width R 50B: 0.00 m | Scour Critical 113: Unknown (NBI) |
| Width Curb to Curb 51: 1.64 m Width Out to Out 52: 2.84 m | |
| Approach Roadway Width 32: 24.60 m Median 33: 0 No median (w/ shoulders) | PROPOSED IMPROVEMENTS |
| Deck Area: 150.92 m ^a | Bridge Cost 94: NA Type of Work 75: Unknown (P) |
| Skew 34: 0.00 * Structure Flared 35: 0 No flare | Roadway Cost 95: Unknown Length of Improvment 76: Total Cost 96: Unknown Future ADT 114: 92,073 |
| Minimum Vertical Clearance Over Bridge 53: 99.99 m | Year of Cost Estimate 97: Unknown Year of Future ADT 115: 2020 |
| Minimum Vertical Underclearance 548: 06.73 m | |
| Minimum Lateral Underclearance Reference R 55A: H Hwy beneath struct | NAVIGATION DATA Navigation Control 38: N NA-no waterway |
| Minimum Lateral Undrclearance R 55: 01.20 m | Vertical Clearance 39: 0.00 m Horizontal Clearance 40: 0.00 m |
| Minimum Lateral Undrclearance L 58: 02.20 m | Pier Protection 111: Unknown (NBI) Lift Bridge Vertical Clearance 116: 0.00 m |
| ELEMENT CONDITION STATE DATA | |
| BRIDGE NOTES | |
| | |
| NSP002_Inspect_Report_Metric Agency | ID: 011371 Mon 2/24/2014 16:20:51 Page 1 of 2 |

| YourState Department of Transportation | | | Bureau of Bridges and Structure Bridge Maintenanc |
|--|----------------------------------|--|--|
| Brid | ge Inspecti | on Report | • |
| PAST INSPECTION | | | |
| Inspection Date: 01/23/2014 Ty | vpe: 1 Régular NBI | | |
| Inspector: -1 Po | ontis User Key: Por | itis - Pontis Poi | |
| Scope: | | | |
| NBI: 🗹 Other: | Element: | | |
| Underwater: Fracture Critical: | <u>•</u> | | |
| NSPECTION NOTES | | ж | |
| LIGHT TO MODERATE CORROSION AND SOM OF BRACINGS SHOWS LIGHT TO MODERATE CORROSION AT UPPER CHORDS. | E HOLES BY CORR CORROSION AND | OSION AT STEEL PL SECTION LOSS. MC | ATES. LATERAL COMPONENTS DERATE SECTION LOSS BY |
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BRIDGE ENGINEERING OFFICE INFRASTRUCTURE DIRECTORY PRHTA Team Leader: Arturo Cáceres Bridge Inspector: José R. Vázquez Bridge Evaluator: Arturo Cáceres Assistants: Juan C. Otero Driver: Gabriel Diaz Inspection date: Jan 23, 2014 Weather Conditions: Sunny Amount of Time on Inspection: 1 Hours Equipment: X Bus or Van __Underwater __Ladders Snooper X Camera Boat _Other: Bridge Number: 1137 Road on Structure: N/A Number or Name: Km. Road Under Structure: State Highway Number or Name: PR-26 Km. 4.07 Ident. Plaque: No Num. **Traffic Safety Features:** Bridge railings: not applicable or safety not reuired Transitions: not applicable or safety not reuired Approach Guardrail: not applicable or safety not reuired Approach Guardrail Ends: not applicable or safety not reuired 41- Posting: Condition: A-Open Sign type: _ Posting Load: Type of Inspection: Regular/routine inspection COMMENTS AND/OR RECOMMENDATIONS: Inspection by: José Vázguez Revised and Approved by: Arturo Caceres **Bridge Inspector** Team Leader BR-1137

| | | | | | | NGINEE UCTURE PRHT/ | DIREC | | | | | |
|-------------------|-------------|-----------------|------------------------|----------|--------------|---------------------------|------------|---------|----------|------------|------------|---------|
| 58. DECK | | | | | | 1 10117 | • | | | | | |
| 58.1 Weari | ing Surfa | ce: Mat | erial: St | eel | Cor | ndition: 5 | | Thickn | ess | cm. | | |
| Deterioratio | on: 10 to 2 | 25 % | Dra | ainage: | Inadequa | te | Ponding | : Yes | | Safety: | Yes | |
| 58.2 Slab o | or Plate: | Materia | I: Steel | | Cor | ndition: 5 | | | | | | |
| Cracking: N | None | | | | | | | | | | | |
| Spalling: T | op: No | Bot | tom: No | 2 | | | | | | | | |
| Scaling: T | op: No | Bot | tom: No | 0 | | | | | | | | |
| Efflorescen | nce: No | Exu | idation: | No | Rus | st Stains: N | lo | Corros | ion: Mo | derate | | |
| 58.3 Move | ment: | Dec | k to bad | ckwall: | cm. | Deck | to approac | h slab | | cm. | | |
| | Material | Cond. Rating | Height Loss (cm) | Joints | Drainage | Alignment | Corrosion | Paint | Safety | Cracking | Spalling | Scaling |
| 58.4 Curb | N/A | - | | | - | - | - | - | - | - | - | - |
| 58.5 Median | N/A | - | | - | | - | - | | | - | - | |
| 58.6 Sidewalks | N/A | | | - | - | - | - | - | | - | - | - |
| 58.7 Parapets | N/A | - | | | - | | - | | - | - | - | |
| 58.8 Railing | Steel | 6 | | Good | Good | Good | Moderate | | Yes | | - | - |
| 58.9 Lighti | ing Stand | lards: N | Naterial [.] | N/A | Cor | dition: N/A | | Functio | oning: N | ι Ι/Δ | | |
| 58.10 Utili | | | natoriai. | 1477 | 001 | | • | i uncu | Jinng. I | | | |
| Туре: | | Size | e: | | Saf | ety: _ | | | | | | |
| 58.11 Join | ts: Con | dition: | | | | | | | | | | |
| Type: N/A | Fun | ctioning | : N/A | Le | eaking: N/ | A Crack | ing: N | Spallin | g: N | Armor: | No | |
| 58.12 Drai | | | | | J. | | J | 5 | | | | |
| Material: N | ione Con | dition: N | N Fur | nctionin | g: N/A | | | | | | | |
| Comments | s: | | | | 5 | | | | | | | |
| 58.1- Liger | a y mode | rada col | rrosión e | en supe | erficie, alg | unas pequ | eñas perfo | racion | es por c | orrosión e | en las tol | as. |
| | | | | | | () (S) (S | 10 | | 724 | | | |
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BR-1137

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|-----------------|------------------|---------------------|-------------------------|-----------------|-----------|------------|------------|------------|--------|-------------|---------|-------------|
| 59. 5 | SUPERS | STRUCTURE | | | | | | | | | | |
| 59.1 | Bearing | g Devices: T | ype: Fixe | d/Mov. | Ou | t of Plum | b: No | Paint: | None | | | |
| | Condi | tion: 5 | | | | | | | | | | |
| 59.2 | Bridge | seats, pedes | stal, grou | It pads | , abutmei | nts or pie | er seat v | vhere bea | ms bea | ar directly | on conc | • |
| | | | cracking: | | 5 | | Spalling | | | ing: None | | |
| | Crush | ing: No | Ū | | | | | | | • | | |
| 59.3 | | eams: N/A T | vpe: N/A | | | | | | | | | |
| | | tion: N/A | 2010 Contraction (1997) | orrosion | · N/A | Pair | nt: N/A | | | | | |
| 50 A | Concre | | ype: N/A | | | 1 di | IC. 14/7 (| | | | | |
| 55.4 | (1997) (1997) | | Cracking: | | 3 | | Spalling | : Small | Seal | ing: None | | |
| F0 F | | | • | | | int: Fair | | | | | | |
| | | Ped. Bailey | | onditio | | | | rosion: Mo | uerate | Wembe | 15. N/A | |
| | | ge: Type: N/A | | onditio | | | ictioning | | | | | |
| | | Condition: | N/A Fu | Inction | ng: N/A | Mo | vement: | N/A | | | | |
| 59.8 | Deflect | tion: N/A | | | | | | | | | | |
| 59.9 | Vibrati | ons: N/A | | | | , | | | | | | |
| 60.0 | SUBST | RUCTURE: | | | | 19692 | | | | | | |
| | | | Material | Cond. Rating | Cracking | Spalling | Scaling | Corrosion | Paint | Movement | Erosion | Undermining |
| | 60.1.1 | Wingwalls | N/A | N | - | - | | _ | _ | - | | |
| Abutments | 60.1.2 | Breast- Backwall | N/A | N | | - | - | - | _ | | - | - |
| butn | 60.1.3 | Footing | N/A | N | - | - | - | | - | - | | - |
| ٩ | 60.1.4 | Piles | N/A | N | - | - | - | | | - | | - |
| | 60.2.1 | Caps | N/A | N | | - | - | - | - | - | - | - |
| pile Bents | 60.2.2 | Bracing | N/A | N | - | - | - | | - | | | - |
| s or e Be | 60.2.3 | Columns | Steel | 6 | | - | | Moderate | | No | No | No |
| Piers | 60.2.4 | Footing | Concrete | 7 | F | Small | - | - | - | No | No | No |
| | 60.2.5 | Piles | N/A | N | | - | - | - | | a-a | - | - |
| s er | 60.3.1 | Caps | N/A | N | - | - | - | - | - | - | - | - |
| Rocker Bents | 60.3.2 | Bracing | N/A | N | - | - | - | - | - | - | ·· | - |
| [[] | 60.3.3 | Piles | N/A | N | - | - | - | - | - | | - | - |

60.4.3 Comments:

Pile Bents 60.4.1

60.4.2

Caps

Piles

Bracing

N/A

N/A

N/A

Ν

Ν

Ν

59.5- Varios de los componentes laterales de los "bracing" tienen ligera, moderada corrosión y pérdida de sección,

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algunas secciones en el "upper chord" tienen moderada pérdida de sección por corrosión.

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BR-1137

BRIDGE ENGINEERING OFFICE INFRASTRUCTURE DIRECTORY PRHTA

61. CHANNEL AND PROTECTION Condition: N

61.1 Channel Scour: N/A

61.2 Embankment Erosion: N/A

| | | Туре | Material | Condition Rating | Functioning |
|------|---------------------|------|----------|---------------------|-------------|
| 61.3 | Protective Device | 8 B | N/A | N | - |
| 61.4 | Fender System | | N/A | N | - |
| 61.5 | Rip Rap | | N/A | N | |
| 61.6 | Spur Dikes, Jetties | | N/A | N | - |

61.7 Obstruction: N/A

61.8 Channel Change: N/A Detrimental: N/A

61.9 Adequate Waterway: N/A

61.10 Surrounding Area: Flooding: N/A if yes explain:

Erosion: N/A if yes explain:

61.11 Location of piers and/or abutment detrimental: N/A

61.12 Other features that may affect structure: Comments:

62. CULVERT AND RETAINING WALL

| | Material | Condition Rating | Functioning | Cracking | Spalling | Scaling | Corrosion | Settlement | Alignment | Scour |
|---------------------|----------|------------------|-------------|----------|----------|---------|-----------|------------|-----------|-------|
| 62.1 Barrel | N/A | N | - | - | - | - | - | - | - | - |
| 62.2 Head Walls | N/A | N | - | | - | - | - | - | | - |
| 62.3 Cut-off wall | N/A | N | - | | - | - | - | | - | · · |
| 62.4 Retaining wall | N/A | N | - | | | - | - | | - | |

Comments:

BR-1137

if yes explain:

| | | | RASTRUC | | NG OFFICE DIRECTORY | | | |
|-------------------------|-----------------------------|---------------|----------------|------------------|------------------------|-----------|-----------------|---|
| 71. WATER AD | EQUACY: | N/A | N/A | NULLA | | | | |
| 72. APPROAC | H ROADWAY | | | | | | | |
| 72.1 Alignmen | t: 6 | | | | | | | |
| 72.2 Slab or Pa | avement | Condition: | N Materia | l: Other | | | | |
| Cracking: | No | S | balling: None |) | Scaling: None | Uneven: N | lo | |
| Rough: No | Settler | nent: No | Movem | ent: App | roach slab-backwa | III: No | Breaking up: No | |
| Excessive | deformation: N | o | | | | | | |
| Safety: | Hazaro | dous: No | | | | | | |
| Drainage: | Inadeo | quate: No | | | | | | |
| Movemer | t: Paven | nent-approac | h slab: No | | | | | |
| Embankm | nent: Condition | :N Fu | nctioning: Ye | es | Erosion: No | | | |
| | ion: Flimsy: No | Inte | egrity impaire | ed: No | | | | |
| 72.3 Undesira | ole impact: No | | | | | | | |
| 72.4 Joints: N | | | dequate: N// | | Satisfactory Alignr | nent: N/A | | |
| 72.5 Guardrail | States Contractor | Material: N | | | ning: N/A | | | |
| Conditio | • | nent Horizont | | Vertical: | | | | |
| Joints Fui Comments: | nctioning: N/A | Safety Sec | urely Attache | ed: N/A | Pedestrian Hazard | ls: N/A | | |
| 93. CRITICAL | ON DATE: Jan FEATURE INS | | ATE | | | | | |
| Fracture | | | | | | | | |
| Underwa | | | | | | | | |
| | ecial Inspection | | raffic not car | ried | | | | |
| | CONSTRUCTE | 5 S | rame not car | neu | | | | |
| | RUCTURE TYP | | e (includes c | orthotropi | 2) | | | |
| | SURFACE/PF | | | in a real option | -, | | | |
| | ring surface: Otl | | | | | | | |
| | hbrane: None | | | | | | | |
| | tection: None | | | | | | | |
| 111. PIER OR | ABUTMENT PR | ROTECTION | (FOR NAVIO | GATION) | : N/A | | | |
| 113. SCOUR 0 | RITICAL BRID | GES: N | | | | | | |
| 116. MINUMUI | | VERTICAL | CLEARANC | E: | | | | |
| AUXILIARY IT | EMS | | | | | | | |
| Signs: | Type: Route C | Drientation | Materia | al: Alum. | Condition: | 5 | | |
| BR-1137 | | | | | | | | 5 |

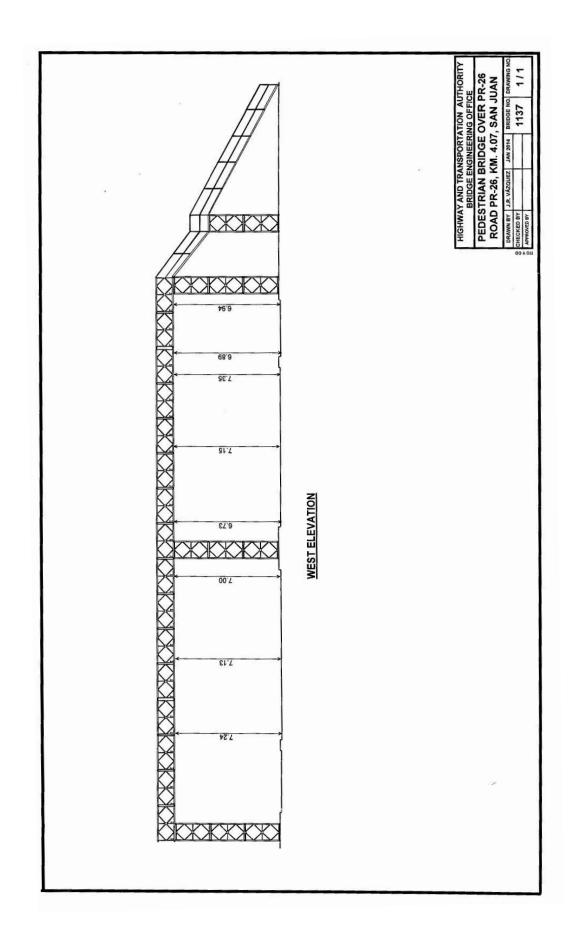
BRIDGE ENGINEERING OFFICE INFRASTRUCTURE DIRECTORY PRHTA

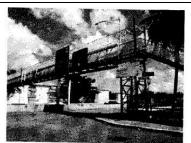
| | | | | | Co | ore Eleme | ents | | | | |
|--------------|----------------------|--------------|--------------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| Elem. No. | Elements Description | P a g. | E n v. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
| | 2340 2 | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
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| | | | | | | | | | | | 0 |
| | | Τ | | | | | | | | | 0 |
| | | T | | | | | | | | | 0 |
| | | | | | Non | Core Ele | ments | - | | | |
| Elem. No. | Elements Description | P a g. | | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total Stat Quantity |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
| | | | | | | | | | 2.000000 | | 0 |
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| | | 1.000 | | | | Smart Fla | as | | | | |
|--------------|----------------------|-------|--------------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| Elem. No. | Elements Description | а | E n v. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
| | | + | H | | | | | | | | 0 |
| | | | П | | | | | | | | 0 |
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| | | | П | | | | | | | | 0 |
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| T | | | П | | | | | | | | 0 |
| | | | П | | | | 80 - C | | | | 0 |

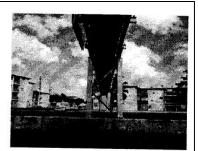
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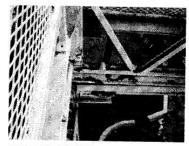
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1137-Jan-23-2014-006.jpg



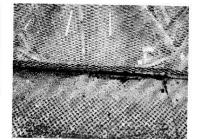
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1137-Jan-23-2014-017.jpg



1137-Jan-23-2014-019.jpg

D.3 June 29, 2001

| | | HWAY AUTHORITY | | PAGE 1 OF 7 |
|--|----------------------|---|---|---|
| ENGINEER: EDUARDO MARQUEZ | | EVALUATION OFFICE | EQUIP | |
| ASSISTANTS: M. SANTIAGO : JAIME RIVAS | BRIDGE REINSPECTION | & EVALUATION REPORT | BUS X | LADDERS |
| : JUAN OTBRO | BRIDGE No.: 01137 | | BOAT | CAMERA X |
| JORGE VIERA | BRIDGE NO.: 01137 | FEDERAL SISTEM | UNDERWATER | SNCOPER # |
| : CONS VIER | ROAD No.: PR 26 | KM. No. : 0004.070 | SNOOPER OPERATO | |
| EVALUATION DATE: 29/JUNE/01 | ROAD NOT. PR 20 | KH. NO. : 0004.070 | PLAQU YES X NO | |
| | | | FILM No. | NO. |
| | ======IDBNTIFICF | TION | FILM NO. | |
| | | 1104 | | |
| 1- STATE : | | Commonwealth of Puer | to Fico | . 7 |
| 2- HIGHWAY AGENCY DISTRICT : | | | | |
| 3- COUNTY (PARISH) CODE : | | | | 1 |
| 4- PLACE CODE : | | | | 767 |
| 5- INVENTORY ROUTE : | | | 00003-0 | 2210000 |
| 6- FEATURES INTERSECTED : | | | | TRIAN WALKWAY |
| 7- FACILITY CARRIED BY STRUCTURE : . | | | | PR 26 |
| 8- STRUCTURE NUMBER : | | | | 0113 |
| 9- LOCATION : | | | | 10 1 11 |
| 0- INVENTORY ROUTE, MINIMUM VERTICAL | | | | 05 |
| 1- KILOMETERPOINT : | | | 4.07 | 00040 |
| 2- BASE HIGHWAY NETWORK : | ***** | | | |
| 3- LRS INVENTORY ROUTE, SUBROUTE NUM | | | | |
| 6- LATITUDE : | | DEG 27.3 MIN | | 182718 |
| 7- LONGITUDE : | | | | 0660318 |
| 9- BYPASS, DETOUR LENGTH (NEAREST KI | LOMETER) : | STRUCTURE OVER HWY. | | ٥ |
| | ==========CLASSIFICA | MT ON | | |
| | CLASSIFICA | 110N======== | | |
| 20- TOLL : | | REE ROAD | | |
| 1- MAINTENANCE RESPONSABILITY : | D.T.P.W. | | | |
| 22- OWNER : | D.T.P.W. | | | |
| 26- FUNCTIONAL CLASS, OF INVENTORY ROL | UTE : URBAN | | | |
| | | INTERSTATE | | |
| | AGE AND SE | 6 | | |
| 7- YBAR BUILT : | | RVICB======= | 1968 | |
| | | | 1968 | 19 |
| 7- YEAR BUILT : 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : | | RVICE==================================== | ., 1968 | 19 00 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : | | RVICE==================================== | | 00 0673 |
| 8- LANES ON AND UNDER STRUCTURE :9- A.D.T. OF INVENTORY ROUTE : | | RVICE======== 00 ON ; 05 UNDER | | 19 00 0673 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : | STRUCTURE I | RVICE==================================== | 1999 | 19 00 0673 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : | STRUCTURE D | RVICE======= | 1999 Estrian | 19 00 0673 19 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 2- APPROACH ROADWAY WIDTH : | structure [| RVICE==================================== | 1999 Estrian | 19 00 0673 19 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 2- APPROACH ROADWAY WIDTH : 3- ERIDGE MEDIAN : | STRUCTURE I | RVICE==================================== | 1999 Estrian | 19 00 0673 19 02 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 2- APPROACH ROADWAY WIDTH : 3- BRIDGE MEDIAN : 4- SKEW ANGLE : | STRUCTURE E | RVICE==================================== | 1999 Destrian | 19 00 0673 19 02 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 12- APPROACH ROADWAY WIDTH : 13- BRIDGE MEDIAN : 14- SKEW ANGLE : 15- STRUCTURE FLARED : | STRUCTURE E | RVICE==================================== | 1999 Destrian | 19 00 0673 19 02 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 12- APPROACH ROADWAY WIDTH : 13- BRIDGE MEDIAN : 14- SKEW ANGLE : 15- STRUCTURE FLARED : 6- TRAFFIC SAFETY FEATURES : | structure E | RVICE==================================== | 1999 Destrian Io N-N-N-N | 19 00 0673 19 02 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 12- APPROACH ROADWAY WIDTH : 13- BRIDGE MEDIAN : 14- SKEW ANGLE : 15- STRUCTURE FLARED : 16- TRAFFIC SAFETY FEATURES : 17- HISTORICAL SIGNIFICANCE : | STRUCTURE E | RVICE==================================== | 1999 Destrian Io N-N-N-N 5 | 19 00 0673 19 02 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 12- APPROACH ROADWAY WIDTH : 13- ERIDGE MEDIAN : 14- SKEW ANGLE : 15- STRUCTURE FLARED : 15- STRUCTURE FLARED : 16- TRAFFIC SAFETY FEATURES : 17- HISTORICAL SIGNIFICANCE : 18- NAVIGATION CONTROL : | STRUCTURE L | RVICE==================================== | 1999 Destrian No N-N-N-N 5 N/A | 19 00 0673 19 02 NN |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 2- APPROACH ROADWAY WIDTH : 3- BRIDGE MEDIAN : 3- SREW ANGLE : 5- STRUCTURE FLARED : 6- TRAPFIC SAFETY FEATURES : 7- HISTORICAL SIGNIFICANCE : 8- NAVIGATION CONTROL : 9- NAVIGATION VERTICAL CLEARANCE : | STRUCTURE E | RVICE==================================== | 1999 DESTRIAN NO N-N-N-N 5 N/A NO | 19 00 0673 19 02 NN |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 9- YEAR OF A.D.T. : 1- DESIGN LOAD : 12- APPROACH ROADWAY WIDTH : 13- BRIDGE MEDIAN : 14- SKEW ANGLE : 15- STRUCTURE FLARED : 15- STRUCTURE FLARED : 16- TRAPPIC SAPETY FEATURES : 17- HISTORICAL SIGNIFICANCE : 18- NAVIGATION CONTROL : 19- NAVIGATION VERTICAL CLEARANCE : 10- NAVIGATION HORIZONTAL CLEARANCE : | STRUCTURE I | RVICE==================================== | 1999 DESTRIAN NO N-N-N-N 5 N/A NO . NO | 19 00 0673 19 02 NN |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 1- DESIGN LOAD : 1- APPROACH ROADWAY WIDTH : 3- BRIDGE MEDIAN : 3- BRIDGE MEDIAN : 3- STRUCTURE FLARED : 5- STRUCTURE FLARED : 6- TRAFFIC SAFETY FEATURES : 7- HISTORICAL SIGNIFICANCE : 8- NAVIGATION CONTROL : 9- NAVIGATION VERTICAL CLEARANCE : 10- NAVIGATION HORIZONTAL CLEARANCE : 1- STRUCT. OPEN, POSTED OR CLOSED TO | STRUCTURE E | RVICE==================================== | 1999 DESTRIAN NO N-N-N-N 5 N/A NO . NO | 19 00 0673 19 02 02 ١٩ 02 00 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 0- YEAR OF A.D.T. : 1- DESIGN LOAD : 12- APPROACH ROADWAY WIDTH : 13- BRIDGE MEDIAN : 14- SKEW ANGLE : 15- STRUCTURE FLARED : 16- TRAFFIC SAFETY FEATURES : 17- HISTORICAL GIONIFICANCE : 18- NAVIGATION CONTROL : 19- NAVIGATION VERTICAL CLEARANCE : 10- NAVIGATION HORIZONTAL CLEARANCE : 11- STRUCT. OFEN, POSTED OR CLOSED TO 12- TYPE OF SERVICE : | TRAFF :PEDESTRIAN C | RVICE==================================== | 1999 DESTRIAN NO N-N-N-N 5 N/A NO . NO | 19 00 0673 19 02 02 NN 00 000 |
| 8- LANES ON AND UNDER STRUCTURE : 9- A.D.T. OF INVENTORY ROUTE : 9- A.D.T. : 9- YEAR OF A.D.T. : 9- ADDA OF A.D.T. : 9- APPROACH ROADWAY WIDTH : 9- BRIDGE MEDIAN : 9- STRUCTURE FLARED : 9- NAVIGATION CONTROL : 9- NAVIGATION VERTICAL CLEARANCE : 9- NAVIGATION MORIZONTAL CLEARANCE : 9- STRUCT. OPEN, POSTED OR CLOSED TO 12- TYPE OF SERVICE : | TRAFF. : | RVICE==================================== | 1999 DESTRIAN NO N-N-N-N 5 N/A NO . NO | 19 00 0673 19 02 02 19 02 02 |
| 8- LANES ON AND UNDER STRUCTURE : | TRAFF. : | RVICE | 1999 DESTRIAN IO N-N-N-N 5 N/A NO OPEN | 19 00 0673 19 02 |

| T (5) | 5 | | | |
|---------------------------------|--|---------------------------|---|---------------------------------------|
| FEDERAL SYSTEM | | PUERTO RICO HIGHWA | | PAGE 2 OF 7 |
| | _ | BRIDGE STUDIES AND EV | | 4 |
| BRIDGE No.: 01137 | Е | RIDGE REINSPECTION & H | VALUATION REPORT | A |
| | | 2.027.3 | 18.4 107 | |
| 47- INV. ROUTE, TOTAL HORIZ, CL | | | i9m(77.39£5) -R≃23.6m(| 77.4(Et) 184 |
| 48- LENGTH OF MAXIMUM SPAN : | | | | 00236 |
| 49- STRUCTURE LENGTH : | | | | 000521 |
| 50- CURB OR SIDEWALK WIDTHS : . | • • • • • • • • • • • • • • • • • • • | NONE | | 00000 |
| | | | | |
| | | =======STRUCTURE DAT | | |
| 51- BRIDGE ROADWAY WIDTH, CURE | | | | * |
| 52- DECK WIDTH, OUT TO OUT : | | | | |
| 53- MI, VERT. CLEAR. OVER BRIDG | | | | |
| 54- MINIMUM VERTICAL UNDERCLEAR | | | | |
| 55- MINIMUM LATERAL UNDERCLEARA | | | | |
| 56- MINIMUM LATERAL UNDERCLEARA | NCE ON LEFT : | | 2.22m (7.28f | (t) 022 |
| | | | | |
| | === | ===============CONDITION= | | |
| 1 | | | | |
| 58- DECK: FAIR CONDITION | RATING: 5 | | | CK COMMENTS: |
| 58.1 WEARING SURFACE: MATERI | AL: STEEL | CONDITION : | | .1 LITE AND MODERATE CORROSION IN ALL |
| THICKNESS: | | | | HE STRUCTURE. |
| DETERIORATION: YES X N | | ADEQUATE INADEQUAT | re . | |
| | | NO | | |
| 58.2 SLAB OR PLATE: MATERIAL | | CONDITION 5 | | |
| CRACKING: FINE | ABDIAN OBEN | | | |
| TOP BOTTOM - | | | | |
| | | in. & L > 1 in. x | in the second | |
| SCALING : | to % in., M % in | ½ in., H ½ in J | 1 in., S > 1 | |
| | and the second | | | |
| EFFLORESCENCE EXUDATION | RUST STAINS X | CORROSION: XLIGHT MC | DERATE SEVERE | |
| 58.3 MOVEMENT: DECK TO BACKWA | LL Cm. | DECK TO APPROACH SLAB | cm. | |
| | · · · · · · · · · · · · · · · · · · · | | | |
| | |) (58.6) (58.7 | | |
| | CURBS MEDIA | n Sidewalks Parape | TS RAILING | |
| | | - | | |
| MATERIAL | 1 1 | } | STEEL | |
| CONDITION RATING | - ! | | | |
| HEIGHT LOSS (cm) | 1 1 | 1. 1 | 1 1 | |
| JOINTS | | | OK | |
| DRAINAGE | 1 1 | | OK | |
| ALIGNMENT | | | OK | |
| CORROSION (L-M-S) | 1 1 | 1 1 | L | |
| PAINT:G-GOOD,F-FAIR, | | | F | |
| P-POOR, N-NONE | 1 1 | 1 . 1 | 1 1 | |
| U-USELESS TO PAINT | 1 | 1 1 | 1 | |
| SAFETY | | | YE3 | |
| CRACKING (F-M-O) | 1 1 | 1 1 | I I | |
| SPALLING (S-L) | | | | |
| SCALING (L-M-H-S) | 1 1 | 1 | | |
| | <u> </u> | т т з | I | |
| | | | | |
| 58.9 LIGHTING STANDARDS: MA | TERIAL: NO | CONDITION: | FUNCTIONI | NG: YES NO |
| 58.10 UTILITIES: TYPE: NO | SIZE: | SAFBTY: | | |
| 58.11 JOINTS: EXPANSION | CONSTRUCTION | CONDITION: | FUNCTIONING: YE | is no |
| LEAKING: YES NO | CRACKING: FI | NE MEDIUM OPEN | SPALLING: SMALL | LARGE |
| 58.12 DRAINS AND SCUPPERS: M | ATERIAL: | CONDITION: | FUNCTIONIN | ig: Yes no |
| | | | | |

| | 3 | | | | | | | | | | | | |
|---------|---------------|-------------|--|-----------|---------------------|-----------|------------|--|-----------|---------------|---|-----------|------------|
| FEDERA | AL SYSTEM | | | | PUE | RTO RICO | HIGHWAY A | UTHORITY | | | | PA | 315 3 OF 7 |
| | | | | | BRIDGE | STUDIES | AND EVALU | JATION OFF | ICE | | | | |
| BRIDGE | No.: 01137 | | | | BRIDGE F | EINSPECTI | ON & EVA | UATION RE | PORT | | | | |
| 59- SUE | PERSTRUCTURE | FAIR CO | NDITION | RA | TING: S | | | | s | UPERSTRUC | TURE COMM | IBNTS : | |
| 59.1 | BEARING DE | VICES: TY | PE: | | FIXED | MOVA | BLE | OUT OF PL | UMB 5 | 9.5 LITE | ABRASION | BY CORROS | ION. |
| | PAINT: | GOOD | FAIR | POO | r no | NE U | SELESS TO | PAINT | | | | | |
| | CONDITION: | | | FUNCT | IONING: | YES 1 | 10 | | | | | | |
| 59.2 | BRIDGE SEA | TS, PEDEST. | AL, GROUT E | ADS, ABUT | MENTS OR | PIER SEAT | S WHERE I | BEAMS BEAR | | | | | |
| 3 | DIRECTLY OF | | | | | | | | | | | | |
| | CONDITION: | 1 | CRAC | KING: | F M | 0 5 | PALLING: | S L | | | | | |
| | SCALING: | L M | | | | | | | | | | | • |
| 59.3 | STEEL-BEAM | S: TYPE: | | DIMENS | IONS (heig | ht;width; | thickness | s): | | | | | |
| - 9 | CONDITION: | | | | 12 12 | | | | U | | | | |
| 59.4 | CONCRETE-BO | x 10 gr | | | | | | | | | | | |
| | CONDITION: | | 2000-000-000-000-0 | | 90311303(2) - 6555K | | ALLING: | S L | | | | | |
| | SCALING: ' | | | | | | | | | | | | |
| 59.5 | TRUSSES: | | | ONDITION | : 5 | CORF | OSION: X | LXM S | | | | | |
| | DAMAGE : | | | | | | P N | | | | | | |
| | A-TRUSS B- | | | | NG C=PORT | ALS D=FLC | OR BEAMS | E*=STRING | ERS | | | | |
| 59.6 | DRAINAGE: 3 | FYPE: | | CONDITIO | N : | PC | INCTIONING | : YES | NO | | | | |
| 59.7 | HINGES: CO | NOITION: | | | | YES 1 | O NOVENI | NT: YES | NO | | | | |
| | ALIGNMENT: | GOOD | BAD | PAINT: | GF | PN | υ | | | | | | |
| 59.8 | DEFLECTION | S: X NORM. | AL EXCE | SSIVE | | cms. | | | | | | | |
| 59.9 | VIBRATIONS | X MINI | AL NOD | BRATE | BACESSIV | в | | | | | | | |
| 60- SUB | SSTRUCTURE: 8 | SATISFACT | ORY COND. | RATIN | G: 6 | | | | | | | | |
| | | < | ABUTN | IENTS- | ; | < | PIERS C | R NON PIL | ES BENTS- | > | <p< td=""><td>ILES BENT</td><td>3></td></p<> | ILES BENT | 3> |
| | | i 60.1.1 | 60.1.2 | 60.1.3 | 60.1.4 | 60.2.1 | 60.2.2 | 60.2.3 | 60.2.4 | 60.2.5 | 60.4.1 | 60.4.2 | 60,4,3 |
| | | 8 | 1 12 | | | 102 | | N | S | 8 | | BRACING | |
| | | l | BACKWALL | | Ì | Ì | i | Ì | | i | Ì | i | I |
| MATERI | IAÎ. | } | | | | | | STEEL | CONCRETE | | | i | |
| CONDIT | TION RATING | , | | | | | | Server and the server of the s | • | | | | ==== |
| | (NG (F-M-O) | • | | | 1 2 | L. | L. | • • • • • • • • | l P | | 1 | i I | i. |
| | ING (S-L) - | | | | , | | | | s | | , | | |
| SCALIN | IG (L-M-H-S) | ľ | | | | 1 | L | 1 | L L | 1 | 1 | 1 | 1 |
| CORROS | SION (L-M-S) | | | | | | | · [| | | | ·[| |
| PAINT | (G-F-P-N-U) | Ì | i i | | 1 | | l. | F | F | i | i | i | Ì |
| MOVEME | INT | | | | | | · | NO | NO | | | . | |
| BROSIC | N | I | 1 1 | | 1 | 1 | 1 | NO | NO | 1 | l | 1 | 1 |
| UNDERM | INING | | | |) | | ·[· | NO | NO | | ļ | . | |
| | | 1 | لـــــــــــــــــــــــــــــــــــــ | | | 1 | 1 | 1 | 1 | 1 | i o | 1 | 1 |
| | | | | | | | | | | | | | |
| 60- SUE | STRUCTURE CO | OMMENTS: | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| FEDERAL SYSTEM | | PUERTO RIC | O HIGHWAY AUTHORITY | | PAGE 4 OF 7 |
|---|---|---|---------------------|-------------------|------------------|
| | | | S AND EVALUATION OF | | |
| BRIDGE No.: 01137 | I | BRIDGE REINSPEC | TION & EVALUATION R | BPORT | |
| 61- CHANNEL & CHANNEL PROT 61.1 CHANNEL SCOUR (EXTEN: 61.2 EMBANKMENT BROGION (I | F) : | RAT | TING : N | CHANNEL COMMENTS: | |
| 61.3 PROTECTIVE DEVICE 61.4 PENDER SYSTEM 61.5 RIP RAP 61.6 SPUR DIKES, JETTIES 61.7 OBSTRUCTION (DEBRIS) | | CONDITION PU | | | |
| 61.8 CHANNEL CHANGE: | YES NO | | | | |
| 61.9 ADEQUATE WATERWAY: 61.10 SURROUNDING AREA: | FLOODING: YES NO EROSION: YES NO AND/OR ABUTMENTS: DI | EXPLAIN D IF YES, EX IF YES, EXE ETRIMENTAL: | LAIN | | |
| 62- CULVERT AND RETAINING | NALLS :N/A | RATI | NG :N | CULVERT COMMENTS: | |
| 62.13/ | ARREL 62.2HEADWALL 63 | 2.3CUT-OFFWALL | 62.4RETAINING WALL | | |
| MATERIAL CONDITION RATING | | | 1 | | |
| FUNCTIONING (Y-N) CRACKING (F-M-O) SPALLING (S-L) | i i | ĺ | i | | |
| SCALING (L-M-H-S) CORROSION (L-M-S) SETTLEMENT (Y-N) | 1 1 | 1 | 1 | | |
| ALIGNMENT (Y-N) PAINT (G-F-P-N-U) | 1 | i | I | | |
| 63- METHOD USED TO DETERMIN | NE OPERATING RATING | ALLOWABLE ST | riss | | 19 ¹⁹ |
| 64- OPERATING RATING : | | PEDESTRIAN | | | 80 |
| 65- METHOD USED TO DETERMIN 66- INVENTORY RATING : | | | TESS | | 2 800 |
| | | | | | |

| | 8 | |
|--|---|-------------------|
| FEDERAL SÝSTEM | PUERTO RICO HIGHWAY AUTHORITY | PAGE 5 OF 7 |
| | BRIDGE STUDIES AND EVALUATION OFFICE | PAGE 5 CF 7 |
| BRIDGE No.: 01137 | BRIDGE REINSPECTION & BVALUATION REPORT | |
| 2000 (Artist 201 | | |
| 67- STRUCTURAL EVALUATION : | | 5 |
| SEVERE CORROSION & LIGHT S | SECTION LOSS AT WEARING SURFACE DUE TO PONDING. | |
| FINE CRACKS, SMALL SPALLING | GS & LIGHT SCALINGS AT COLUMNS FOOTINGS. PONDING AT | |
| STAIRS & REST AREA. | | |
| | | |
| | | 2 |
| | | |
| 2 G I | | |
| 100 | | |
| | | |
| 68- DECK GEOMETRY' : | | N |
| | | |
| N/A | | |
| | | |
| 69- UNDERCLEARANCE, VERTICAL & HORIZ | A. / | |
| S. MWT (1.19 | UIRING HIGH PRIORITY OF CORRECTIVE ACTION. | |
| BASTCANNI INTONAABDA KAQU | SIGNA HIGH PRIORITI OF CORRECTIVE ACTION. | |
| 70- BRIDGE POSTING ; | N/A | 5 |
| | | |
| 71- WATERWAY ADEQUACY : | | N |
| | | |
| N/A | | |
| REMOTE - CREATER THAN 100 YEARS | S. SLIGHT - 11 TO 100 YEARS. OCASSIONAL - 3 TO 10 YEARS. FREQUENT - | LEGG THAN I VEADS |
| | IENCE. HIGHWAY PASSABLE IN A MATTER OF HOURS. SIGNIFICANT - TRAFFIC DEL | |
| SEVERE - LONG TERM DELAYS TO TH | | |
| | | |
| 72- APPROACH ROADWAY ALIGNMENT : | | 6 |
| 8 | | |
| N/A | | |
| 72.2 SLAB OR PAVEMENT CONDIT | TION : MATERIAL : | |
| CRACKING: F N O SPALI | | YES NO |
| SETTLEMENT: YES NO MO | | DEFORMATION: |
| SAFETY: HAZARDOUS YES | NO DRAINAGE: INADEQUATE: YES NO PONDING: YES NO | |
| MOVEMENT: PAVEMENT-APPROACH & | SLAB: YES NO EMBANKMENT: CONDITION: | |
| | YES NO EROSION: YES NO IF YES, EXPLAIN | |
| CONSTRUCTION: FLIMSY: | YES NO | |
| INTEGRITY IMPA | | |
| 72.3 UNDESIRABLE IMPACT: YES 72.4 JOINTS: TYPE: IN | NO NADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO | |
| 72.5 GUARDRAIL: TYPE: | | NO |
| A CONTRACTOR OF A CONTRACTOR O | | NO |
| SAFETY: SECURELY ATTACHED: | YES NO PEDESTRIAN HAZARDS: YES NO | |
| | | |
| 72 - APPROACH ROADWAY - COMMENTS: | | |
| | | |

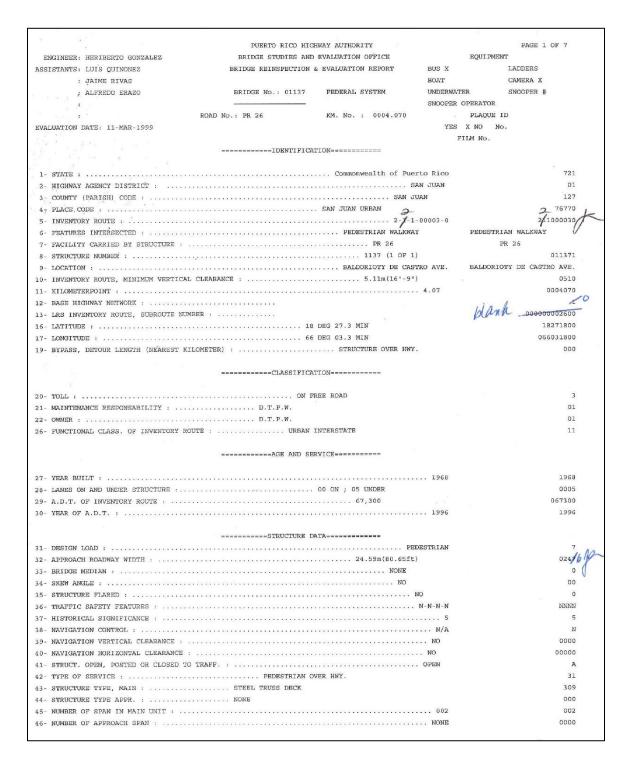
| FEDERAL SYSTEM | PUERTO RICO HIGHWAY AUTHORITY | PAGE 6 OF 7 |
|--|---|-------------|
| | BRIDGE STUDIES AND EVALUATION OFFICE | |
| BRIDGE NO. :01137 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| | SSESSES PROPOSED IMPROVEMENT SSESSES | |
| | | |
| | | 352 |
| 76- LENGTH OF STRUCTURE IMPROVEMEN | T : 52.14 MTS. (171.01 FT.) | 000521 |
| 17 M 68 69 9 | ##=======INSPECTIONS============ | |
| 20 B | | |
| 89- RESERVED | | |
| | JUNE 2001 | 0601 |
| | Y : EVERY-24-MONTHS | 24 |
| and a second sec | NOT NEEDED | N N N |
| 93- CRITICAL FEAT. INSPECT. DATE: FRACTURE CRITICAL | UNDERWATER OTHER | |
| PROJULE OR LOCK | OLDER OTHER | |
| - | IMPROVEMENT COST | |
| 94- BRIDGE IMPROVEMENT COST : | | 000000 |
| 95- ROADWAY IMPROVEMENT COST : | N/A | 000000 |
| 96- TOTAL PROJECT COST : | (2.00) (52.14) (825) (0.15) =\$12,905 | 000013 |
| 97- YEAR OF IMPROVEMENT COST ESTIM | ATED : 2001 | 2001 |
| | ==CLASSIFICATION AND STRUCTURE DATA== | |
| | ==CLASSIFICATION AND STRUCTURE DATA== | |
| 98- BORDER BRIDGE : | | - 24 |
| | 1 ······················ | |
| | : IS A DH | 0 |
| | N : N/A | N |
| | NOT CARRIED TRAFFIC | 0 |
| | ON : | |
| | RY ROUTE :NHS | 0 |
| 105- FEDERAL LANDS HIGHWAYS : | | 0000 |
| | STBEL PLATE | 5 |
| 108- WEARING SURF./ PROTECT. SYSTEM | | 000 |
| | 4%(EST) | 04 |
| | PART OF NNT | 1 |
| 111- PIER OR ABUT. PROTECTION (NAV | | |
| | YRS | Y |
| 113- SCOUR CRITICAL BRIDGE : | N/A | N |
| 114- FUTURE AVERAGE DAILY TRAFFIC | : | 092073 |
| 115- YR. OF FUTURE A.D.T. : | | 2018 |
| 116- MINIM. NAVIG. VERT. CLEARANCE | : N/A | |
| VERTICAL LIFT BRIDGE : | | |
| | | 10 |
| | | |
| | | 062901 |
| 130- CRITICAL FRACTURE INSP. DATE | : | |
| ENGINEER : EDUARDO MARQUEZ | | |
| | | |
| FEDERAL SYSTEM | | |
| PERSENT PICTOR | PUERTO RICO HIGHWAY AUTHORITY BRIDGE STUDIES AND EVALUATION OFFICE | PAGE 7 OF 7 |
| BRIDGE NO. :01137 | BRIDGE STUDIES AND EVALUATION OFFICE BRIDGE REINSPECTION & EVALUATION REPORT | |
| | | |
| AUXILIARY ITEMS | | |
| 1-SIGNS | | |
| TYPE: | | |
| MATERIAL: | | |
| CONDITION: | | |
| | | |

REMARKS :

REHABILITATION CONSISTS ON REPAIRING THE DEFICIENCIES DISCUSSED ON

ITEM 67.

D.4 March 11, 1999



| FEDERAL SYSTEM ERIDGE No.: 01137 47- INV. ROUTE, TOTAL HORIZ. CL 48- LENGTH OF MAXIMUM SPAN : 49- STRUCTURE LENGTH : 50- CURB OR SIDEWALK WIDTHS : . | | в | DUPPTO DIC | | | | | | |
|---|--|----------------------|------------------------------|----------------------------|-------------------|----------------------|----|------------------|--------|
| 47- INV. ROUTE, TOTAL HORIZ. CL 48- LENGTH OF MAXIMUM SPAN : 49- STRUCTURE LENGTH : | | B | | O HIGHWAY A | | | | PAGE | 2 OF 7 |
| 47- INV. ROUTE, TOTAL HORIZ. CL 48- LENGTH OF MAXIMUM SPAN : 49- STRUCTURE LENGTH : | | | | | ATION OFFICE | | | | |
| 48- LENGTH OF MAXIMUM SPAN :49- STRUCTURE LENGTH : | | BRI | | TION & EVAL | JATION REPORT | 2 | | | |
| 48- LENGTH OF MAXIMUM SPAN :49- STRUCTURE LENGTH : | | 11 | 18.4 1 | 250 | | | | IR and | 433 8 |
| 48- LENGTH OF MAXIMUM SPAN :49- STRUCTURE LENGTH : | EARANCE : | | sess unt | . L=23.59m(| 77.39ft) R=23 | .6m(77.4ft) | | 100 | -2200 |
| 49- STRUCTURE LENGTH : | | | 23.6m(77 | .4ft) | | | | V | 00235 |
| | | | | | | | | | 000521 |
| 50- CORB OR SIDEWALK WIDTHS : . | | | | /1.0110/ | | | | | 000000 |
| | | | NONE | | | | | | 000000 |
| | | | =====STRUC | TURE DATA == | | | | | |
| 51- BRIDGE ROADWAY WIDTH, CURB | | | | | | 37ft) | | | 0016 |
| 52- DECK WIDTH, OUT TO OUT : | | | | | | | | | 0020 |
| | | | | | | | | | 9999 |
| 53 MI. VERT. CLEAR. OVER BRIDG | | | | | | | | | |
| 54- MINIMUM VERTICAL UNDERCLEAR. | | | | | | | | | H0510 |
| 557 MINIMUM LATERAL UNDERCLEARA | | | | | | | | | H012 |
| 56- MINIMUM LATERAL UNDERCLEARA | NCE ON LEE | FT : | | | 2.22m(7 | .28ft) | | | 022 |
| · · · · · | | | | | | | | | |
| | | ===== | ======C0 | NDITION==== | | | | | |
| | | | | | | | | | |
| 58- DECK: FAIR CONDITION | RATING: | 5 | | | | DECK COMMENTS: | | | |
| 58.1 WEARING SURFACE: MATERIA | | | CONDITION | . 5 | | STRUCTURE WAS | | STRET. SHOW | S LICH |
| THICKNESS: | | | 2011211101 | | | T TO MODERATE | | January Children | |
| | | ~ ~ ~ ~ | | | | CORROSION. | | | |
| DETERIORATION: YES X N | | | | NADEQUATE | | CORRUSION. | | | |
| | AFETY: X | YES NO | | | | | | | |
| 58.2 SLAB OR PLATE: MATERIAL | : STEEL | | | CONDITION | 5 | | | | |
| CRACKING: FINE | MEDIUM | OPEN | | | | | | | |
| TOP BOTTOM | | | | | | | | | |
| SPALLING: | < 1 in. DF | EP x 6 i | n. & L > 1 | in. x 6 in | 1. & | | | | |
| A second sec second second sec | | | - ½ in., H ½ | | | | | | |
| | | | / / ··· // | | | | | | |
| EFFLORESCENCE EXUDATION | RUST STF | INS XCO | RROSION: XLI | GHT MODER | TE SEVERE | | | | |
| 58.3 MOVEMENT: DECK TO BACKWA | LL | cm. DE | CK TO APPROA | CH SLAB | cm. | | | | |
| | · | | 1 | 1 | 1 | | | | |
| | (58.4) | (58.5) | (58.6) | (58.7) | (58.8) | | | | |
| | CURBS | MEDIAN | SIDEWALKS | PARAPETS | RAILING | | | | |
| | | | | | | | | | |
| MATERIAL | i i | | | 1 | STEEL | | | | |
| CONDITION RATING | - | | | | 61 | | | | |
| | | | | | | | | | |
| HEIGHT LOSS (cm) | 1 1 | | | 1 | | | | | |
| JOINTS | | | | | OK | | | | |
| DRAINAGE | 1 1 | | I | I . | 1 | | | | |
| | | | | | 0K | | | | |
| ALIGNMENT | 1 - 1 | | L | I | L | | | | |
| ALIGNMENT CORROSION (L-M-S) | I and the later of | | | | F | | | | |
| | | | I | 1 | i | | | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, | | | , | | | | | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE | i i | | 1 | i i | | | | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE U-USELESS TO PAINT | | | | 1 | VEP | | | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-FOOR,N-NONE U-USELESS TO PAINT SAFETY | | | | | YES | | | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE U-USELESS TO PAINT SAFETY CRACKING (F-M-O) | | | | | YES | | | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-FOOR,N-NONE U-USELESS TO PAINT SAFETY | | | | | YES | | | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE U-USELESS TO PAINT SAFETY CRACKING (F-M-O) | | | | | YES | | | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE U-USELESS TO PAINT SAFETY CRACKING (F-M-O) SFALLING (S-L) | | | | | YE3 | | | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE U-USELESS TO PAINT SAFETY CRACKING (F-M-O) SFALLING (S-L) | | | | | YES | | | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE U-USELESS TO PAINT SAFETY CRACKING (F-M-O) SFALLING (S-L) SCALING (L-M-H-S) | | | | | [] | IONING: YES | NO | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE U-USELESS TO PAINT SAFETY CRACKING (F-M-O) SPALLING (S-L) SCALING (L-M-H-S) 58.9 LIGHTING STANDARDS: MAX | | | CONDITION | : | [] | IONING: YES | NO | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE U-USELESS TO PAINT SAFETY CRACKING (F-M-O) SPALLING (S-L) SCALING (L-M-H-S) 58.9 LIGHTING STANDARDS: MAX 58.10 UTILITIES: TYPE: NO | TERIAL: NC | , SIZE: | | : SAFETY: | | | NO | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE U-USELESS TO PAINT SAFETY | TERIAL: NC |) SIZE: 'ION C | ONDITION: | : SAFETY: | FUNCTIONING: | YES NO | NO | | |
| CORROSION (L-M-S) PAINT:G-GOOD,F-FAIR, P-POOR,N-NONE U-USELESS TO PAINT SAFETY CRACKING (F-M-O) SPALLING (S-L) SCALING (L-M-H-S) 58.9 LIGETING STANDARDS: MAX 58.10 UTILITIES: TYPE: NO | I I I I I I I I I I I I I I I I I I I | , SIZE: | ONDITION: | : SAFETY: OPEN SI | | YES NO IALL LARGE | NO | | |

| FEDERAL SYSTEM | | | | DITE | RTO RICO | UTCONAV A | | | | | PA | 3E 3 OF 7 |
|--------------------|------------|--------------|----------|---------------------------------------|-----------|-----------|------------|-----------|---------------------------------------|--|-----------|-----------|
| FEDERAL SISTER | | | | | STUDIES | | | TOP | | | | JE 3 01 / |
| | | | | | EINSPECTI | | | | | | | |
| BRIDGE No.: 01137 | | | | BRIDGE K | EINSPECTI | ON & FAUL | QATION RE | PORT | | | | |
| 59- SUPERSTRUCTURE | : FAIR CON | DITION | RA | FING: 5 | | | | su | PERSTRUC | TURE COMM | ENTS: | |
| 59.1 BEARING DE | | | | FIXED | MOVA | BLE | OUT OF PL | JMB | | | | |
| PAINT: | | FAIR | P00 | r NO | | SELESS TO | | | | | | |
| CONDITION: | | | | IONING: | | | | | | | | |
| 59.2 BRIDGE SEA | | T. OROLITE I | | | | | RAMS BEAR | 6 | | | | |
| DIRECTLY O | | | 100,1001 | IBNID ON | FILK DERI | - | | | | | | |
| CONDITION: | 1 | | KING: | E M | o s | | с т | | | | | |
| SCALING: | | | | | U 8 | PALISTING | а ц | | | | | |
| | | | | | | | | | | | | |
| 59.3 STEEL BEAM | | | | 0 10 20 F | | | | | | | | |
| CONDITION: | | | | | PAINT: | G F | PN | U | | | | |
| 59.4 CONCRETE-B | | | | | | | | | | | | |
| CONDITION | | | CKING: | F M | 0 SP | ALLING: | S L | | | | | |
| SCALING: | | | | | | | | | | | | |
| 59.5 TRUSSES: | | | | | | | LXM S | | | | | |
| DAMAGE : | | | | | GF | | | | | | | |
| A=TRUSS B= | UPPER & LO | WER LATER | AL BRACI | NG C=PORT | | | | | | | | |
| 59.6 DRAINAGE: | TYPE: | | CONDITIO | N : | FU | NCTIONING | : YES | NO | | | | |
| 59.7 HINGES: C | ONDITION: | | FUNCT. | IONING: | YES N | O MOVEME | NT: YES | NO | | | | |
| ALIGNMENT: | GOOD | BAD | PAINT: | G F | P N | U | | | | | | |
| 59.8 DEFLECTION | S: X NORMA | L EXCE | SSIVE | | cms. | | | | | | | |
| 59.9 VIBRATIONS | : X MINIM | AL MOL | ERATE | EXCESSIV | Е | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 60- SUBSTRUCTURE: | SATISFACTO | RY COND. | RATIN | 3: 6 | | | | | | | | |
| | 1 | | | | Trees | | - | | | (| 77.00 DTM | |
| | < | ABUTN | | · · · · · · · · · · · · · · · · · · · | · < | | IR NON PIL | ES BENTS- | > | [<p< td=""><td>JUSS BENI</td><td>,> </td></p<> | JUSS BENI | ,> |
| | 60.1.1 | | | 60.1.4 | | | 60.2.3 | 60.2.4 | 60.2.5 | 60.4.1 | 60.4.2 | 60.4.3 |
| | WINGWALL | | | | | | | | | | | |
| | 2 | BACKWALL | | | 1 | | 1 |] | | | 1 | 1 |
| | | | | - | 1 | | | | | | | |
| MATERIAL | 1 | Ì | | | 1 | l | STEEL | CONCRETE | | Ì | İ | I I |
| CONDITION RATING | | | | | | | 6 | 6 | | | | |
| CRACKING (F-M-O) | C 3 | | | 1 | 1 | ł | 1 | F | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | L | 1 | 1 |
| SPALLING (S-L) - | | | | | | | | | | | | |
| SCALING (L-M-H-S) | | | | l | 1 | í | i i | L | | i. | i i | 1 |
| CORROSION (L-M-S) | • | | | | | | | | | | | 1 |
| PAINT (G-F-P-N-U) | | | | 1 | 1 | | F | F | | 1 | i | |
| MOVEMENT | ā - 1 | 10 | | | | | NO | NO | | | | |
| EROSION | | | | | | i | NO NO | NO | | 1 | i | |
| UNDERMINING | | | | | | | | NO | | | | |
| OUDERDINING | 1 | | | | | | | | | I | 1 | |
| | • | | | | | | | | | | | |
| 60- SUBSTRUCTURE C | OMMONIPO | | | | | | | | | | | |
| 60- SUBSTRUCTURE C | JMMENTS: | | | | | | | | | | | |
| | | | | | | | | | | | | |

| Federal system | PUERTO RICO HIGHWAY AUTHORITY BRIDGE STUDIES AND EVALUATION OFFICE | PAGE 4 OF 7 |
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| BRIDGE No.: 01137 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| | | |
| 51- CHANNEL & CHANNEL PROTECTION : N/A | RATING : N | CHANNEL COMMENTS: |
| 61.1 CHANNEL SCOUR (EXTENT) : | | |
| 61.2 EMBANKMENT EROSION (EXTENT) : | | |
| | | |
| | CONDITION FUNCTIONING | |
| TYPE | MATERIAL RATING | |
| | YES NO | 3 ~ |
| · · · · · · · · · · · · · · · · · · · | <u>├~~~~~ </u> | |
| 61.3 PROTECTIVE DEVICE | | |
| 61.4 FENDER SYSTEM | | |
| 61.5 RIP RAP | | |
| 61.6 SPUR DIKES, JETTIES | | |
| . L | | |
| e | | |
| 61.7 OBSTRUCTION (DEBRIS, GROWTHS): | | |
| 61.8 CHANNEL CHANGE: YES NO DETRIMENTAL: YES NO IF | | |
| 61.9 ADEQUATE WATERWAY: YES NO | | |
| 61.10 SURROUNDING AREA: FLOODING: | | |
| | YES NO IF YES, EXPLAIN | |
| 61.11 LOCATION OF PIERS AND/OR ABUTM | ENTS: DETRIMENTAL: YES NO | |
| IF YES, EXPLAIN | | |
| 61.12 OTHER FEATURES THAT MAY AFFECT | STRUCTURE : | |
| | | |
| | | |
| 62 - CULVERT AND RETAINING WALLS :N/A | RATING :N | CULVERT COMMENTS: |
| 62 COLVERT AND RETRINING WALLS INVA | RELING IN | COLUMN CONTRACTO |
| · · · · · · · · · · · · · · · · · · · | | |
| 62.1BARREL 62.2HE | ADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL | |
| | | |
| MATERIAL | t I I | |
| CONDITION RATING | | |
| FUNCTIONING(Y-N) | | |
| CRACKING (F-M-O) | | 2 ¹⁰ |
| SPALLING (S-L) | | |
| | | |
| CORROSION (IM-S) | | |
| ALIGNMENT (Y-N) | | |
| | | |
| FAINT (G-2-E-N°0) | | |
| Analysis of the State of the St | | |
| 63- METHOD USED TO DETERMINE OPERATING | RATING | 2 |
| 64- OPERATING RATING : | | 800 |
| 65- METHOD USED TO DETERMINE INVENTORY | RATING | 2 |
| 66- INVENTORY RATING : | PEDESTRIAN | 800 |
| | | |

| FEDERAL SYSTEM | PUERTO RICO HIGHWAY AUTHORITY | PAGE 5 OF 7 |
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| 4.1 | BRIDGE STUDIES AND EVALUATION OFFICE | |
| BRIDGE No.: 01137 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| , 67- STRUCTURAL EVALUATION : | | |
| | | |
| | N LOSS AT WEARING SURFACE DUE TO PONDING. | e. |
| FINE CRACKS, SMALL SPALLINGS & LI | IGHT SCALINGS AT COLUMNS FOOTINGS. PONDING AT | |
| STAIRS & REST AREA. | | |
| | | |
| | | |
| | | |
| and the second | | |
| | | |
| | | |
| , 68- DECK GEOMETRY : | | N |
| 68- DECK GEOMETRI : | | 10 |
| N/A | | for the second s |
| M/ A | | A |
| 69- UNDERCLEARANCE, VERTICAL & HORIZONTAL | | |
| | | 21 |
| BASICALLY INTOLERABLE REQUIRING | HIGH PRIORITY OF CORRECTIVE ACTION. | V |
| | | |
| 70- BRIDGE POSTING : | N/A | 5 |
| | | |
| 71- WATERWAY ADEQUACY : | | N |
| | | |
| N/A | | |
| | | |
| | LIGHT - 11 TO 100 YEARS. OCASSIONAL - 3 TO 10 YEARS. | |
| | HIGHWAY PASSABLE IN A MATTER OF HOURS. SIGNIFICANT - | TRAFFIC DELAYS OF UP TO SEVERAL DAYS |
| SEVERE - LONG TERM DELAYS TO TRAFFIC | WITH RESULTING HARDSHIP | |
| 72- APPROACH ROADWAY ALIGNMENT : | | |
| | | 14/ |
| N/A | | U |
| | | |
| 72.2 SLAB OR PAVEMENT CONDITION : | MATERIAL : | |
| CRACKING: F N O SPALLING: | | |
| | F: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: | EXCESSIVE DEFORMATION: |
| | DRAINAGE: INADEQUATE: YES NO PONDING: YES | NO |
| MOVEMENT: PAVEMENT-APPROACH SLAB: | YES NO EMBANKMENT: CONDITION: | |
| | NO EROSION: YES NO IF YES, EXPLAIN | |
| CONSTRUCTION: FLIMSY: | YES NO | |
| INTEGRITY IMPAIRED: | YES NO IF YES, EXPLAIN | |
| 72.3 UNDESIRABLE IMPACT: YES NO | | |
| 72.4 JOINTS: TYPE: INADEQUA 72.5 GUARDRAIL: TYPE: MATER | | io 3: YES NO |
| | BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING | |
| ALIGNMENT: HORIZONTAL: GOOD SAFETY: SECURELY ATTACHED: YES | | |
| SAFEII: SECOREDI ATTACHED: IBS | NO LEEDININ INDRIDO. LEO NO | |
| 72- APPROACH ROADWAY - COMMENTS: | | |
| | | |
| | | |

| [| | - |
|--|---|--|
| FEDERAL SYSTEM | PUERTO RICO HIGHWAY AUTHORITY | PAGE 6 OF 7 |
| Configuration of the product of the pr | BRIDGE STUDIES AND EVALUATION OFFICE | Appender Appendick i Hangan Hankaran - Danishi |
| BRIDGE NO. :01137 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| | | |
| and a set of the set | =====PROPOSED IMPROVEMENT======= | |
| | | |
| and the second data from the second se | REHABILITATION NEEDED | 352 |
| 76- LENGTH OF STRUCTURE IMPROV | EMENT : 52.14 MTS.(171.01 FT.) | 000521 |
| | | |
| | INSPECTIONS | |
| 1 | | |
| | | |
| | MARCH-11-1999 | 0399 |
| | UENCY : EVERY-24-MONTHS | 24 |
| to and second to the second second | N : NOT NEEDED | N N N |
| 93- CRITICAL FEAT. INSPECT. DA FRACTURE CRITICAL | TE:N/A UNDERWATER OTHER | |
| FRACTURE CRITICAL | UNDERWATER OTHER | |
| | IMPROVEMENT COST | 2 |
| | | |
| 94 - BRIDGE IMPROVEMENT COST : | N/A | 000000 |
| 95- ROADWAY IMPROVEMENT COST : | N/A | 000000 |
| 96- TOTAL PROJECT COST : | (2.00) (52.14) (825) (0.15) =\$12,905 | 0000193 |
| 97- YEAR OF IMPROVEMENT COST E | STIMATED : 1999 | 1999 |
| | | U |
| | ==CLASSIFICATION AND STRUCTURE DATA== | |
| · | | |
| | | -55 |
| and the second construction of a second second second second | MBER : | 1 |
| | ION : IS A DH | l N |
| | ATION :N/A NOT CARRIED TRAFFIC | 0 |
| and a second | NATION : | 5 |
| | ENTORY ROUTE : | 20 |
| | | 0 |
| | N/A | 0000 |
| | STEEL PLATE | 5 |
| 108- WEARING SURF. / PROTECT. S | | 000 |
| and the second se | IC : | 04 |
| | RK : PART OF NNT | 1 |
| 111- PIER OR ABUT. PROTECTION | (NAVIGATION) : N/A | 50 S |
| 112- NBIS BRIDGE LENGTH : | YES | Y |
| 113- SCOUR CRITICAL BRIDGE : | N/A | N |
| 114- FUTURE AVERAGE DAILY TRAF | FIC : | 092073 |
| 115- YR. OF FUTURE A.D.T. : | | 2016 |
| 116- MINIM. NAVIG. VERT. CLEAR | ANCE :N/A | |
| VERTICAL LIFT BRIDGE : | | |
| | | |
| | | |
| | | 031199 |
| 130- CRITICAL FRACTURE INSP. D. | ATE : | |
| | 1 11/2 | |
| ENGINEER :HERIBERTO GONZA | PRA | |
| | | |
| | | |

| FEDERAL SYSTEM | PUERTO RICO HIGHWAY AUTHORITY BRIDGE STUDIES AND EVALUATION OFFICE | PAGE 7 OF 7 |
|----------------------|---|-------------|
| BRIDGE NO. :01137 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| | | |
| AUXILIARY ITEMS | | |
| 1-SIGNS | | |
| TYPE: | | |
| MATERIAL: | | |
| CONDITION: | | |
| 1 H N | | |
| 12 B | | 12 |
| REMARKS : | | |
| REHABILITATION CONSI | STS ON REPAIRING THE DEFICIENCIES DISCUSSED ON | |
| ITEN 67. | | |
| | | |
| | | |

D.5 August 19, 1996

| PUERTO RICO HIGHWAY AUTHORITY | |
|--|---|
| | PAGE 1 OF 3 |
| BRIDGE STUDIES AND EVALUATION OFFICE | DATE : 08/19/96 |
| BRIDGE REPORT | TIME : 13:59:19 |
| | |
| FEDERAL SYSTEM BRIDGE NO. : 01137 - ROAD NO. : PR 26 - KM. N | NO. : 004.070 |
| IDENTIFICATION==================================== | |
| 1- STATE : Commonwealth of Puerto R: | Leo 721 |
| 2- STATE HIGHWAY DEPARTMENT : | |
| 3- COUNTY (PARISE) CODE : | 127 |
| 4- PLACE CODE : | 76770 |
| 5- INVENTORY ROUTE : | |
| 6- FEATURES INTERSECTED : | PEDESTRIAN WALKWAY |
| 7- FACILITY CARRIED BY STRUCTURE : PR 26 | FR 26 |
| 8+ STRUCTURE NUMBER : 1137 (1 OF 1) | 011371 |
| 9- LOCATION : BALDORIOTY DE CASTRO AN | TE. BALDORIOTY DE CASTRO AVE. |
| 10- INV. ROUTE, MIN. CLEAR. (0.01m) : | 1609 |
| 11- MILEPOINT : | 004070 |
| 16- LATITUDE : 18 DEG 27.3 MIN | 18273 |
| 17- LONGITUDE : 66 DEG 03.3 MIN | 066033 |
| 19- BYPASS, DETOUR LENGTH (NEAREST MILE) : | 00 |
| | |
| CLASSIFICATION | |
| 20- TOLL : ON FREE ROAD | 3 |
| 21 - MAINTENANCE RESPONSABILITY : D.T.P.W. | 01 |
| 22- OWNER : | 01 |
| 26- FUNCTIONAL CLASS. OF INVENTORY ROUTE : URBAN INTERSTATE | 11 |
| AGE AND SERVICE | |
| · · · · · · · · · · · · · · · · · · · | 968 1968 |
| 27- YEAR BUILT : | 0005 |
| 28- LANES ON AND UNDER STRUCTURE : | 114900 |
| 29- A.D.T. OF INVENTORY ROUTE : | |
| | |
| ************************************** | |
| | P (1997) |
| | |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) | 081 |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) | 081 0 |
| 31- DESING LOAD : | 081 0 00 |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO | 050 0 00 0 |
| 32- APPEGACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO | 080 00 00 מאמות אות |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 24- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO 36- TRAFFIC SAFETY FEATURES : N-N-I | 081 0 00 0 אראוא אראוא 5 |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO 36- TRAFFIC SAFETY FEATURES : NO 37- HISTORICAL SIGNIFICANCE : N-N-H | 081 0 00 עומות אומות 5 5 7 א |
| 32- APPEOACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO 36- TRAFFIC SAFETY FEATURES : NO 37- HISTORICAL SIGNIFICANCE : N-N-H | 081 0 עראי אאמאות אייי 5 5 גע גע 000 000 |
| 32- APPEOACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO 36- TRAFFIC SAFETY FEATURES : NO 37- HISTORICAL SIGNIFICANCE : NO 38- NAVIGATION CONTROL : NO | 081 0 עמאמע אמאמע אי-א 5 5 גע גע 000 000 |
| 32- APPROACH ROADWAY WIDTH : | 081 0 עומות אות אות אות 5 5 7 ג ג ג 000 000 0000 |
| 32- APPEOACH ROADWAY WIDTH : | 081 0 00 00 10 10 10 10 10 10 10 10 10 10 |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO 36- TRAFFIC SAFETY FEATURES : NO 37- HISTORICAL SIGNIFICANCE : NO 38- NAVIGATION CONTROL : N 40- NAVIGATION HORIZONTAL CLEARANCE : N 41- STRUCT. OPEN, FOSTED OR CLOSED TO TRAFF. : OPEN | 081 0 00 0 5 5 5 5 5 5 7 4 000 000 000 0 000 0000 0 |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO 36- TRAFFIC SAFETY FEATURES : NO 37- HISTORICAL SIGNIFICANCE : NO 38- NAVIGATION CONTROL : N 39- NAVIGATION VERTICAL CLEARANCE : N 40- NAVIGATION VERTICAL CLEARANCE : N 41- STRUCT OPEN, POSTED OR CLOSED TO TRAFF. : PEDESTRIAN OVER HWY. 43- STRUCTURE TYPE, MAIN : STELL TRUSS DECK 44- STRUCTURE TYPE APPR. : NONE | 081 0 00 0 0 5 5 5 5 5 5 5 7 4 0 000 0 0 0 000 0 0 0 0 000 0 0 0 0 |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO 36- TRAFFIC SAFETY FEATURES : NO 37- HISTORICAL SIGNIFICANCE : NO 38- NAVIGATION CONTROL : N 39- NAVIGATION VERTICAL CLEARANCE : N 40- NAVIGATION VERTICAL CLEARANCE : N 41- STRUCT OPEN, POSTED OR CLOSED TO TRAFF. : PEDESTRIAN OVER HWY. 43- STRUCTURE TYPE, MAIN : STELL TRUSS DECK 44- STRUCTURE TYPE APPR. : NONE | 081 00 00 00 00 5 55 5 7 4 31 00 00 00 00 00 00 00 00 00 00 00 00 00 |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO 36- TRAFFIC SAFETY FEATURES : NO 37- HISTORICAL SIGNIFICANCE : NO 38- NAVIGATION CONTROL : NO 39- NAVIGATION VERTICAL CLEARANCE : N 40- NAVIGATION HORIZONTAL CLEARANCE : N 41- STRUCT OPEN, POSTED OR CLOSED TO TRAFF. : N 42- TYPE OF SERVICE : PEDESTRIAN OVER HWY. 43- STRUCTURE TYPE, MAIN : STEEL TRUSS DECK 44- STRUCTURE TYPE APPR. : NONE 45- NUMBER OF SPAN IN MAIN UNIT : O | 081 00 00 00 00 5 5 5 7 7 7 7 0 000 0 0000 0 00000 0 0000 0 00000 0 000000 |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO 36- TRAFFIC SAFETY FEATURES : NO 37- HISTORICAL SIGNIFICANCE : N-N-H 39- NAVIGATION CONTROL : N 40- NAVIGATION HORIZONTAL CLEARANCE : N 41- STRUCT. OPEN, FOSTED OR CLOSED TO TRAFF. : OPEN 42- TYPE OF SERVICE : PEDESTRIAN OVER HWY. | 081 00 00 00 00 5 5 5 7 7 7 0 0000 0 00000 0 0000 0 00000 0 0000 0 00000 0 0000 0 00000 0 000000 |
| 32- APPROACH ROADWAY WIDTH : 24.59m(80.65ft) 33- BRIDGE MEDIAN : NONE 34- SKEW ANGLE : NO 35- STRUCTURE FLARED : NO 36- TRAFFIC SAFETY FEATURES : NO 37- HISTORICAL SIGNIFICANCE : NO 38- NAVIGATION CONTROL : NO 39- NAVIGATION VERTICAL CLEARANCE : N 40- NAVIGATION VERTICAL CLEARANCE : N 41- STRUCT. OPEN, FOSTED OR CLOSED TO TRAFF. : PEDESTRIAN OVER HWY. 43- STRUCTURE TYPE, MAIN : STELL TRUSS DECK 44- STRUCTURE TYPE APPR. : NONE 45- NUMBER OF SPAN IN MAIN UNIT : O 46- NUMBER OF APPROACH SPAN : NONE | 081 0 00 00 0 0 0 5 5 5 7 4 000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| 32- APPROACH ROADWAY WIDTH : | 081 0 00 0 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 |

| | PUERTO RICO HIGHW | AY AUTEORITY | PAGE 2 OF 3 |
|--|---------------------------|---------------------------------|---------------|
| | BRIDGE STUDIES AND E | | |
| | | | |
| FEDERAL SYSTEM P | RIDGE NO. : 01137 - ROAD | 0 NO. : PR 26 - KM. NO. : 004.0 | 70 |
| 27 A. 10 | STRUCTUR | E DATA========= | |
| 51- BRIDGE ROADWAY WIDTH, CURB TO CURB : | | 1.64m(5.37ft) | 0054 |
| 52- DECK WIDTH, OUT TO OUT : | | | 0066 |
| 53- MI. VERT. CLEAR. OVER BRIDGE ROADWAY | | | 9999 |
| 54- MINIMUM VERTICAL UNDERCLEARANCE : | | | H1609 |
| 55- MINIMUM LATERAL UDERCLEARANCE ON RIG | | | . H039 073 |
| 56- MINIMUM LATERAL UNDERCLEARANCE ON LE | FT : | | 073 |
| | www.www.www.www.condi | TTON | |
| | MATERIAL | CONDITION ANALYSIS | |
| | | | |
| 58- DECK | STEEL | FAIR CONDITION | 5 |
| 59- SUPERSTRUCTURE | STEEL | FAIR CONDITION | 5 |
| 60- SUBSTRUCTURE | STEEL | SATISFACTORY COND. | 6 |
| 61- CHANNEL & CHANNEL PROTECTION | N/A | N/A | N |
| 62- CULVERT | | N/A | N |
| 64- OPERATING RATING : | | | 800 |
| 66- INVENTORY RATING : | | PEDESTRIAN | 800 |
| PEDESTRIAN HAS LIGHT CORROSION | | | |
| | | | |
| 68- DECK GEOMETRY : | | ε | ••••• |
| N/A | | | |
| 69- UNDERCLEARANCE, VERTICAL & HORIZONT? | т. : | | |
| BASICALLY INTOLERABLE REQUIRIN | IG HIGH PRIORITY OF CORRE | SCTIVE ACTION. | |
| 70- BRIDGE POSTING : | | N/A | fires |
| 71- WATERWAY ADEQUACY : | | | м |
| N/A | | | |
| 72- APPROACH ROADWAY ALIGMENT : | | | N |
| N/A | | | |
| | ======PROPOSED IM | PROVEMENT====== | |
| 75- TYPE OF WORK : | | REHABILITATION NEEDED | 352 |
| 76- LENGTH OF STRUCTURE IMPROVEMENT : | | .14 MTS.(171.01 FT.) | 000171 |

| PUERTO RICO HIGHWAY AUTHORITY | PAGE 3 OF 3 |
|---|-------------|
| BIRDGE STUDIES AND EVALUATION OFFICE | |
| | |
| FEDERAL SYSTEM BRIDGE NO. : 01137 - ROAD NO. : PR 26 - KM, NO. : 004.070 | |
| | |
| =====INSPECTIONS==================================== | |
| 89- RESERVED | |
| 90- INSPECTION DATE : AUGUST 16,1996 91- DESIGNATED INSPECTION FRECUENCY : | 0896 |
| 91- DESIGNATED INSPECTION FRECHENCY : | 24 N N N |
| 93- CRITICAL FEAT. INSPECTION | |
| So GALLEGE LAND INDERCE SALS. | |
| ======IMPROVEMENT COST======== | |
| 94- BRIDGE IMPROVEMENT COST : | 000000 |
| 95- ROADWAY IMPROVEMENT COST : | 000000 |
| 96- TOTAL PROJECT COST : | 000016 |
| 97- YEAR OF IMPROVEMENT COST ESTIMATED : | 96 |
| | |
| ==CLASSIFICATION AND STRUCTURE DATA=== | |
| | |
| 98- BORDER BRIDGE : | |
| 99- BORDER BRIDGE STRUCTURE NUMBER : | |
| 100- DEFENSE HIGHWAY DESIGNATION : IS A DH | 1 |
| 101- PARALLEL STRUCTURE DESIGNATION : | N |
| 102- DIRECTION OF TRAFFIC : | 0 |
| 103- TEMPORARY STRUCTURE DESIGNATION : N/A | |
| 104- HIGHWAY SYSTEM OF THE INVENTORY RODTE : NHS | 1 |
| 105- RESERVED | |
| 106- YEAR RECONSTRUCTION : | 0000 |
| 107- DECK STRUCTURE TYPE : | 5 |
| 108- WEARING SURF./ PROTECT. SYSTEM : NONE | 000 |
| 109- AVERAGE DAILY TRUCK TRAFFIC : | 04 |
| 110- DESIGNATED NATIONAL NETWORK : | 1 |
| 11- PISK OK ABUT. PROTECTION (NAVIGATION) : N/A 112- NBIS BRIDGE LENGTH : | v |
| 113- SCOUR CRITICAL BRIDGE : | Y N |
| 114- FUTURE AVERAGE DAILY TRAFFIC : | 136100 |
| 115- YR, OF FUTURE A.D.T. : | 138100 |
| 116- MINIM. NAVIG. VERT. CLEARANCE : | 12 |
| 117- SUFFICIENCY RATING : | 51.07 |
| 126- FIELD INSPECTION DATE : | 081696 |
| 127- INSPECTION EVAL. DATE : | 081696 |
| 130- CRITICAL FRACTURE INSP. DATE : | |
| 131- EVALUATOR ENGINEER : | |
| | 12 |
| REMARKS: | 51 |
| · | X |
| · · · · · / · · | |
| REHABILITATION CONSISTS ON REPAIRING THE DEFICIENCIES DISCUSSED ON | |
| ITEM 67. | |
| | |

D.6 December 22, 1994

| and a | PUERTO RICO HIGHWAY AUTHORITY | PAGE 1 OF 3 |
|--|---|---------------------------------------|
| | HIGHWAY SYSTEM ADMINISTRATION OFFICE | DATE : 12/22/94 |
| 2 | BRIDGE REPORT | TIME : 18:46:21 |
| | | |
| FEDERAL SYSTEM | BRIDGE NO. : 01137 ~ ROAD NO. : PR 26 | - KM. NO. : 004.070 |
| | | |
| 20 B | ========IDENTIFICATION======== | |
| 1- STATE : | Commonwealth of | Puerto Rico 721 |
| 2- STATE HIGHWAY DEPARTMENT : | | SAN JUAN 01 |
| 3- COUNTY (PARISH) CODE : | s | SAN JUAN 127 |
| 4- PLACE CODE : | SAN JUAN URBAN | 76770 |
| 5- INVENTORY ROUTE : | | 2-1-1-00003-0 211000030 |
| 6- FEATURES INTERSECTED : | PEDESTRIAN WA | ALKWAY PEDESTRIAN WALKWAY |
| 7- FACILITY CARRIED BY STRUCTURE : | PR 26 | PR 26 |
| 8- STRUCTURE NUMBER : | | OF 1) 011371 |
| 9- LOCATION : | BALDORIOTY DE | CASTRO AVE. BALDORIOTY DE CASTRO AVE. |
| 10- INV. ROUTE, MIN. CLEAR. (0.01m) : . | | 5'-9") 1609 |
| 11- MILEPOINT : | | 4.07 004070 |
| | | |
| 17- LONGITUDE : | 66 DEG 03.3 | MIN 066033 |
| 19- BYPASS, DETOUR LENGTH (NEAREST MILE) | : STRUCTURE OVER | EWY. 00 |
| | | |
| 20 10011 | CLASSIFICATION | |
| 20- TOLL : | | 3 |
| St. Collegional Collegion, 2006;2014;2012;314;2012;314;2012;314;2012;314;314;314;314;314;314;314;314;314;314 | | 01 |
| 22- OWNER : | | 01 |
| 20- FUNCTIONAL CLASS. OF INVENTORY ROOT | S ORBAN INTERSTATE | 11 |
| | AGE AND SERVICE | |
| | â | |
| | ••••••••••••••••••••••••••••••••••••••• | 1968 1968 |
| | 00 ON ; 05 UNDER | 0005 |
| CLUBS DECOMPOSITION CONTRACTOR CONTRACTOR CONTRACTOR OF THE CONTRACTOR CONTRA | | 109500 |
| 30- YEAR OF A.D.T. : | | 1993 93 |
| | ====================================== | |
| 31- DESING LOAD : | | PEDESTRIAN 7 |
| 32- APPROACH ROADWAY WIDTH : | | 65ft) 081 |
| 33- BRIDGE MEDIAN : | | DNE O |
| 34- SKEW ANGLE : | | NO 00 |
| 35- STRUCTURE FLARED : | | NO 0 |
| 36- TRAFFIC SAFETY FEATURES : | | N-N-N-N NNNN |
| 37- HISTORICAL SIGNIFICANCE : | | |
| 38- NAVIGATION CONTROL : | | N/A N |
| 39- NAVIGATION VERTICAL CLEARANCE : | | NO 000 |
| 40- NAVIGATION HORIZONTAL CLEARANCE : | | NO 0000 |
| 41- STRUCT. OPEN, POSTED OR CLOSED TO TH | AFF. : | OPEN A |
| 42- TYPE OF SERVICE : | PEDESTRIAN OVER HWY. | 31 |
| 43- STRUCTURE TYPE, MAIN : | STEEL TRUSS DECK | 309 |
| 44- STRUCTURE TYPE APPR. : | NONE | 000 |
| 45- NUMBER OF SPAN IN MAIN UNIT : | | 002 002 |
| 46- NUMBER OF APPROACH SPAN : | | NONE 0000 |
| 47- INV. ROUTE, TOTAL HORIZ. CLEARANCE : | ⊥=23.59m(77.39ft) R=23. | бm(77.4ft) 774 |
| 48- LENGTH OF MAXIMUM SPAN : | | 0077 |
| 49- STRUCTURE LENGTH : | 52.14m(171.01ft) | 000171 |
| 50- CURB OR SIDEWALK WIDTHS : | NONE | 000000 |
| | 7 | |
| | | |

| | FUERTO RICO HIGHWA | Y AUTHORITY | PAGE 2 OF 3 |
|--|--|--|-------------|
| * | HIGHWAY SYSTEM ADMINI | STRATION OFFICE | |
| · FEDERAL SYSTEM | BRIDGE NO. : 01137 - ROAD | NO. : PR 26 - KM. NO. : 004.0 | 370 |
| 2 A L | wame======STRUCTURE | 0300 | |
| 1- BRIDGE ROADWAY WIDTH, CURE TO C | | | 0054 |
| 2- DECK WIDTH, OUT TO OUT : | | | 0066 |
| 3- MI. VERT. CLEAR. OVER BRIDGE RO | | | 9999 |
| 4- MINIMUM VERTICAL UNDERCLEARANCE | | | H1609 |
| 5- MINIMUM LATERAL UDERCLEARANCE (| | | H039 |
| 5- MINIMUM LATERAL UNDERCLEARANCE | ON LEFT : | 2.22m(7.28ft) | 073 |
| | | | |
| | MATERIAL | CONDITION ANALYSIS | |
| | MATERIAL | CONDITION ANALISIS | |
| , 3- DECK | STEEL | FAIR CONDITION | 5 |
| 9- SUPERSTRUCTURE | | FAIR CONDITION | 5 |
| - SUBSTRUCTURE | | SATISFACTORY COND. | 6 |
| I- CHANNEL & CHANNEL PROTECTION . | | N/A | N |
| 2- CULVERT | | N/A | N |
| - OPERATING RATING : | | PEDESTRIAN | 800 |
| - INVENTORY RATING : | | PEDESTRIAN | 800 |
| SEVERE CORROSION & LIGHT FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. | NGS & LIGHT SCALINGS AT COLUMNS | | |
| FINE CRACKS, SMALL SPALLI | | | |
| FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. | NGS & LIGHT SCALINGS AT COLUMN | | ····· A |
| FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. | NGS & LIGHT SCALINGS AT COLUMN | 5 FOOTINGS.PONDING AT | <i>)</i> |
| FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. 8- DECK GEOMETRY : N/A | NGS & LIGHT SCALINGS AT COLUMN | 5 FOOTINGS.PONDING AT | |
| FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. 8- DECK GEOMETRY : N/A 9- UNDERCLEARANCE, VERTICAL & HOR | NGS & LIGHT SCALINGS AT COLUMN | S FOOTINGS. PONDING AT | |
| FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. 8- DECK GEOMETRY : N/A 9- UNDERCLEARANCE, VERTICAL & HOR EASICALLY INTOLERABLE RE | NGS & LIGHT SCALINGS AT COLUMNS , NIZONTAL : | 5 FOOTINGS.PONDING AT | 3 |
| FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. 8- DECK GEOMETRY : N/A 9- UNDERCLEARANCE, VERTICAL & HOR BASICALLY INTOLERABLE RE 0- BRIDGE POSTING : | NGS & LIGHT SCALINGS AT COLUMN | 5 FOOTINGS.PONDING AT | 3 |
| PINE CRACKS, SMALL SPALLI STAIRS & REST AREA. 8- DECK GEOMETRY : N/A 9- UNDERCLEARANCE, VERTICAL & HOR EASICALLY INTOLERABLE RE 0- BRIDGE POSTING : | NGS & LIGHT SCALINGS AT COLUMN | S FOOTINGS. PONDING AT | s |
| FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. 8- DECK GEOMETRY : N/A 9- UNDERCLEARANCE, VERTICAL & HOR EASICALLY INTOLERABLE RE 0- BRIDGE POSTING : 1- WATERWAY ADEQUACY : N/A | NGS & LIGHT SCALINGS AT COLUMNS | S FOOTINGS. PONDING AT | s |
| FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. 8- DECK GEOMETRY : N/A 9- UNDERCLEARANCE, VERTICAL & HOR BASICALLY INTOLERABLE RE 0- BRIDGE POSTING : 1- WATERWAY ADEQUACY : N/A | NGS & LIGHT SCALINGS AT COLUMNS | S FOOTINGS. FONDING AT | s |
| FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. 8- DECK GEOMETRY : N/A 9- UNDERCLEARANCE, VERTICAL & HOR EASICALLY INTOLERABLE RE 0- BRIDGE POSTING : 1- WATERWAY ADEQUACY : N/A 2- APPROACH ROADWAY ALIGMENT : | NGS & LIGHT SCALINGS AT COLUMNS | S FOOTINGS. PONDING AT | 3 |
| FINE CRACKS, SMALL SPALLI STAIRS & REST AREA. 8- DECK GEOMETRY : N/A 9- UNDERCLEARANCE, VERTICAL & HOR BASICALLY INTOLERABLE RE 70- BRIDGE POSTING : N/A 71- WATERWAY ADEQUACY : N/A 72- APPROACH ROADWAY ALIGMENT : | NGS & LIGHT SCALINGS AT COLUMNS | S FOOTINGS. FONDING AT CTIVE ACTION. N/A FOVEMENT | 3 N |

| | PUERTO RICO HIGHWAY AUTHORITY | |
|--------------------|--|-------------|
| 4 3 | HIGHWAY SYSTEM ADMINISTRATION OFFICE | PAGE 3 OF 3 |
| | - EGHAT SISTER ADMINISTRATION OFFICE | |
| . 1 | FEDERAL SYSTEM BRIDGE NO. : 01137 - ROAD NO. : PR 26 - KM. NO. : 004.070 | |
| 1 | BRIDGE NO. : 01137 - ROAD NO. : PR 26 - KM. NO. : 004.070 | |
| 6 | INSPECTIONS | |
| 89- | RESERVED | |
| 90- | INSPECTION DATE : DECEMBER 1994 | |
| 91- | DESIGNATED INSPECTION FRECUENCY : | 1294 |
| 92- | CRITICAL FEATURE INSPECTION : | 24 |
| 93- | CRITICAL FEAT. INSPECT. DATE: N/A | N N N |
| | | |
| - 2019 | =====IMPROVEMENT COST============ | |
| 94- | BRIDGE IMPROVEMENT COST : N/A | |
| 95- | ROADWAY IMPROVEMENT COST : | 000000 |
| 96'- | TOTAL PROJECT COST : | 000000 |
| 97- | YEAR OF IMPROVEMENT COST ESTIMATED : | 000013 |
| | 1994 | 94 |
| | ==CLASSIFICATION AND STRUCTURE DATA== | |
| | STATES AND STRUCTURE DATASE | |
| 98- | BORDER BRIDGE : | |
| 99- | BORDER BRIDGE STRUCTURE NUMBER : | |
| 100- | DEFENSE HIGHWAY DESIGNATION : IS A DH | |
| 101- | PARALLEL STRUCTURE DESIGNATION : | 1 |
| 102- | DIRECTION OF TRAFFIC : NOT CARRIED TRAFFIC | N |
| 103- | TEMPORARY STRUCTURE DESIGNATION : | 0 |
| 104- | HIGHWAY SYSTEM OF THE INVENTORY ROUTE : | |
| 105- | RESERVED | 1 |
| 106- | YEAR RECONSTRUCTION : | |
| 107- | DECK STRUCTURE TYPE : | 0000 |
| 108- | WEARING SURF./ PROTECT. SYSTEM : NONE | 5 |
| 109- | AVERAGE DAILY TRUCK TRAFFIC : | 000 |
| 110- | DESIGNATED NATIONAL NETWORK : PART OF NNT | 04 |
| 111- | PIER OR ABUT. PROTECTION (NAVIGATION) : N/A | 1 |
| 112- | NBIS BRIDGE LENGTH : | |
| 113- | SCOUR CRITICAL BRIDGE : N/A | Y |
| 114- | FUTURE AVERAGE DAILY TRAFFIC : 136,100 | N |
| 115- | YR. OF FUTURE A.D.T. : | 136100 |
| 116- | MINIM. NAVIG. VERT. CLEARANCE : | 12 |
| 117- | SUFFICIENCY RATING : | |
| 126- | FIELD INSPECTION DATE : | |
| 127- | INSPECTION EVAL. DATE : | 121294 |
| 130- | CRITICAL FRACTURE INSP. DATE : | 121294 |
| 131- | EVALUATOR ENGINEER . | |
| | urks: ACF. | |
| REMA | ARKS: | |
| | | |
| | | |
| | REHABILITATION CONSISTS ON REPAIRING THE DEFICIENCIES DISCUSSED ON | |
| 040 | ITEM 67. | |
| ÷ | | |

D.7 February 24, 1993

| fuerto Bridge s' | RICO HIGHNAY AUTHORITY TUDIES AND EVALUATION OFFICE BRIDBE REPORT | | . DF 7 1 02/24/93 1 12:16:09 |
|---|---|-------------------|-------------------------------------|
| | | | |
| FEDERAL SYSTEM BRIDGE MD. + (| 115/~ RUAD NU, 3 PR 26 | -KN, MO, : 004070 | |
| | | | |
| · 1- STATE : | Commonwealth of Fuerto Ricc | | • 721 |
| 2- STATE HIGHWAY DEPARTMENT : | SAN JUAN | | 01 |
| - 3- COLINTY (PARISH) CODE : | SAN JUAN | | 127 |
| A-PLACE CONCERNING | san juan urban | | 76770 |
| A- PLACE CODI:: 5- INVENTORY ROUTE : 5- FEATURES INTERSECTED : | PEDESTRIAN WALLAY PEDESTRIAN WALLAY PR 26 1137 (1 OF 1) BALDORIGTY DE CASTRO AVE. | | 211:00030 |
| 5- FEATURES INTERSECTED : | PEDESTRIAN WALVAY | | FEDESTRIAN WALKERY |
| 7- FACILITY CARRIED BY STRUCTURE : | PR 24 | | PR 26 |
| S- STRUCTURE NUMBER ; | 1137 (1 05 1) | | 011571 |
| 9- LOCATION : | BALDURIOTY DE CASTED AVE. | | 011571 BALDURIUTY DE CASTRO AVC. |
| INT ONE HUDIE, MIN, VERI, ULEAK, 10.014) (| ⊃.ll£(lo'~7°) | | 10/12 |
| 11- WILEPOINT : | 4.07 | | (0.026)7() |
| 16-LATITUDE : | 18 DEG 27.3 MIN | | 182/3 |
| 17- LONGITUDE : 19- SYPASS, DETOUR LENGTH (NEAREST MILE) : | 66 DEG 03.3 MIN | | 066033 |
| | | | 00 |
| 20- TOLL : 21- MAINTENANCE REEPONSABILITY : | UN FREE ROAD | | 5 |
| 22- DANER : | D.T.P.W. | | 01 |
| Zo- FUNCTIONAL CLASS. OF INVENTORY ROUTE ; | D.T.P.W. | | 01 |
| 27- YEAR BUILT : | 1968 INTERGIATE | | 11 |
| | 00 DN ; 05 UNDER | | 1968 |
| | 95,400 | | 0005 095420 |
| JO- YEAR OF A. D. T. : | 1990 | | 070479 90 |
| 31- DESIGN LOAD : | PEDESTRIAN | | 70 7 |
| 32- APPROACH ROADWAY WIDTH : | 24.59m(80.65ft) | | 081 |
| | NONE | | 0 100 |
| 34- SKEW : | ND | | e Qu |
| 35- STRUCTURE FLARED : | 140 | | |
| 36- TRAFFIE SAFETY FEARDARES > | N-N-N-N | | (MINN) |
| 37- HISTORICAL SIGNIFICANCE : | 5 | | č |
| 39- MAVIGATION CONTROL ; | N/A | | - N |
| 39- NAVIGATION VERTICAL OLEARANCE : | NO | | 000 |
| 40- NAVIGATION FORIZONTAL CLEARENCE ; | | | 000 |
| 41- STRUCT. DPEN. FOSTED OR CLOSED 10 TRAFF. : | | | A |
| 12~ TYPE OF SERVICE : | | | |
| 43- STRUCTURE TYPE, MAIN ; 49- STRUCTURE TYPE ARPR, ; | STEEL TRUSS DECK | | 309 |
| 46- STAUCTURE TYPE APPR. 1 | | | OO_{I} |
| | 002 | | \$12 |
| 46- NUMBER OF APPROACH SPAN : | NOVE | | 9006 |
| 47- INV. ROUTE, TOTAL MORIZ. CLEARANCE : | | i. | 7/4 |
| 46- LENGTH OF MAXIMUM SPAN ; | 23.6m(77.4ft) | | 0077 |
| 49- STRUCTURE LENGTH : | 52.14m(171.014t) | | 000171 |
| 50- CURB OF SIDEWALK WIDTHS : 51- BRIDGE RDADWAY WIDTH, CURB-TO-CURB ; | 10月1日 1 月月1日 - 11 月日 | | 00000 |
| 31- BEINGE KOMUNAY WIDIR, LUKE-ID-LUKE ; 52- DECK WIDIR, SUT-TO-CUT ; | 1.64m(3.37ft) 2.00m(6.56ft) | | 0054 |
| 53- MIN. VERT. CLEAR. OVER BRIDGE ROADWAY : | 2.00016.06452 UMA IMITED | | 0066 |
| 54- MININUM VERTICAL UNDERCLEARANCE : | 5.ilm(16'-9") | | 9999 41609 |
| 55- MININUM LATERAL UNDERCLEARANCE ON RIGHT : | 1.110(10 - 7) 1.19n(3.77t) | | 41604 H034 |
| 56- NINIMUM LATERAL UNDERCLEARANCE ON LEFT : | 2.22m(7.23(t) | | 073 |
| an concernent antidicat contractativestation and a | and a second | | 807.W |

| | to rico highway anthority | PAUE 2 UF 3 | |
|---|---|--------------------|------------|
| . BAIDGE | STUDIES AND EVALUATION OFFICE BRIDGE REPORT | | |
| era I | LTANUL NATUR | | |
| | | | |
| FEDERAL SYSTEM BRIDGE NG. : | 01137- FD4D NO. : FR 23 | -KM. NG. : 004070 | |
| | | | |
| | MATERIAL | CONDITION ANALYSIS | |
| * (12) | | | 4 |
| 58- DECK | STEEL | SATISFAUTORY COND. | 5 |
| 59- SUPERSTRUCTURE | STEEL | SHIISFACTORY COND. | 5 |
| 60 - SUBSTRUCTURE | STEEL | SATISHAUTORY CNMO. | Æ |
| 61- CHANNEL & CANNAEL PROTECTION 62- CULVERT | N/A N/A | N/A M∕ A | N |
| 64- OPERATING RATING | NZH PEDESTRIAN | PEDEN FX:TOM | 201 |
| 66- INVENTORY RATENO | PEDESTRIAN | VEDES INTAR | 600 600 |
| | The bits in the 11 to 211 th | COLVERNMENT | 0.00 |
| | | | |
| 67- STRUCTURAL EVALUATION : | THIS BRIDGE WAS REMABILITATED | | ģ |
| DEFLECTION IN FIRST LEVEL. ON WALK | DITION IS SATISFACTORY. COUTH NAV DITION OF A DIVISION OF A DIVISI | | |
| TURE ARE PAINTED AND IN ACEPTABLE | | a orașe- | |
| | C0404144045 | | |
| 8 | | | |
| | | | |
| | | | |
| 43- DECK GECHETRY ₂ | | | N |
| (MD) Charles Charles in the | | | |
| N/A | | | |
| | | | |
| 49- UNDERCLEARANCE, VERTICAL & HORIZONTAL : | | | .5 |
| BASICALLY INTOLERABLE REQUIRING HI | SM PROPRIES OF CORRECTOR MISSIN. | | |
| STORESTARY ALL PERSONNE COMPACTING OF | | | |
| 70- BRIDGE PRETING : | | | М |
| 24.92 | | | |
| N/A | | | |
| 71- WITERNAY ADEDUACY : | | | M |
| 200002 School and control constrol operation and control operation of the | | | |
| N/A | | | |
| 72- APPROACH ROADWAY ALIGNMENT I | | | |
| 727 METROHUN NUHUMAT METUNASAS (| | | H |
| 加州 | | | |
| | | | |
| 75- 1796 F 1939 : | NO IMPROVEMENT MEEDED | | 000 |
| 76- LENSTH OF STRUCTURE IMPROVEMENT : | W/A | | 00(1206 |
| 87- REDERVEL) 90- INSPECTION DATE : | PERGUARY-24-1993 | | 0797 |
| 91- SEGIONATED INSPECTION FRECHENCY : | EVERY-24-MONTHS | | 0293 24 |
| 71- SESTOR OF INSTICTION FRESHERS, 72- CRIT/CAL FEATURE INSPECTION : | NOT NEEDED | | in N N |
| 73- CRITICAL FEATURE INSPECTION DATE 1 | N/A | | te te de |
| | | | |

| | PIENTO RICO HIGHNAY AUTHORITY ERIDGE STUDIES AND EVALUATION UFFICE SRICGE (ZEPOST | TACE 2 OF | 2 |
|---|---|----------------|----------|
| | RIDKE MU. : 01137- RDAD WU. : FR 26 | | |
| FELENEL DIG (E) D | 1905 MG. (9136/F ADHD MG. (FM 28 | THE RULE CONVE | |
| | | | |
| 94- BRIDGE IMPROVEMENT COST : | | | 000000 |
| 95- KOADWAY IMPROVEMENT (COST : | (Allo via | | 000000 |
| 96- TOTAL PROJECT COST : | | | 00000 |
| , 97- YEAR OF IMPROVEMENT CUST EST | IMATED : | | QŬ |
| 98- BOADER BAIDGE : " | | | .at 11 |
| 99~ BORDER BRIDGE STRUCTURE AUMB | ER : | | |
| 100- DEFENSE HIGHWAY DESIGNATION 101- PARALLEL STRUCTURE DESIGNAT 102- DIRECTION OF TRAFFIC) | I IS A DH | | 1 |
| 101- PARALLEL STRUCTURE DESIGENAT | 20N († | | M |
| 102H DIRECTION OF TRAVEIC : | NOT CANFILED TRAFFIC ION + N/4 | | 0 |
| 105- TEKFORARY STRUCTURE DESIGNAT | 10N t N/6 | | |
| 104- HIGHWAY SYSTEM OF THE INVENTO | DRY ROOTE I INTERGIATE | | 1 |
| 105- RESERVED | | | |
| 106- YEAR RECONSTRUCTED : | REHABILITATE IN 1972 | | 1992 |
| 107- DECK STRUCTURE TYPE : 108- WEARING SURF./ PROTECT. SYST | STEEL PLATE | | 5 |
| 108- WEARING SURF./ PROTECT. SYST | En i Wilthe | | 006 |
| 109- AVERAGE DAILY TRUCK TRAFFIC 110- DESIGNATED NATIONAL NETWORK | t <u>6%</u> | |)4 |
| 110- DESIGNATED NATIONAL NETWORK | PART OF MM | | Y |
| 111- PIER OR ABUT, PROTECTION (NA | | | • |
| 112- MBIS BRIDGE LEMETH : | AGB | | 7 |
| 113- SCOUR CRITICAL BHIDGES : | N/A | | h |
| 114- FUTURE AVERAGE DAILY TRAFFIC | 1 (43,990) | | 143/50 |
| 115- YR, OF FUTURE A.D.T. 1 115- MININ, NAVIG, VERT, CLEARANCI | 2010 5 i N/A | | 10 |
| | E I N/A | | |
| 117- SUFFICIENCY RATING : | | | |
| 126- FIELD INSPECTION DATE : | 021293 | | 021273 |
| 127- INSPECTION EVAL. DATE : | 022493 | | 022493 |
| 130- CRITICAL FRACTURE IMSP. DATE | ž. | | NU |
| 131- EVALUATOR ENGINEER : | 3 | | J. J. |
| | | | 0 |
| REMARKS | | | |

THIS BRIDGE WAS REMARKLITATED LAST YEAR(1992) AND NU THEROVEMENT IS NEEDED.

| 11 . | 15 | | . н | NWEALTH OF PUEI IGHWAY AUTHORI DIES AND EVALUA | TY | | | 1 |
|--------|---|-------|--------------------|--|-------------------------|----------|--------------------------------------|----------------------------|
| | | | APPR | AISAL OF IT | EM 68 | 12 | | |
| BRIDGE | = NO. <u>/</u> / | 137 | ROA | ad no. <u>- 77.</u> | -26 | | KM. NO | 4.07 |
| 11 | | | | | | | | |
| Year | ADT | Şec. | τw | T W Adequate or Inadequate | T W Inadequate By | TW + SH | TW + SH Adequate or Inadequate | TW + SH Inadequat By |
| 1990 | -95,400 | \ge | Actual = | \succ | \ge | | \geq | \times |
| | | | For ADT = | | | | | |
| | | | N/A. | Pe | DESTR | 2 A 1812 | | |
| 2010 | 143,990 | | Reqd. For ADT = | | | 1 | | |
| | , | | Rec. PRHA = | | | | | |

| BRIDGE STUDIES AND EVALUATION OFFICE | - |
|--|----------------|
| PUERTO RICO HIGHWAY AUTHORITY | |
| | |
| • Page 1 | of 5 |
| | |
| 1 1 3 7 0 0 2 6 0 0 4 0 Bridge No. Road No. Km.No. | 7 |
| | |
| | |
| BRIDGE INVENTORY | |
| | |
| | |
| IDENTIFICATION | |
| Code Position | |
| 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 | 1 |
| 1. State Code Commonwealth of Puerto Rico 7 2 | Π |
| 2. State Highway Department District Jan Jugn 0 | \overline{D} |
| 3. County (Parish) Code San Juan 1/2 | 7 |
| 4. Place CodeUrban. 7677 | 0 |
| 5. Inventory Route 2-1-1-00003-0 271100003 | 0 |
| 6. Features Intersected Pedestiion Walkway | |
| Pedestrian Walkway | \Box |
| 7. Facility Carried by Structure $\mathcal{P}\mathcal{R} - \mathcal{C}\mathcal{G}$ | |
| PR 26 | \Box |
| 8. Structure Number $1/37/1061$, 000000000011137 | 1 |
| 9. Location Baldonioty de Castro avenue | |
| BALDORIOTY DE CASTRO AVE | \Box |
| 10. Inventory Route, Minimum Vertical Clearance (0.01 m) 5. 11m(1676) 160 | 9 |
| 11. Milepoint (004.07 | 0 |
| 16. Latitude 18 Degrees 27.3 Minutes 1827 | 3 |
| 17. Longitude 66 Degrees Minutes 066 | 3 |
| 19. By Pass, Detour Length (Nearest mile) Structure and Kighway | 0 |
| i C | |
| | |
| CLASSIFICATION | |
| 20. Toll Liel Liel | 3 |
| 21. Maintenance Responsibility $\mathcal{D}, \mathcal{L}, \mathcal{P}, \mathcal{W}$. | 1 |
| 22. Owner State Highway Dept. [0 | 4 |
| 26. Functional Classification of Inventory Route Urban Interstate | \Box |
| | |

| BRI | DGE STUDIES AND EVALUATION (| OFFICE | Page 2 of 5 |
|-----|---|--|-------------|
| | 6 B | | 6 5 4 3 2 1 |
| | 2 | | 6 5 4 3 2 1 |
| AGI | E AND SERVICE | | |
| 27 | Year Built | 1968 | 1968 |
| 28. | Lanes on the Structure | | 0005 |
| 29. | Average Daily Traffic | | 033560 |
| 30. | Year of Average Daily Traffic | 1989 | 89 |
| | n 19 | | |
| n n | | | |
| STR | UCTURE DATA | | |
| 31. | Design Load | Pedestrian | - 7 |
| 32. | Approach Roadway Width | | 081 |
| 33. | Bridge Median No | ne Open Closed Closed NM | 0 |
| 34. | Skew | | 00 |
| 35. | Structure Flared | Yes U No | D |
| 36. | Traffic Safety Features | | MNNN |
| 37. | Historical Significance | | 5 |
| 38. | Navigation Control | Yes 🗌 No 🖂 NA | N |
| 39. | Navigation Vertical Clearance | Yes 🚺 No | 000 |
| 40. | Navigation Horizontal Clearance | Yes 🗁 No | 0000 |
| 41. | Structure, Open, Posted, or Closed to T | raffic <u>alcor</u> | A |
| 42. | Type of Service P2 | rafficopen | 31 |
| 43. | Structure Type, Main | eel Truss Dack d | 309 |
| 44. | Structure Type, Approach Spans | | |
| 45. | Number of Spans in Main Unit | <u></u> | 002 |
| 46. | Number of Approach Spans | Interna | 2000 |
| 47. | Inventory Route, Total Horizontal Clea | trance $L = 23.59 \text{ in} (77.39)$ R = $23.60 \text{ in} (77.40)$ | 774 |
| 48. | Length of Maximum Span 2 | 3.60m. (77.40) | 0077 |
| 49. | Structure Length5 | 2.74m.(191.01) | 000171 |
| 50. | Curb or Sidewalk Widths | $L= \underline{Momp} \qquad R= \underline{Momp}$ | 000000 |
| 51. | Bridge Roadway Width, Curb-to-Curb | 1.64m (5.37) | 0054 |
| 52. | Deck Width, Out-to-Out | 2.00 * (6.56) | 0066 |
| 53. | Minimum Vertical Clearance Over Brid | Ige Roadway Unlimited | 9999 |
| 54. | Minimum Vertical Underclearance | $\mathbf{H}_{\mathcal{I}_{1}}^{\mathcal{I}_{1}}(1_{0},1_{0}^{\mathcal{I}_{1}}) \mathbf{R}_{1}^{\mathcal{I}_{1}} \mathbf{R}_{1$ | H1609 |
| 55. | Minimum Lateral Underclearance on R | light 🔀 H 1.19 m (3.9011) 🗖 R 🔲 N | 11039 |
| 56. | Minimum Lateral Underclearance on La | eft 2.22m(7,2.8) | 073 |
| | | | |

| <i>1</i> | 5 <u>1</u> | \$. | - 11 (. | |
|----------------|---|---|--|--|
| BRI | DGE STUDIES AND EVALUATI | ION OFFICE | | Page 3 of 5 |
| 1002404-000 | Terrene and the second | | | 3 2 1 |
| CON | DITIONS RATINGS | | | |
| | | | | |
| 46 - 112 46 | | Material | Condition | |
| | | ~ 0 | | P |
| - 5 - marcel | Deck | <u></u> | Face Or Cin. | 5 |
| | Superstructure | Steel | Have average | S. |
| | Substructure | <u>Sleel a Curc.</u> | Cardenary | 6 |
| | Channel and Channel Protection | $-\frac{1}{2}$ | - Add - | |
| 100 | Culverts | <u> </u> | <u></u> | 6/ |
| | Operating Rating | Prodoj | a) to t t days | 500 |
| 66. | Inventory Rating | <u> </u> | ed elain | 800 |
| | 1 | | | |
| | | | | |
| APP | RAISAL RATING | 27.75 | | |
| 26 | | Deficiencies | | |
| | ····· | • 5 GVT | | . s. p. |
| 67. | Structural Evaluation | N | 202022 Kanddar Own | e T |
| · * . | | 0 to O all o all | <u>the Blifter Plating</u> | |
| | and Ondan, Co | | <u>and all Contractions as a contraction</u> | |
| | Darrage Call | 1412-19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | <u>Ulbert (Mittles and a</u> r | |
| | | 1 × | | |
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| | | | | 10 M |
| | | | | |
| | · | | | |
| | | | · · · · · · · · · · · · · · · · · · · | |
| | | × 1/ | N | |
| 68. | Deck Geometry | A// + | | [M] |
| (0) | ······································ | · · · · · · · · · · · · · · · · · · · | Nor and the burget to take | |
| 69. | Underclearances, Vertical and Ho | | in the second | and a second sec |
| 70 | | <u> Ardan (d. 19</u> | $\frac{1}{2} = \frac{1}{2} $ | F |
| -70. | Bridge Posting | k į | <u>,</u> | \mathbb{N} |
| 71 | | - | | |
| | Waterway Adequacy | | | $ \Delta $ |
| | Approach Roadway Alignment | | | F. 7 |
| 12. | Approach Roadway Alignment | ///_ | | \mathcal{N} |
| | ······ | /////////////////_//// | | |
| | | | | |

| BRIDGE STUDIES AND EVALUATION OF | | Page 4 of 5 7 6 5 4 3 2 1 |
|--|--|---|
| PROPOSED IMPROVEMENTS 75. Type of Work 76. Length of Structure Improvement | (060 Bassing 2000 52-14 Sol 271,0186) | 352 022777 |
| e tota a | 8.4 | |
| INSPECTIONS | | ð. |
| 89. (Reserved) | | |
| 90. Inspection Date | 1000 15, 1991 | 0697 |
| 91. Designated Inspection Frequency | All brandle | 24 |
| 92. Critical Feature Inspection | | 12.46 40 50 |
| A. Fracture Critical Details | | \mathcal{N} |
| B. Underwater Inspection | | \mathcal{N}^{\prime} . |
| C. Other Special Inspection | | he i |
| 93. Critical Feature Inspection Date | | |
| A. Fracture Critical Details | | |
| B. Underwater Inspection C. Other Special Inspection | <u>N / / / /</u> | · |
| C. Other Special Inspection | <u> </u> | |
| | | |
| | | |
| IMPROVEMENT COSTS | | |
| | | |
| | 24 - 1 Im | |
| 96. Total Project Cost | \$ 10,000 | 0/000 |
| 97. Year of Improvement Cost Estimated | 1991 | <u>[9]</u> |
| | e. | |
| CLASSIFICATION AND STRUCTURE DAT | Γ Α | |
| 98. Border Bridge | | |
| 99. Border Bridge Structure Number | | |
| 100. Defense Highway Designation | D H | . [7] |
| 101. Parallel Structure Designation | Bart Corelling and the | |
| 102. Direction of Traffic | O. UNDER A Street | · |
| 103. Temporary Structure Designation | Pittan | |
| 104. Highway System of the Inventory Route | | |
| 105. (Reserved) | | |
| | | |

| BRI | DGE STUDIES AND EVALUATION OFFICE | Page 5 of 5 6 5 4 3 2 1 |
|-----------|---|---|
| CLA | SSIFICATION AND STRUCTURE DATA (Cont.) | |
| 106. | Year Reconstructed 19ad ROCURAL Under the | <u> </u> |
| 107. | Deck Structure Type Steel Plate | 5 |
| 108. | Wearing Surface/Protective System | 300 |
| 109. | Average Daily Truck Traffic 4 9/, | 04 |
| 110. | Designated National Network PDNN | 1 |
| X X 2 | Pier or Abutment Protection (for Navigation) | |
| 112 | NBIS Bridge Length | (a) |
| 113. | Scour Critical Bridges N/A | < |
| | Future Average Daily Traffic / (07) - (0.0) (1) | 100000 |
| 115. | Year of Future Average Daily Traffic ^ ひナン | 10 |
| 116. | Minimum Navigation Vertical Clearance | ~ ~ ~ ~ |
| | Venical Lift Bridge | |
| | | |
| 196 Yr. (| super a | |
| Han | rehabilition of the birty and in t | 178 3 3 1 - Pt |
| | The Indexed and the Barr | |
| 7 | a la contra de l contra de la contra de la | |
| | | |
| | 2. | |
| | | |
| | | |

| BRIDGE NO | 1 | 6 DE - 1 (0 A) | j ^a ti⊒ang inana bata.2. ≪atasa |
|----------------------|--------------------|---|--|
| ROAD NO. | км/ | AT (MICK) | L OF ITEM SB |
| 50 10 | | | 50 |
| a v | | | |
| | | - | |
| | | | |
| | BRIDGE | STUDIES AND | |
| | EVALUA | TION OFFICE | |
| | | | |
| | | | |
| | | 3 | |
| YEAR ADT | Sec. TW | TW TW Adequate in a dequate TW + SI Inadequate By | TW+SH TW + SH Adequate Incide quate or Incidequate By |
| 1985 | Actual = | XX | |
| | For ADT = | | |
| | | | |
| | | | |
| 1995 | Regd. For ADT = | | |
| | Rec. PRHA E | | |
| | | | |
| 🗸 Adequate | * | · · · | |
| X Inadequ ate | | | |
| | | | |

| 2 | BRIDGE STUDIES AND EVALUATION OFFICE PUERTO RICO HIGHWAY AUTHORITY | |
|-----|--|--------------|
| | GENERAL EVALUATION | |
| | This heides is basis that the first of the f | |
| | This bridge is basically in Structural condition | 汉 |
| | adequate 3 poor 1 | |
| | loop 1 | |
| | The load carrying capacity is | <u> </u> |
| 1 | adequate 3 minimally adequate 2 inadequate 1 not required (don't print) 0 | |
| | | 1 |
| | The recommended modifications will make it | 11 |
| | adequate 2 minimally adequate 1 no required (don't print)0 | البينية ال |
| | 0 when previous is 2 | |
| a q | The bridge should be replaced. | ··· ··· |
| | | \Box |
| | Yes (print) 1 not required (don't print) 0 | |
| | It requires co () () S | |
| | routine inspection every 24 months (A) = 2 (B) = 24 | 12 Car 145 |
| | frequent inspection every (B) months to monitor | തെ |
| | abnormal and/or suspected deficiencies $(A) = 1$ $(B) = months$ | 80 |
| | frequent inspection every (B) months to determine | |
| | the cause of and remedies for existing defects $(A) = 0$ $(B) = months$ | |
| | | |
| | It requires | |
| | routine maintenance | |
| | minor repairs and routine maintenance [2] urgent repairs to prevent further costly deterioration and/or the development of | |
| | a dangerous condition and rountine maintenance | |
| | emergency repairs to eliminate danger to the public and routine maintenance | |
| | | |
| | The deck geometry is | |
| | For present ADT, the travelled way is | |
| | For future (2010) ADT, the travelled way is Deck Present Future PRHA Present Future | Ire PRHA |
| | For PRHA (2010) recommendations, the travelled way is | |
| | Por present ADT, the shoulders are | 1.11 |
| | The final (2010) fits I, the shoulders ale | |
| | For PRHA (2010) recommendations, the shoulders are | |
| | satisfactory 3 unsatisfactory 2 cannot be evaluated because of lack of information 1 not required (don't print) 1 | |
| | | |
| | The (A) approach alignment is (B) | |
| | A = vertical 1 horizontal 0 horizontal and vertical 2 | era era |
| | B = satifactory 3 minimally tolerable 2 poor and represents a danger to the public 1 | AB |
| | not required (don't print) 0 | |
| | | |
| | Load Post for inventory rating shown in Item 64 | 0 |
| | Yes 1 No (don't print) 0 | |
| | Post for vertical underclearance shown in Items 54 and 69 | |
| 2 | Yes 1 No (don't print) 0 | 6 |
| | | |
|] | FOR "REMARKS" SEE BRIDGE FILE. | |
| | | |
| | PERSONNEL Date | |
| | Structural Inspection 1. 1997 August 1997 1997 1997 1997 1997 1997 1997 199 | |
| | Review of Field Data | |
| | Transfers of Data | |
| | Condition Analysis | |
| - | Appresisal <u>1919</u> | |
| | | |

D.9 June 23, 1989

| | a. | BRIDGE | STUDIES AND EV | ALUATION OF | FICE | Page 1 of 5 |
|------------|------------|--|-----------------------------|----------------|--------------------|---------------------------------------|
| с я в | | PUERTO RICO HIGHWAY IBM—370 AND IBM MT/S ELECTRONIC DATA STO | C | | 1137 Bridge No. | COHO Road No. |
| | : 8 | | BRIDGE INVER | TORY | | Km. No. <u>4</u> .07 |
| IDE | NTIFICA | rion | | | Co | de Positions |
| | | | 2524232221201 | 918171615141 | | |
| 1. | State . | | · · · / · · · · · · · · · · | Commonwealth | of Puerto Rico | 10721 |
| 2. | Highway | District | San . | nan | | · · · · · · · · · · · · · · · · · · · |
| 3. | | lity | Gan | quan | | 1063 |
| 4. | City/Tow | /n | San C | frian no. | · »· · · · · · · · | 180063 |
| 5. | Inventory | Route | 2. 4. | 1111111 | 221 | 1000030 |
| 6. | Features | Intersected | edestrian | alalia | <u> </u> | · · · · · · · · · · · · · · · · · · · |
| 6 | | 3 | PEDESTR | I A M W | GLKWAY | |
| 7. | Facility C | Carried by Structure ⁵⁶ | PR | * 76 | | |
| 8. | Structure | No | 12 | 5 1000 | the Arie | 1 0 1 1 3 7-1 w 11 P |
| 9. | Location | 10 | Daraung | . all Cas | and I than | |
| | | | a a ka a sa ka ƙi | | | 1005111 |
| 10. | Inventory | y Route, Minimum Vertical | Clearance (0.01 m) | | 2 1 1 1 A 2 | |
| | | er Point (0.01 km) | | | 25 | 1ª00407 |
| 12. | Road Sec | ction Number (DOD) | ••••(ДЦ••• | NSTE | De | PAC 77 |
| 13. | Bridge D | escription | ner | N. 9. 9. | | |
| 14. | Defense | Milepoint (0.01 ml) | | | 1.62 | |
| 15. | Defense | Section Length (miles) (0.1 r | nile) | | | 33 TOTAL OF CITCOL |
| | | | | | | 38066033 |
| | | le: 6.6. | / / | Minutes. D | vina . | 44 [4] |
| 0.00000000 | Physical | Vulnerability Detour Length (Nearest mile | A Think | sture ou | is bushie | чу 45 00 |
| 19. | | | | Joll 7 | rie | 47 [3] |
| | | n | | 12:J. | $p.\omega$ | 48 1 |
| | | n | | Highway Depart | ment | |
| | | 0, ⁵⁰ | | | <i>「</i> の | |
| - | 1.7.1.1 | | | | | 5. |
| CLA | ASSIFICA | TION |) | . / | | |
| | Fed. Aid | System | mterstate ,. | Woan | | '•াস |
| 60 8445 | | trative | Tale | | | ¹² |
| | Function | | Interstate | .F. Urban | | |
| 25 | | | | | | |

| | BRIDGE STUDIES AND EVALUATION OFFICE |
|-----|--|
| CTD | Page 2 of 5 |
| 210 | UCTURE DATA 987654321 |
| 27. | 1968 1968 18 1968 |
| 28 | Under |
| 29. | ADT - Inventory Rouse |
| 30. | Year |
| 31. | Design Load Pedestream |
| 32. | Approach Roadway width including shoulders (0.01 m) 24.59% |
| 33. | Median |
| 34. | Skew |
| 35. | Structure Flared |
| 36. | Traffic Safety Features |
| 37. | Historical Significance |
| 38. | Navigation Control |
| 39. | Navigation Vertical Clearance (0.1 m) |
| 40. | Navigation Horizontal Clearance (0.1 m) Yes V. No |
| 41 | Structure, Open or Closed to Traffic |
| 42. | Type Service Salatraig. Mus highway Ba 311 |
| 43. | Structure Type-Main |
| 44. | Structure Type-Approach Spans |
| 45. | No. of Spans-Main |
| 46. | No. of Spans-Approaches |
| 47. | Total Horizontal Clearance (0.01 m) L = 7.3. 5.9. R. = 2.3:60 M |
| 48. | Max. Span Length (0.01 m) |
| 49. | Structure Length (0.01 m) |
| 50. | Sidewalk Widths (0.01 m) Left Mane Right Nane |
| 51. | Bridge Roadway Width (curb-curb) (0.01 m) |
| 52. | |
| 53. | Vertice! Clearance over Bridge Roadway-Minimum (0.01 m) |
| 54. | Vertical Underclearance – Minimum (0.01 m) |
| 55. | Lateral Underclearance on Right (Outer) Sides - Minimum (0.01 m) La 1:2.7 R = 1:19 |
| 56. | Lateral Underclearance on Loft (Innet Sides - Minimum (0.01 m) La 7/2.2 R = .2.19 |
| 57. | Wearing Surface |
| 3 | |

| | BRIDGE STUDIES AND EV | ALUATION OFFICE |
|-----|--|---------------------------------------|
| C | ONDITION | Page 3 of 5 |
| | Material | Condition Analysis |
| 58 | 3. Deck | Fair condition 596 |
| 59 | . Superstructure | 11 11 606 |
| 60 |). Substructure | 11 11 11 61G |
| 61 | . Channel & Channel Protection | ······ |
| 62 | 2. Culvert & Retaining Walls | ····· · · · · · · · · · · · · · · · · |
| 63 | B. Estimated Remaining Life | 10 years 64/10 |
| 64 | l. Operatin'g Rating | Pedestruk 66 81010 |
| 65 | Approach Alignment | 69 M |
| 66 | 5. Inventory Rating | |
| | | |
| A | PPRAISAL | Deficiencies |
| 67 | 7. Structural Condition Ponching holes of M | a las ta pararia et an i abundural |
| | Severe corression at angles. M | aderate corrosion at some structural |
| 68 | 3. Deck Geometry P | I Martin and the matter in the |
| | · · · · · · · · · · · · · · · · · · · | |
| 69 | D. Underclearances-Vert. & Lateral (5:11m). (Ondel orderica | ion equal to present desirable 12 3 |
| 70 | 2. Safe Load Capacity | 13 |
| / 1 | | |
| 7 | I. Waterway Adequacy | 14 |
| 1 | . waterway Aucquacy | |
| 7 | 2. Approach Alignment | 15 |
| | | 0 . |
| | | |
| PI | ROPOSED IMPROVEMENTS | |
| | 3. Year Needed | 1989 |
| | Completed | |
| | Described | F). 1/1. 1. <u>1.</u> |
| 7. | 4. Type of Service | Padestrian 183 |
| | 5. Type of Work | abilitalian |
| | 6. Improvement Length (0.1 m) | A) A. A |
| 7 | 7. Design Loading | 286 |
| | | |

| | | BRIDGE STUDIES AND EVAL | UATION OFFICE | Page 4 of 5 |
|----------|------|--|--------------------------------|---------------------|
| 14) U | 78., | Roadway Width (0.01m) | GA MA | 987654327 290000 |
| 2 | 79. | Number of Lanes | YUYYU | "[O]O |
| 8 | 80. | ADT | 1209000 | |
| 0 | 81. | Year of Estimated AD7 | | 1913 |
| | 82. | Year of Proposed Adjacent Roadway Impro | | ····[0] |
| 14 | 83. | Prop. Adj. Rdwy Improvements-Type | <u> </u> | V (/ |
| 14 14 | COS | ST OF IMPROVEMENTS | | |
| 3 | 84 | Total (dollars)\$ | \$ 5,00 | • বিহাহার • |
| | | Estimated Design Time (months) | ····· | |
| | SUN | MMARY OF IMPROVEMENT COSTS | | |
| | 85. | Preliminary Engineering (Dollars) | | "000 · |
| | 86. | Demolition Cost (Dollars) | | |
| | 87. | Substructure (Dollars) | | |
| | 88. | Superstructure (Dollars) | | ·1000000 |
| | 89. | | | |
| | 90. | Blank Date of Last Inspection | August 18 , 19. | 39 |
| | 91. | Date of Last Inspection Rehabilitate Existing Structure (Dollars) | (5.0D | |
| | | Detour and Traffic Maintenance (Dollars) | | |
| | | Approaches (Dollars) | | |
| | | Approach Embankment (Dollars) | | |
| | | Approach Pavement (Dollars) | | |
| | | Approach Guardrail (Dollars) | | |
| | 3 | *(Code to nearest thousand dollars) | | |
| | | | | |
| | REN | ARKS The schabilitation all deficiencies discusse | Consists on rep Donition 67 | aur |
| | | V | | |
| | | | | ** |
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| | | | | |

| BRIDGE STUDIES AND EVALUATION OFFICE GENERAL EVALUATION | Page 5 of 5 |
|--|----------------------|
| This bridge is basically in structural condition excelent 4 fair 2 very poor 0 good 3 poor 1 | 18 2 |
| The load carrying capacity is | ''@ |
| I Implementations will make it adequate 2 minimally adequate 1 not required (don't print) 0 adequate 2 0 when previous is 2 | '*[/] |
| The bridge should be replaced. Yes (print) 1 Not required (don't print) 0 | 190 |
| It requires $2 \sqrt{24}$ months routine inspection every 24 months frequent inspection every \textcircled{B} months to monitor abnormal and/or suspected deficiencies frequent inspection every \textcircled{B} months to determine the cause of and remedies for existing defocts $\overbrace{A} = 0$ $\fbox{B} = 24$ | ••2 <u>24</u> A ® |
| It requires 3 routine maintenance 2 minor repairs and routine maintenance 2 urgent repairs to prevent further costly deterioration and/or the development 1 of a dangerous condition and routine maintenance 0 emergency repairs to eliminate danger to the public and routine maintenance 0 | 23 |
| The deck geometry is | PRHA S |
| not required (don't print) 0 The D approach alignment is D (A) [vertical] horizontal 0 (B) [satisfactory 3] minimally tolerable 2 (D) [not required (don't print) 0 | 31 ()) (D) (D) |
| Load Post for inventory rating shown in Item 64 Yes 1 No (don't print) 0 | 33 🖸 |
| Yes No (don't print) | 340 |
| For "Remarks" see bridge file. PERSONNEL Structural Inspection Review of Field Data Fransfer of Data PERSONNEL Date Condition Analysis Appraisal IBM MT/SC file IBM - 370 file | Dote 1/18/39 |

| ROAD NO. | ю. <u>— 1137</u> 2-6 | <u></u> M | (m. <u>4.07</u> | | APPR | AISAL | OF I | TEM B |
|-----------------|-------------------------|-------------|------------------------|------------------------------------|----------------------------|-------|---------------------------------------|-----------------------------|
| | | | | | | | ī | |
| | | | | | | | | |
| e q A second | | | BRIDGE ST EVALUATIO | | | | | |
| | · · · · | | | | 'n | | | |
| | | | | | 8 6 | | н н ¹ | |
| YEAR | ADT | Sec. | Т₩ | T W Adequate or Inediauch | T W I na dequate B y | TW+SH | TW+SH Adequate or Incdequate | TW + SH Inadequate By |
| 1985 | ATIA | \boxtimes | Actual = | \boxtimes | \ge | | \bowtie | \geq |
| | 10110 | | For ADT = | | • | ~ | | Printerna and a state |
| | | | 5 | | | | | |
| 1995 | 11/A | | Read.For ADT ≇ | | ••••• | gu a | | |
| | 10110 | | Rec. PRHA 3 | - <i>Vint</i> | Summer. | | | #00.68" (0.1*** |
| | | | | | | | , ; | |
| | Adequate Incdequate | | | | | | 3 3 3 | el el R |

D.10 July 28, 1987

| the second s | BRIDGE STUDIES AN | D EVALUATION OF | FICE | |
|--|---|--|---------------------------------------|--|
| | | | | Page 1 of 5 |
| 8 | PUERTO RICO HIGHWAY AUTHORIT | Y E | 1137 | 0026 |
| | IBM370 AND IBM MT/SC ELECTRONIC DATA STORAGE | d No. | Bridge No. | Road No. |
| 10 10 | | NVENTORY | | Km. No. 4.07 |
| | | IN ENTOR I | 1. | |
| IDE | NTIFICATION | and the second | | de Positions |
| | | 120191817161514 | | |
| Reading 1 | State | Commonwealth | i of Puerto Rico | |
| 2. | Highway District | *** | | 1307 |
| 3. | Municipality | | | 180063 |
| 4. | City/Town | 10003-0 | 22 7 1 | 100063 |
| | Inventory Route | UT Purau | | |
| 6. | Features Intersected | TER TOTAL IN | ALKWAY | |
| | M <u>PIEIDIEIS</u> | and an and a secolor and a superior of a | | |
| | Facility Carried by Structure ⁵⁶ . | | | 7°011131717 |
| 8. | Structure No. Baldwriaty | De Cardon | | |
| 9. | Location | al cuarta c | nuerue | |
| | | | 5 <i>. 11</i> | 10051/1/ |
| 10. | Inventory Route, Minimum Vertical Clearance (0.0 Kilometer Point (0.01 km) | 1 m) | .07 | 14 10 2 20 27 |
| 11. | Kilometer Point (0.01 km) | ····· | | 19 (710) (19) |
| 12. | Bridge Description | | . ? r < | 24 |
| 13. | Bridge Description | · · · · · · · · · · · · · · · · · · · | | 28 0 2 6 2 |
| 14. | Defense Milepoint (0.01 mf) | · · · · · · · · · · · · · · · · · · · | //····· | 30/21/ |
| 15. | Latitude: | 7.2 | | 33// 02/7/3 |
| 16. | Latitude: Degrees | 2, 2 . Minutes | | 38066033 |
| | | | · · · · · · · · · · · · · · · · · · · | 44 Ø |
| 18. | Physical Vulnerability | Annatura a | un hughin | |
| | By Pass, Detour Length (Nearest mile) | Joll From | us hughur | 473 |
| 20. | | (1) - (1) (1) | | •••••••••••••••••••••••••••••••••••••• |
| 21. | Custodian | General Weberer Deser | | |
| 22. | F.A.P. No. ⁵⁰ | Minown | uncat | |
| · 23. | F.A.P. NO. | | • • • • • • • • • • • 11 | |
| CL | ASSIFICATION () - 4 (| | | |
| | Fed. Aid System | T. Urban | | 1002 |
| | Administrative | | | |
| 26 | Functional | | | |
| 20. | | | | |

| AUCTURE DATA 907654321 21. Year Built 1968 22. Year Built 1968 23. Lanes on Str. 9 Under 24. Lanes on Str. 9 Under 29. ADT - Inventory Route 190,070 (astumited) 29. ADT - Inventory Route 190,070 (astumited) 20. Year 100,070 (astumited) 21. Design Load 100,070 (astumited) 22. Approach Roadway width including shoulders (0.01 m) 24.5 9 m. 23. Approach Roadway width including shoulders (0.01 m) 24.5 9 m. 24. Structure Planed 100 Open 25. Structure Planed 100 Open 26. Structure Planed 128 Mone 27. Taffic Safety Features 148 Structure Planed 28. No total Clearance (0.1 m) Yes 29. Navigation Vertical Clearance (0.1 m) Yes 21. Type Service Yes 22. No. of Spane-Main 1000/201 23. No. of Spane-Main 22.00 Min 23. Vor of Spane-Main 22.00 Min 23. No. of Spane-Approaches 100002 24. Structure Type-Approaches 100002 25. Max, Span Length (0.01 m) 22.00 M. | | BRIDGE STUDIES AND EVALUATION OFFICE |
|---|-----|--|
| 27. Year Built 1968 28. Lanes on Str. 9. Under 28. Lanes on Str. 9. Under 29. ADT - Inventory Route 190,000 (astimulef) 30. Year 1925 31. Design Load 312 32. Approach Roadway width including shoulders (0.01 m) 24.5 9.00 33. Median 100,000 (astimulef) 34. Skew 312 35. Structure Flared 3162 36. Traffic Safety Features 3162 37. Historical Significance 48 38. Navigation Control Yes 39. Navigation Vertical Clearance (0.1 m) Yes 30. Navigation Horizontal Clearance (0.1 m) Yes 31. Structure Type-Main Yes 32. Structure Type-Main Yes 33. Structure Type-Main Yes 34. Structure Type-Approach Spans Yes 35. No. of Spans-Approaches Yes 37. Total Horizontal (0.01 m) 2.3.5997 33. Structure Type-Approaches Yes 34. Structure Type-Approaches Yes 35. No. of Spans-Approaches Yes 36. Structure Type-Approaches Yes <tr< th=""><th></th><th>Page 2 of 5</th></tr<> | | Page 2 of 5 |
| 1 1 128 Lanes on Str. 29 Lanes on Str. 20 ADT - Inventory Route 30 Year 31 Design Load 32 Approach Roadway width including shoulders (0.01 m) 33 Median 34 Skew 35 Structure Flared 36 Structure Flared 37 Yes 38 Navigation Control 39 Navigation Control 30 Yes 31 Navigation Control 32 Yes 33 Navigation Control 34 Structure, Open or Closed to Traffic 36 Structure Type-Main 36 Structure Type-Main 36 Structure Type-Approach Spans 37 Total Horizontal Clearance (0.01 m) 36 Structure Type-Approach Spans 37 Total Horizontal Clearance (0.01 m) 38 Structure Type-Approach Spans 39 No. of Spans-Approaches 30 Yes 31 Structure Length (0.01 m) 32 Structure Length (0.01 m) 33 Structure Length (0.01 m) 34 Stef Structure Length (0.01 m) 35 Structure Length (0.01 m) 36 Structure Length (0.01 m) 37 Structure Length (0.01 m) 38 Structure Length (0.01 m) 39 Structure Length (0.01 m) 30 Structure Length (0.01 m) 31 Structure Length (0. | R | UCTURE DATA [9]8[7]6[5]4[3]2[1] |
| 1 1 128 Lanes on Str. 29 Lanes on Str. 20 ADT - Inventory Route 30 Year 31 Design Load 32 Approach Roadway width including shoulders (0.01 m) 33 Median 34 Skew 35 Structure Flared 36 Structure Flared 37 Yes 38 Navigation Control 39 Navigation Control 30 Yes 31 Navigation Control 32 Yes 33 Navigation Control 34 Structure, Open or Closed to Traffic 36 Structure Type-Main 36 Structure Type-Main 36 Structure Type-Approach Spans 37 Total Horizontal Clearance (0.01 m) 36 Structure Type-Approach Spans 37 Total Horizontal Clearance (0.01 m) 38 Structure Type-Approach Spans 39 No. of Spans-Approaches 30 Yes 31 Structure Length (0.01 m) 32 Structure Length (0.01 m) 33 Structure Length (0.01 m) 34 Stef Structure Length (0.01 m) 35 Structure Length (0.01 m) 36 Structure Length (0.01 m) 37 Structure Length (0.01 m) 38 Structure Length (0.01 m) 39 Structure Length (0.01 m) 30 Structure Length (0.01 m) 31 Structure Length (0. | | 1968 |
| 30. Year 31. Design Load 31. De | | Year Built |
| 30. Year 31. Design Load 31. De | 201 | Lance on Str. 100,000 (astimated) 23 [10000] |
| 32 Approach Roadway width including shoulders (0.01 m) 2.4.5.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7 | 29. | ADI - Inventory Route |
| 32 Approach Roadway width including shoulders (0.01 m) 2.4.5.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7 | 30. | Productrian 31 |
| 33 Median Image: None Open Closed 33 C 34 Skew 35 Structure Flared 35 36 36 37 38 39 38 39 38 39 38 39 38 39 < | | Design Load 24.5 g/M 32 (24.6) |
| 33. median 34. Skew 34. Skew 38. Officiance 35. Structure Flared 38. Officiance 36. Traffic Safety Features 38. Officiance 37. Historical Significance 38. Officiance 38. Navigation Control Yes 39. Navigation Vertical Clearance (0.1 m) Yes 39. Navigation Vertical Clearance (0.1 m) Yes 39. Navigation Horizontal Clearance (0.1 m) Yes 39. Navigation Horizontal Clearance (0.1 m) Yes 41. Structure, Open or Closed to Traffic Yes 42. Type Service Yes 43. Structure Type-Approach Spans 45. No. of Spans-Main 46. No. of Spans-Approaches 47. Total Horizontal Clearance (0.01 m) 48. Max. Span Length (0.01 m) 49. Structure Length (0.01 m) 50. Sidewalk Width (curb-curb) (0.01 m) 51. Bridge Roadway Width (curb-curb) (0.01 m) 52. J. Horizontal Clearance on Light (Uctor Sides – Minimum (0.01 m) 53. Vertical Clearance on Light (Uctor Sides – Minimum (0.01 m) 54. Lateral Underclearance on Light (Uctor Sides – Minimum (0.01 m) 55. Lateral Underclearance on Light (Uctor Sides – Minimum (0.01 m) 55. Lateral Underclearance on Light (Uctor Sides – Minimum (0.01 m) 55. Lateral Underclearance on Light (Uctor Sides – Minimum (0.01 m) 56. Lateral Underclearance on Light (Uctor Sides – Minimum (0.01 m) | | |
| 35. Structure Flared Yes No. 3^{3} 36. Traffic Safety Features 3^{3} 3^{3} 3^{3} 3^{3} 37. Historical Significance 3^{3} 3^{3} 3^{3} 3^{3} 3^{3} 37. Historical Significance 3^{3} 3^{3} 3^{3} 3^{3} 3^{3} 38. Navigation Control 3^{3} | | none 3800 |
| 36. Traffic Safety Features 38 $[\omega] [w] [w] [w] [w] [w] [w] [w] [w] [w] [w$ | | Structure Flored Yes No. |
| 37. Historical Significance 38. Navigation Control 39. Navigation Vertical Clearance (0.1 m) 39. Yes 30. Navigation Horizontal Clearance (0.1 m) 39. Yes 30. No. 30. Navigation Horizontal Clearance (0.1 m) 31. Yes 32. No. 33. Structure, Open or Closed to Traffic 34. Structure Type-Main 35. No. of Spans-Main 36. No. of Spans-Main 37. Total Horizontal Clearance (0.01 m) 31. Lateral Underclearance on Laft (Under) Sides – Minimum (0.01 m) 33. Lateral Underclearance on Laft (Under) Sides – Minimum (0.01 m) 34. Structure and Laft (Under) Sides – Minimum (0.01 m) 34. Structure Learance on Laft (Trance) Sides – Minimum (0.01 m) 33. Clearance on Laft (Trance) Sides – Minimum (0.01 m) 34. Structure Learance on Laft (Trance) Sides – Minimum (0.01 m) 34. Structure Learance on Laft (Trance) Sides – Minimum (0.01 m) 34. Structure Learance on Laft (Trance) Sides – Minimum (0.01 m) 34. Structure Learance on Laft (Trance) Sides – Minimum (0.01 m) | | Traffic Safety Features $39 N N N M$ |
| 38. Navigation Control Yes No ** © 39. Navigation Vertical Clearance (0.1 m) Yes No ** © 40. Navigation Horizontal Clearance (0.1 m) Yes No ** © 41. Structure, Open or Closed to Traffic Open ** © ** © 42. Type Service Patheticum Open ** © ** © 43. Structure Type-Main Patheticum Open ** © ** © 44. Structure Type-Approach Spans No. ** © ** © ** © 45. No. of Spans-Main No. ** © | - | 43 5 |
| 39. Navigation Vertical Clearance (0.1 m) Yes No **** 00 01 40. Navigation Horizontal Clearance (0.1 m) Yes No ************************************ | | Navigation Control |
| 40. Navigation Horizontal Clearance (0.1 m) Yes Yos Yos <t< th=""><th></th><th>Newigation Vertical Clearance (0,1 m)</th></t<> | | Newigation Vertical Clearance (0,1 m) |
| 41 Structure, Open or Closed to Traffic 42. Type Service 43. Structure Type-Main 44. Structure Type-Approach Spans 45. No. of Spans-Approaches 46. No. of Spans-Approaches 47. Total Horizontal Clearance (0.01 m) 48. L= 23.59m, R=. 23.60m 49. Structure Length (0.01 m) 49. Structure Length (0.01 m) 40. Sidewalk Widths (0.01 m) 41. Structure Length (0.01 m) 42. Structure Length (0.01 m) 43. Structure Length (0.01 m) 44. Structure Length (0.01 m) 45. Structure Length (0.01 m) 46. Spans-Approaches 47. Total Horizontal Clearance (0.01 m) 48. Max. Span Length (0.01 m) 49. Structure Length (0.01 m) 40. Structure Length (0.01 m) 41. Structure Length (0.01 m) 42. Structure Length (0.01 m) 44. Structure Length (0.01 m) 45. Structure Length (0.01 m) 46. Max. Span Length (0.01 m) 47. Structure Length (0.01 m) 48. Structure Length (0.01 m) 49. Structure Length (0.01 m) 40. Structu | 40. | Navigation Horizontal Clearance (0.1 m) Yes You No |
| 43. Structure Type-Main \mathcal{M} | 41 | Structure, Open or Closed to Traffic |
| 43. Structure Type-Main \mathcal{M} | 42. | Type Service |
| 44. Structure Type-Approach Spans r_{cond} r_{cond} r_{cond} r_{cond} 45. No. of Spans-Main21000246. No. of Spans-Approaches n_{cond} n_{cond} n_{cond} 47. Total Horizontal Clearance (0.01 m) $L = .23.59 m$, $R = 23.60 m$ n_{cond} n_{cond} 48. Max. Span Length (0.01 m) $23.60 m$, face to face 2002236 49. Structure Length (0.01 m) $52.14 m$ 2002236 49. Structure Length (0.01 m) $52.14 m$ 300000 50. Sidewalk Widths (0.01 m) Left n_{cond} $Right$ N_{cond} 51. Bridge Roadway Width (curb-curb) (0.01 m) $1.64 m$ 300000 52. Deck Width (out-out) (0.01 m) $2.00 m$ 4000000 53. Vertical Clearance over Bridge Roadway-Minimum (0.01 m) $2.00 m$ 4000000000000 54. Vertical Underclearance - Minimum (0.01 m) $5.11 m$ 880720 55. Lateral Underclearance on Right (Outer) Sides - Minimum (0.01 m) $L \neq, R =, 2.19 m$ 88072 56. Lateral Underclearance on Loff (Inney Sides - Minimum (0.01 m) $L \neq, R =, 2.19 m$ 88072 | 43. | Structure Type-Main |
| 46. No. of Spans-Approaches 17 47. Total Horizontal Clearance (0.01 m) | 44. | Structure Type Approach Spans |
| 46. No. of Spans-Approaches 17 47. Total Horizontal Clearance (0.01 m) | 45. | No. of Spans-Main |
| 47. Total Horizontal Clearance (0.01 m) | 46. | No. of Spans-Approaches |
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| Sitevalk Widths (0.01 m) Left | 48. | Max. Span Length (U.U. m) |
| 51. Bridge Roadway Width (curb-curb) (0.01 m) 2.00 m 40 0 0 2 10 52. Deck Width (out-out) (0.01 m) 2.00 m 40 0 0 2 10 53. Vertical Clearance over Bridge Roadway-Minimum (0.01 m) 40 0 0 2 10 44 7 2 9 9 54. Vertical Underclearance - Minimum (0.01 m) 51.11m 48 0 0 12 55. Lateral Underclearance on Right (Outer) Sides - Minimum (0.01 m) L# 1.27m R = 1.19 m 56. Lateral Underclearance on Loft (Inner) Sides - Minimum (0.01 m) L# 2.22m R = 2.19 m 88 0 2 2 | 49. | Structure Length (0.01 m) |
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| 55. Lateral Underclearance on Right (Outer) Sides - Minimum (0.01 m) L# | 54. | Vertical Underclearance – Minimum (0.01 m) |
| 56. Lateral Underclearance on Loff (Inne) Sides - Minimum (0.01 m) | 55. | Lateral Underclearance on Right (Outer) Sides - Minimum (0.01 m) |
| ∩ ¥at // 3ª[¬] | | Lateral Underclearance on Loft (Inne) Sides - Minimum (0.01 m) Le C. R. R. Martine Surface |
| 57. Wearing Surface | 57. | Wearing Surface |

| | BRIDGE STUDIES AND | EVALUATION OFFICE | |
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| | | LVALUATION OFFICE | Page 3 of 5 |
| | DITION | | 987654321 |
| | Material | Condition Analysis | 1.1 . |
| 58. | Deck Aleel | Fair cond | 1100 596 |
| | Superstructure Attech | Ganerally Good | deliar 606 |
| 100 | Substructure | ······································ | Candilian 61 |
| | Channel & Channel Protection | ······································ | 62 M |
| 14003303805 | Culvert & Retaining Walls | $\dots \square \square \square \square \square \square \square$ | 63 // |
| | Estimated Remaining Life | Dalla alera | ······································ |
| | Operating Rating | 111 | · · · · · · · · · · · · · · · · · · · |
| 7120000000 | Approach Alignment | | ⁶⁹ |
| 66. | Inventory Rating | | · · · · · · · · · · · · · · · · · · · |
| | | 10 U | |
| APE | RAISAL | | 243 - |
| - 21 | light and and the | Tel dita The third | ture was painted 10 7 |
| 67. | Structural Condition . Lyht correction at . | gs) and light consider at | fastings and |
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| | e clantis repectively | ·n (A) ····· | |
| 68. | Deck Geometry | 1. 7 | · · · · · · · · · · · · · · · · · · · |
| | | tioni equal to present d | 1 |
| 69. | | an . Bus pront a | lesure lle 12 |
| | Crilenai | | |
| 70. | Safe Load Capacity | ····· | ••••••••••••••••••••••••••••••••••••••• |
| | · · · · · · · · · · · · · · · · · · · | ····¥··(···//···· | 14077) 14077) |
| 71. | Waterway Adequacy | | · · · · · · · · · · · · · · · · · · · |
| | · · · · · · · · · · · · · · · · · · · | ····· forthe ····· | 1 · · · · · · · · · · · · · · · · · · · |
| 72. | Approach Alignment | · ···································· | · · · · · · · · · · · · · · · · · · · |
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| 0.00042.00003 | POSED IMPROVEMENTS | 1987 | 16 2 2 |
| 73. | Year Needed | | |
| 82 | Completed | ***** | |
| | Described | Sa Ja Jacobra i | |
| 74. | Type of Service | Rehabilitation | 19272 |
| | | A A A A | |
| 0.56785555 | Improvement Length (0.1 m) | ····/··/···· | 22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| 77. | Design Loading | | · · · · · · · · · · · · · · · · · · |
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| | BRIDGE STUDIES AND EVAL | UATION OFFICE | | Page 1 of 5 |
| | BRIDGE STODIED HAD DATE | | 9 8 7 6 | 5 4 3 2 1 |
| e E E | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | · n D | | [0] 0]0]0] |
| | , Roadway Width (0.01m) | 10 01 | | NOT |
| . 79. | Number of Lanes | | 30 1 | |
| | | 1995 | | |
| 81. | · · · · · · · · · · · · · · · · · · · | | 0 (1.) | • ` []]] |
| . 82. | a new second | 8 11 1. | 0 Th | |
| 83. | Prop. Adj. Rdwy Improvements-Type | | bert | |
| | A A A A A A A A A A A A A A A A A A A | | .73 | |
| ~ ~ ~ ~ ~ | ST OF IMPROVEMENTS | . / | | |
| | Total (dollars)\$ | \$3,000.00 | | 00003. |
| 84 | Estimated Design Time (months) | | ······ | |
| 2 | Estimated Design Time (months) | | ****** | |
| C 11 T | WIND AND AND AND AND AND AND AND AND AND A | | | 55 55 |
| SU | MMARY OF IMPROVEMENT COSTS | | | 57 57 |
| 0.5 | Preliminary Engineering (Dollars) | (i) •) (Maintai) | | *000 · |
| 85. | Demolition Cost (Dollars) | ************************************** | ••••••••••••••••••••••••• | a a a a a a a a a a a a a a a a a a a |
| 86. | Substructure (Dollars) | •••••••••••••••••••••••••••••••••••••• | | 1000000 |
| 87. | Substructure (Dollars) | •••••• | | |
| 88. | 2004.00 | | | |
| 89. | Blank Date of Last Inspection Rehabilitate Existing Structure (Dollars) | august 25 | 1987 | |
| 90. | Date of Last Inspection | \$3,00 | J.W. | 825921 |
| 91. | Detour and Traffic Maintenance (Dollars) | | | 003 |
| 92. | Approaches (Dollars) | | | 0001 |
| | Approach Embantument (Dollars) | | | 000 |
| | Approach Pavement (Dollars) | | | |
| | Approach Favement (Donars) | | | |
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| a k to re | deficiencias described on | musto in repair | in the | 2 2 |
| | deficiencies described on | item no.67 | | |
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| CIDGE STUDIES AND EVALUATION CFICE | Page 5 of 5 |
|---|---|
| this bridge is hasically in <u>3</u> structural condition <u>excelent 4</u> fair 2 very poor 0 <u>good 3</u> poor 1 | 18 [3] |
| The load carrying capacity is | 170 |
| The recommended modifications will make it O adequate 2 minimally adaquate 1 not required (don't print) 0 0 when previous is 2 | 1 8 2 |
| The bridge should be replaced. Yes (print) 1 Not required (don't print) 0 | 19 |
| It requires 2624 routine inspection every 24 months [(A) = 2] (B) = 24] | 20224 |
| frequent inspection every (\underline{B}) months to monitor abnormal and/or suspected deficiencies $(A) = 1 (B) = \text{months} $ | (Å) (B) |
| frequent inspection every $\widehat{(\mathbf{b})}$ months to detarmine the cause of and remedies for existing defects $\widehat{(\mathbf{b})} = 0$ $\widehat{(\mathbf{b})} = $ months | |
| It requires 2 routine maintenance 3 minor repairs and routine maintenance 2 urgent repairs to prevent further costly deterioration and/or the development 2 of a dangerous condition and routine maintenance 0 emergency repairs to eliminate danger to the public and routine maintenance 0 | .83 2 |
| O The deck geometry is | PRHA |
| The D approach alignment is B O vertical 1: horizontal 0 horizontal and vertical 2 B satisfactory 3 minimally tolevable 2 poor and represents a dampar to the public 1 not required (don't print) 0 | 31 DD 808 |
| Load Post for inventory rating shown in Item 5.4 Yes 1 No (dan't print) 0 | 34 0 |
| Post for vertical underclearance shown in Hems 54 & 69 Yes 1 No (don't print) 0 | 39[0] |
| For "Remarks" see bridge file. | 1947 - 2016 - 1970 - 2016 - 2016 - 2016 - 2016 - 2016 - 2016 - 2016 - 2016 - 2016 - 2016 - 2016 - 2016 - 2016 - 1921 - 1921 - 2017 - 20 |
| PERSONNEL Structural Inspection Review of Field Data Transfer of Data Person Person Pers | Base 8/25/07 |

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| | ROAD NO. | | 26 | км4.07 | | appr | AISAL | UF | i ° C.N. | 68 |
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| а ²⁵ | | 8 | | | | | | | | |
| 2 | 35 | | | BRIDGE S | TUDIES | AND | | | * | |
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D.11 April 21, 1986

| | BRIDGE ST | UDIES AND EVA | LUATION OF | FICE | Page 1 of 5 |
|----------------|---|--|---------------------|-----------------------|---------------------------|
| | PUERTO RICO HIGHWAY A IBM-370 AND IBM MT/SC FLECTRONIC DATA STORA | | L v . d No. | 7737 Bridge No. | <u>රිදි</u> ය Road No. |
| 8 | ELECTRONIC DATA STORA | BRIDGE INVEN | | Durger | Km. No. <u>4. 07</u> |
| 105 | NTIFICATION | | | Co | de Positions |
| ID L | | 242322212019 | 18171615141 | 3 12 11 10 3 8 | 7654321 |
| , ¹ | Stata | | Commonwealth | of Puerto Rice | 10 7 2 1 |
| . ? | Highway District | A PS CORTRO | | | "@Z |
| 1 3 | Municipality | 418 JUNI | | | |
| 4 | City/Town | WAR SUMA | | | 18010163 |
| 5. | Inventory Route | 1-1.000 | 9\$ <i>p</i> | 22 21 | 100030 |
| 6. | Features Intersected | DESTRIAN | e Is alk | CUNY. | |
| | 31 | EDESTR | LAN W. | AKWAY | |
| 7. | Facility Carried by Structure ⁵⁶ | . P. C 2-4 | ? <u>,</u> | | |
| 8 | Structure No. | 37 | £ | | 0//3/2/ |
| 9. | Location 10. ZALDOALOT | 4. P.C. CA | érreð | AFERUE | |
| | | | | | |
| 10. | Inventory Route, Minimum Vertical Cle | arance (0.01 m) . | | 4 | 105111 |
| 11. | Kilometer Point (0.01 km) | | | | 001/012 |
| 12. | Road Section Number (DOD) | | | | 0025- |
| 13. | Bridge Description | N5/S | | | |
| 14. | | 2 62 | ······ | | 200262 |
| 15. | Defense Section Length (miles) (0.1 mil | e) | | | |
| 16. | Latitude: Z.S De | grees . 2.7.3. | Minutes | | 38 - 1 - 2 - 7 - 3 |
| 17. | Longitude: Co Co Dé | prees 03.3 | Minutes | | -000000 |
| 18 | Physical Vulnerability | Z. Z. C. C / | I I C was | | |
| 19. | By Pass, Detour Length (Nearest mile) | STRUCT UN | e dre | Man second | 47년 47년 |
| 20. | Toll | | ζ <u>ς φ.</u> | | |
| 21. | Custodian | 4. 6. H. K. | 4 | | |
| 22. | Owner | State | Highway Depar | rtment | •••••• |
| 23. | F.A.P. No. 50 | <i>¥</i> | ******** | | |
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| CL | ASSIFICATION | rorn state | . da | re el N | 002 |
| 24. | Fed. Ald System | Stata | • • • • • • • • • • | | 12 |
| 25. | ASSIFICATION Fed. Aid System Administrative | トー・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・ | | • • • • • • • • • • • | " " [] |
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| BRIDGE STUDIES AND EVALUATION OFFICE | | | | | | |
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| Page 2 of 5 | | | | | | |
| STRUCTURE DATA 987654 | 321 | | | | | |
| 27. Year Built | 800 | | | | | |
| | 005 | | | | | |
| 29. ADT - Inventory Rouse | 000 | | | | | |
| 30. Year | | | | | | |
| 31. Design Load | . : "Z | | | | | |
| 32. Approach Roadway width including shoulders (0.01 m) | 246 | | | | | |
| 33. Median Closed | . 38 | | | | | |
| 34. Skew | | | | | | |
| 35. Structure Flared Yes 🖾 No | | | | | | |
| 36. Traffic Safety Features | K K K | | | | | |
| 37. Historical Significance | | | | | | |
| 38. Navigation Control | . 48 🙆 | | | | | |
| 39. Navigation Vertical Clearance (0.1 m) | | | | | | |
| 40. Navigation Horizontal Clearance (0.1 m) 🔲 Yes 🖾 No | | | | | | |
| 41 Structuse, Open or Closed to Traffic | State of the second | | | | | |
| 42. Type Service | | | | | | |
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| | 002 | | | | | |
| | 000 | | | | | |
| | 234 | | | | | |
| | 1836 | | | | | |
| 49. Structure Length (0.01 m) (| 521/ | | | | | |
| 50. Sidewalk Widths (0.01 m) Left | 000 | | | | | |
| | 076 | | | | | |
| | 020 | | | | | |
| 53. Vertical Clearance over Bridge Roadway-Minimum (0.01 m) | | | | | | |
| 54. Vertical Underclearance – Minimum (0.01 m) | | | | | | |
| | 072 | | | | | |
| | OZZ | | | | | |
| 57. Wearing Surface | 69 | | | | | |
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| 1 | BRIDGE STUDIES AND E | VALUATION OFFICE | Page 3 of 5 |
|-------|--|--|--|
| COI | NDITION | 8 | 987654321 |
| - 0 | Material | Condition Analysis | Soul Condition 59 7 |
| | Deck | GENERALLY G | 1/ 1/ 60 m |
| | Superstructure | ••••• | |
| | Substructure | · · · · · · · · · · · · · · · · · · · | 62 |
| | Channel & Channel Protection | ••••••••••••••••••••••••••••••••••••••• | 63 |
| 1 | Culvert & Retaining Walls | ••••••••••••••••••••••••••••••••••••••• | 1 |
| 10 20 | Estimated Remaining Life | Portra contra d | 66 8 20 |
| | Operating Rating | | 69 W |
| | Approach Alignment | | 70 PT 20 |
| 66. | Inventory Rating | /· ¥2,6. ? / /6,79.7 | |
| | RAISAL | | |
| APr | KAISAL | Defininging | |
| 67. | Structural Condition MINNEN MININTEMA SAMD DINATORY MAIN PAINTIN | Deficiencies INCE is Newrin S | <i>€∕]</i> |
| | × × × × × × × × × × × × × × × × × × × | .,,,,, | |
| 68. | Deck Geometry | 1. / A | |
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| 69. | Underclearances-Vert. & Lateral Condition . 6: | BUNT TO PAESENT DES | MARCE ENDERN ¹² Z |
| 53 | *********** | | |
| 70. | Safe Load Capacity | | |
| | · | | |
| 71. | Waterway Adequacy | General strategy and the second strategy and the secon | '• |
| | | · · · · passon | |
| 72. | Approach Alignment | · · · · / · · · · · · · · · · · · · · · | |
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| | • 5. | | |
| | POSED IMPROVEMENTS | 1901 | 16[23]21 |
| 73. | Year Needed | | 16 8 2 |
| | Completed | | |
| | Described | | |
| | Type of Service | 7727HX | |
| | The second s | : (4/2.A. 7(2) | to record of the second of the |
| | Improvement Length (0.1 m) | | |
| 77. | Design Loading | 4 | · · · · · · · · · · · · · · · · · · · |
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| | • | BRIDGE STUDIES AND EVALUATION OFFICE | Page 1 of 5 | |
| 9 8 8 | 2 | u 1 | 987654321 | |
| | 78 | Roadway Width (0.01m) | | |
| | 79 | | มอก | |
| | 80 | ADT | 17 200ED | |
| | 81. | Year of Estimated ADT | •।छिट | |
| 1 | | and the second s | • ` @`` | |
| | 83 | Prop. Adj. Rdwy Improvements-Type | 43 <u>(</u> | 12 |
| | pe. | | 3 | |
| | COS | T OF IMPROVEMENTS | | |
| | | | | |
| | 84 | Total (dollars)\$ | 46 <u>[]@@//</u>] | • |
| | | Estimated Design Time (months) | | |
| | | have definite on the second | 2 | |
| | SUM | MARY OF IMPROVEMENT COSTS | | |
| | | | | |
| | 85. | Preliminary Engineering (Dollars) | 3) <u>E[C]</u> | • |
| | 86. | Demolition Cost (Dollars) | अहालत | |
| | 87. | Substructure (Dollars) | 57 <u>86860</u> , | * |
| | 88. | Superstructure (Dollars) | 62 7 6 6 6 C | • |
| | 89. | Blank. | <u>م</u> | • |
| | 90. | Date of Last Inspection | ······································ | 09-08-82 |
| | 91. | Rehabilitate Existing Structure (Dollars) | | • |
| | 07 | Detour and Traffic Maintenance (Dollars) | 110000 | |
| | 93. | Approaches (Dollars) | ** 00000 | • |
| | 1 | Approach Embankment (Dollars) | | |
| | | Approach Pavement (Dollars) | | |
| | | Approach Guardrail (Dollars) | | |
| | | (Code to nearest thousand dollars) | ••••• | |
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| 1985 | na | \boxtimes | Actual = | \bowtie | \times | \geq | \sum | |
| | , | | For ADT = | _ | | | | |
| | | | | | | | 4 | 1 |
| 1995 | -na | | Regd. For ADT = | | | 1 | | |
| | | | Rec. PRHA E | | | | | |
| | | | | 95 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - | | | 1 | - |
| 1 | Adequate | | | | | | | |
| | Inadeguate | | 58 | | | | | |
| A (| Indaequate | | | | | | | |

| General Evaluation | Page 5 of 5 |
|--|-----------------------|
| This bridge is basically in structural condition excelent 4 fair 2 very poor 0 good 3 poor 1 | 16 🕖 |
| The load carrying capacity is | 170 |
| The recommended modifications will make it | H# 🕖 |
| The bridge should be replaced. Yes (print) 1 Not required (don't print) 0 | 19 [J] |
| It requires routine inspection every 24 months frequent inspection every (B) months to monitor abnormal and/or suspected deficiencies frequent inspection every (B) months to determine the cause of and remedies for existing defects $(A) = 0 (B) = months$ | *°ह <u>राज</u> & ® |
| It requires 3 routine maintenance 2 minor repairs and routine maintenance 2 urgent repairs to prevent further costly deterioration and/or the development 1 of a dangerous condition and routine maintenance 0 emergency repairs to eliminate danger to the public and routine maintenance 0 | 23 |
| For present ADT, the shoulders are | PRHA |
| The Dapproach alignment is B O= vertical 1 horizontal 0 horizontal and vertical 2 B= satisfactory 3 minimally tolerable 2 poor and represents a danger to the public 1 not required (don't print) 0 | 3' <u>6 6</u> 80 |
| Load Post for inventory rating shown in Item 64 Yes 1 No (don't print) | 33 🖉 |
| Post for vertical underclearance shown in Items 54 & 69 Yes 1 No (don't print) 0 For "Remarks" see bridge file. | 34 |
| PERSONNEL By Date Structural Inspection Review of Field Data Condition Analysis Transfer of Data IBM MT/SC file IBM -370 file 4/24/54 | Date Table dat |

| BRID | GE STUDIES AND EV | ALUATION OFF | ICE | Page 1 of 1 |
|--|--|--------------|-------------------|---|
| PUERTO RICO HIGHWA IBM — 370 AND IBM MT/ ELECTRONIC DATA STO | SC | Card No. | Bridge No. | Road No. |
| | ROUTE UNDER ST | RUCTURE | Code Posi | Km. No |
| an a | 15 | | Code Posi | uons |
| IDENTIFICATION | 25242322212 | 019181716151 | 4 13 12 11 10 9 1 | 8 7 6 5 4 3 2 1 |
| 5. Inventory Route | | | | 0 |
| 6. Features Intersected | | | | |
| * | | | | |
| 8. Structure No | | | | 44 <u>0</u> |
| 10. Inventory Route, Minimum Vertic | a (11) | | | |
| 11. Kilometer Point (0.01 km) | | | | |
| 12. Road Section Number (DOD) . | | | | e e 🗁 🗖 |
| Bridge Description | | | | e e 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 |
| 15. Defense Section Length (miles) (0 | | | | 70 |
| 19. By Pass, Detour Length (Nearest n | 1999 - 1999 - 1999 - 1997 - | | | |
| 19. By Tass, Detour Dengui (realest h | inte) | | | |
| CLASSIFICATION | | | | |
| 24. Fed. Aid System | ********* | | | |
| 25. Administrative | | | | |
| 26. Functional | | | | · · · · · · · · · · · · · · · · · · · |
| 6 | | | | |
| STRUCTURE DATA | | | | |
| 29. ADT – Inventory Route | | | | 10 0 |
| 30. Year | | | ** *** *** * | |
| 47. Total Horizontal Clearance (0.01 r | n) L .= | R | | |
| | | | | |

D.12 July 16, 1975

| : e | | | Berner state | |
|-----|---|---------------------|---------------------------------------|--|
| | BRIDGE STUDIES AND E | VALUATION OF | FICE | Page 1 of 5 |
| | PUERTO RICO HIGHWAY AUTHORITY | | 7737 | 2000 |
| 3 | 1BM—370 AND IBM MT/SC ELECTRONIC DATA STORAGE | Card No. | Bridge No. | Road No. |
| | BRIDGE INVE | ENTORY | 12 | Km. No. n.e. |
| IDE | NTIFICATION | | Co | de Positions |
| | 252423222120 | 191817161514 | | 7654321 |
| 1. | State | . Commonwealth | n of Puerto Rico | 10721 |
| | Highway District | | | |
| | Municipality $S_{n,n}$. | | | |
| 4. | City/Town | James | | 10063 |
| 5. | Inventory Route | 50 | | 0000000 |
| 6. | Features Intersected | | | |
| | ······································ | | | |
| 7. | Facility Carried by Structure 56 Pe. Jestian. | . Walky | | •••••••••••••••••••••••••••••••••••••• |
| 8. | | re of er | re | 10//37/ |
| 9. | Location 10 Baldonioty. de C. | 4a.000.1.40.0 | men | |
| | | | · · · · · · · · · · · · · · · · · · · | 10 21 21 21 2 |
| 10. | Inventory Route, Minimum Vertical Clearance (0.01 m |)Unli | milled | |
| 11. | Kilometer Point (0.01 km) | Mr.a. | | |
| 12. | | H | | ······································ |
| 13. | Bridge Description | DH N 21.2 | \mathcal{P} | |
| 14. | | D.H | | 30 |
| 15. | | 9.H | | |
| 16. | | 2. Minutes | | 38 1 (()) 2 2 2 3 |
| 17. | Longitude: | ? . Minutes | •••••••••• | 44 [7] |
| 18. | | let I the | · · · · · · · | 45 |
| 19. | By Pass, Detour Length (Nearest mile) | Aller H | An heridan | * |
| 20. | Toll No. toll. Ap | · ! ! ! ! ! | ne en non | |
| 21. | | 7 . . | | 49 🟹 |
| 22. | Owner | te Highway Depai | tment | |
| 23. | F.A.P. No. ⁵⁰ | | | ***** |
| OT | | | | |
| CL | ASSIFICATION Fed. Aid System | · mar | | 10//2/ |
| 24. | Administration | | | 127 |
| 25. | Administrative | 11 1110 576 5 6 | ortenial | 13 [4] 3 |
| 20. | runchonal | | | а |

| | BRIDGE STUDIES AND EVALUA | TION OFFICE | 0.05 |
|--------------------------------|--|------------------------|---|
| | 2-03.0000 (1900) | Pa | ge 2 of 5 |
| STRUCTURE DATA | | 9 8 | 87654321 |
| TAX STATES | 1968 | | 156800 |
| 27. Year Built | | | |
| 28. Lanes on Str O . | . Under | | |
| 29. ADT – Inventory Route | NA | | 2900 |
| 30. Year | | | 310 |
| 31. Design Load | Pedestrian | 111/270 | 32 |
| 32. Approach Roadway width | including shoulders (0.01 m) | . M. M. G | |
| 33. Median | | □ Open □ Cl | |
| | | | 70 |
| 35. Structure Flared | Y | es 🛛 No | |
| 36. Traffic Safety Features . | | | the second se |
| 37. Blank | <u></u> | <u></u> | |
| 38. Navigation Control | Ц Х | es 🖾 No | |
| 39. Navigation Vertical Cleara | ance $(0.1 \text{ m}) \dots \dots \dots \dots \dots$ | es 🖉 No | 47 000 |
| 40. Navigation Horizontal Cle | earance (0.1 m) 🔲 Y | | 50 0 0 0 0 |
| 41 Structure Open or Closed | to Traffic | pen | 54 |
| 12 Tuna Samira | Pedestraw. | over Highway | |
| 42 Oberature Trune Main | STEEL Track | 1 Deck | |
| 44. Structure Type-Approach | Spans | | |
| 45 No. of Spans-Main | Tup | | |
| 46 No of Spans-Approaches | 1º ene | | 130000 |
| 47 Total Horizontal Clearand | ce (0.01 m) L = / . 6.2. | R.= | |
| 48. Max. Span Length (0.01) | m) | 7 | 0243 |
| 49 Structure Length (0.01 m | n) | 14 | |
| 50. Sidewalk Widths (0.01 m |) Left | ···· | |
| 51 Dridge Boodway Width (| (0.01 m) | 6 6 | |
| 52 Deck Width (out-out) (0 | 01 m) | .1.62 | |
| 52 Vertical Clearance over B | ridge Roadway-Minimum (0.01 m) | Unlimited | |
| 54 Vertical Underclearance | - Minimum (0.01 m) | | |
| 55 Lateral Underclearance of | n Right (Outer) Sides – Minimum (0 | .01 m) L=1.44. R=. | (:17 |
| 56 Tateral Underclearance C | on Right (Outer) Sides – Minimum (@ | .01 m) L=/. 24 . R = / | |
| 57 Weating Surface | ST.el Plate | | |
| 57. Wearing burrace | | | |

| | BRIDGE STUDIES AND EV | |
|-------|---|--|
| | | Page 3 of 5 |
| | NDITION Material | 987654321 Condition Analysis |
| | Material Deck | Good Cond MC N- 598 |
| 50. | Superstructure | Mund I. C. M.F. 607 |
| 59. | Substructure 5/ 65/ | Maral 2 6 18 5 617 |
| 100 | Channel & Channel Protection | |
| | Culvert & Retaining Walls | M. M. 63 |
| 20 BL | Estimated Remaining Life | 15 48915 64 [5] |
| 64 | Operating Rating | Pedestrian Walkway 66 800 |
| 65 | Approach Álignment | 69 ₁₇ |
| 66 | Inventory Rating | ofulnor Kalknow "08100 |
| 00. | | |
| API | PRAISAL | |
| | | Deficiencies |
| 67. | Structural Condition Moderatt. correstan | at whole bodge 102 |
| | | |
| | ······································ | |
| 68. | Deck Geometry | |
| | | |
| 69. | Underclearances-Vert. & Lateral (5:19.74) Superior | er to precent desirable criteria " |
| 35 | | |
| 70. | Safe Load Capacity | N.A |
| | | · · · · · · · · · · · · · · · · · · · |
| 71. | Waterway Adequacy | |
| | | |
| 72. | Approach Alignment | · · · · · · //·//· · · · · · · · · · · |
| | | |
| | | |
| PRO | OPOSED IMPROVEMENTS | |
| 73. | Year Needed | |
| | Completed | |
| ч., | Describe | |
| 74. | Type of Service . Medestriam. ouen. hug | hway |
| 75. | 1 Second and a support of the second seco | |
| 76. | | |
| 77. | Design Loading | [[] y -] - [|

| BRIDGE STUDIES AND EVALUATION OFFICE | Page 4 of 5 |
|---|------------------------|
| | 7654321 |
| 78. Roadway Width (0.01 m) | 290000 |
| | 3300 |
| | 35000000 |
| | 41 <u>80</u> |
| D 1 T | |
| 82. Year of Proposed Adjacent Roadway improvements | 45 |
| 85. Flop, Auj, Ruwy implotential Syr | |
| COST OF IMPROVEMENTS | |
| > 106 | 46 0 0 0 0 5 * |
| 84. Total (dollars) \$ | |
| | |
| SUMMARY OF IMPROVEMENT COSTS | 51000 * |
| 85. Preliminary Engineering (Dollars) | 54000× |
| 86 Demolition Cost (Dollars) | • <u>• া</u> |
| 87 Substructure (Dollars) | 6200000 * |
| 88. Superstructure (Dollars) | 67 8 * |
| 89. Blank | 68 003 * |
| Blank | 71000 * |
| 91. Detour and Traffic Maintenance (Dollars) | 74000 * |
| 92. Approaches (Dollars) | |
| Approach Embankment (Dollars) | |
| Approach Pavement (Dollars) | |
| Approach Guardrail (Dollars) | |
| (* Code to nearest thousand dollars) | 10071675 |
| (* Code to nearest thousand dollars) 93. Date of Last Inspection | |
| | |
| REMARKS | A 1 |
| 1) Rehabilitation (Item 90) should includes; a) Remaind. Type. | ias rion Ill |
| 1) Kehabiliterian (Hen sof sound incourses of Section of any, strongent steel by means of wine brash in any, muther and the protodian of it, with paint, b) | other acceptance |
| without and the motodich of it, with paints. | . The . rep to classic |
| Samada Standbard Classen and March | |
| | · · · · · · · |
| | × • • • • • • • • • |
| | 19.1 |
| · · · · · · · · · · · · · · · · · · · | and a const |
| | |

| BR. JE STUDIES AND EVALUATION OF E | Page 5 of 5 |
|--|-------------|
| This bridge is basically in | 16 |
| good 3 poor 1 | |
| The load carrying capacity is | 170 |
| The recommended modifications will make it | 180 |
| adequate 2 minimally adequate 1 not required (don't print) 0 | |
| 0 when previous is 2 | |
| and the second sec | 190 |
| The bridge should be replaced. Yes (print) 1 Not required (don't print) 0 | |
| | 20 (1.12) |
| It requires $\frac{1}{1}$ | - Ma |
| routine inspection every $\underline{24}$ months $\boxed{A} = 2$ $\boxed{B} = 24$ | (A) (B) |
| monitor abnormal and/or suspected deficiencies $(A) = 1 (B) = months$ | 00 |
| frequent inspection every (B) months to determine | |
| the cause of and remedies for existing defects $(A) = 0$ $(B) = months$ | |
| It requires | 23 2 |
| Surviva maintenance | |
| minor repairs and routine maintenance | |
| urgent repairs to prevent further costly deterioration and/or the development | |
| of a dangerous condition and routine maintenance emergency repairs to eliminate danger to the public and routine maintenance 0 | |
| emergency repairs to eliminate danger to the public and routine maintenance | |
| The deck geometry is $ \underline{\mathcal{O}} $ | |
| For present ADT, the travelled way is | |
| For future (1990) ADT, the travelled way is | PRHA |
| For PRHA (1990) recommendations, the travelled way is24 Deck Present Future PRHA Present Future | |
| For present ADT, the shoulders are | U |
| For future (1990) ADT, the shoulders are <i>Travelled way</i> Shoulders | |
| | |
| satisfactory 3 unsatisfactory 2 cannot be evaluated because of lack of information 1 | |
| not required (don't print) 0 | |
| The Dapproach alignment is D | 31 00 |
| (A = vertical 1 horizontal 0 horizontal and vertical 2 | AB |
| B = satisfactory 3 minimally tolerable 2 poor and represents a danger to the public 1 | |
| not required (don't print) 0 | |
| Load Post for inventory rating shown in Item 66 | 33 0 |
| Yes 1 No (don't print) 0 | |
| | 34 |
| Post for vertical underclearance shown in Items 54 & 69 | |
| Yes 1 No (don't print) 0 | |
| For "Remarks" see bridge file. | |
| PERSONNEL By Date 1/2-By | Date |
| Structural Inspection L. Perer Jul 16/25 Condition Analysis | 1-26-26 |
| Review of Field Data J. Cepero Jul 16173 Appraisa | 3-30-76 |
| Transfer of Data <u><i>Leleonto</i></u> <u>Sano 14176</u> IBM M1/SC file | |
| | |
| | |

| 5) | BRIDGE NO | 58 | (C) | ° (M | | APPR | ISAL | OF | ITEM | 68 |
|--|--------------------|-----------------|-----------|-------------------|------------------------------|----------------------------|---------|-------------------------|--------------------|------------|
| 0.00 | 20 21 | 10 | | | | | | | | |
| | , | | | | | | | | | |
| ×. | | | | 2 | | | | | | |
| ал. 1911 - 1912 - 1912 - 1912 - 1912 - 1912 - 1912 - 1912 - 1912 - 1912 - 1912 - 1912 - 1912 - 1912 - 1912 - 1912 - | | | | | | | | | | |
| 2 | * § 2 ₄ | | | 17 2 | | | | | | |
| | | | | BRIDGE ST | | | | | | <i>.</i> 5 |
| 2.1 | | | | EVALUATIO | ON OF | FICE | | | | |
| st. | | i di dan Lit | | | | 2 | | | | |
| | | | | | | | | | | |
| | d a | 1 | | | | | | | | |
| a | | | | | TW | τw | | TW+S | H TW + SI | |
| 0.00 | YEAR | ADT | Sec. | Т₩ | Adequate or Inadequate | l na dequate By | TW+SH | Adequa or Incideg | nte inadequa By | le |
| | 1070 | | \bowtie | Actual ≡ | \ge | \times | | \geq | \searrow | 1 |
| | 1970 | Ar Ka | | For ADT≡ | | | | | n | |
| | | | | | | | | | 12 | |
| | 2 | | | | | 65 | | | | |
| | 1990 | | | Regd.For ADT ≡ | | | | | | |
| | 1330 | | | Rec.PRHA ≣ | | | <i></i> | | | |
| | | | | | | terre in the second second | | | | 12 |
| | | dequate | | | | | | | | |
| | | | | | | | | | 1 | |
| | A 1 | nadequate | | | | | 8 | | | |
| | | | | 14 C | | | | | | |

| BRIDO | GE STUDIES AND EVA | LUATION OFFI | CE | Page 1 of 1 |
|---|--------------------|------------------|--|---------------------------------|
| PUERTO RICO HIGHWAY IBM — 370 AND IBM MT/ ELECTRONIC DATA STO | SC | Card No. | Bridge No. | Road No. |
| | ROUTE UNDER STR | RUCTURE | | Km. No. <u>4. 07</u> |
| | | | Code Positio | ons |
| IDENTIFICATION 5. Inventory Route $PR 26$ | | | 1312111098 1023 | |
| 6. Features Intersected F | | | | |
| | | 1134 | | |
| 8. Structure No. | 11.37 0 | and of on | e | 440/1371 |
| 10. Inventory Route, Minimum Vertica | | | | 500519 |
| 11. Kilometer Point (0.01 km) | | | Constraint and the linear way and server and the | 5400402 |
| 12. Road Section Number (DOD) | | 5 | | 5900255 |
| 13. Bridge Description | | 2H. NSTS. | P | 64 11 2 |
| 14. Defense Milepoint (0.01 m) | | 62 | | 660262 |
| 15. Defense Section Length (miles) (0. | | | | |
| 19. By Pass, Detour Length (Nearest m | ile) | iginal 19 | cad | 73 00 |
| × | | and. | | |
| CLASSIFICATION 24. Fed. Aid System | F. J. M. m. | all and a second | | |
| 24. Fed. Aid System | The ast of | | | |
| 24. Fed. Ald System | 1.1.2.1.57.7 | 6 | ¥ · · · · · · · · · | |
| $26. \text{Functional} \dots \dots M_n$ | raan. T. Mener | Dal. Mr. | (mich | · · · · · · · · · · · · · · · · |
| | .0 | | 1. 12 | |
| STRUCTURE DATA 29. ADT – Inventory Route | 3655 | 7 | | 10 COLORIAL |
| | | | | |
| | | | | |
| 47. Total Horizontal Clearance (0.01 m | U)L≓70.9 | ∵R≓ | | |
| | | | | |
| 22 W | | | | |

D.13 November 13, 1972

| | P. a. J | COMMONWEALTH OF PUERTO RICO HIGHWAY AUTHORITY IBM-370 AND IBM MT/SC ELECTRONIC DATA STORAGE BRIDGE INVENTORY Km. No. 54 |
|-------|---------|--|
| | | BRIDGE INVENTORY Km. No. 40 A Code Positions |
| 1. 1. | IDE | TIFICATION 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 |
| 1 | 1. | State |
| . 1 | 2. | Highway District |
| | 3. | Municipality |
| 1.10 | 4. | City/Town |
| | 5. | Inventory Route C. Palacio Pedestrian Walkway. 22 180 15 5 5 50 |
| | 6. | Features Intersected P.R. 2.6. |
| | | |
| | 7. | Facility Carried by Structure Pedes Try an. Walk Way |
| | 8. | Structure No. 1/37 / 01/137/ |
| Cent | 29. | Location By. Gem. Shopping. c.e.o. fer., Are. Baldosioty. de. Castro., |
| | | IN Sen Juan |
| Carl | 310. | Inventory Route, Minimum Vertical Clearance (0.01 m) Un limited |
| | | Kilometer Point (0.01 km) |
| | 12. | Road Section Number (DOD) . Not detense highway |
| | | Bridge Description NOHODH NSTS P |
| | | Defense Milepoint (0.01 m) . Not de tense high N. s.y 26 1000 |
| 22 | 15. | Defense Section Length (miles) (0.1 mile) . Not. defense. highwap |
| | 16. | Latitude: 8 Degrees . 27.0 Minutes |
| | | Longitude: $.64$ Degrees $.93$ Minutes $$ $$ $$ $$ $$ $$ $$ |
| | | Physical Vulnerability . S.Teel. Truss |
| 18 | | By Pass, Detour Length (Nearest mile) . Welk. across high way |
| | | Toll No. Toll for road or bridge |
| 1 | | Custodian |
| | 22. | Owner |
| | 23. | F.A.P. No |
| | CLA | SSIFICATION |
| | 24. | Fed. Aid System |
| | 25. | SSIFICATION Fed. Aid System |
| | 26. | Administrative State |
| | | |
| N. | | |

| | 112 70 | Page 2 of 4 |
|-------|--|--|
| STR | UCTURE DATA $\beta_1 - 1137C$ | 987654321 |
| 27. | Year Built | 156800 |
| 28. | Lanes on Str \mathcal{Q} Under . \mathcal{S} | |
| 29. | \overrightarrow{ADT} – Inventory Route. \overrightarrow{MA} | 23 6 66 6 6 0 |
| 30. | Year | |
| 31. | Design Load Pedestaian | |
| 32. | Approach Roadway width including shoulders (0.01 m) $$ | 32 5 5 5 |
| 33. | Median None 🦻 Open | personal and a second s |
| 34. | Skew | 36 🖉 🖉 |
| 35. | | |
| 36. | Hydraulic Structure | |
| 37. | Report Available | · · · · · · · · · · · · · · · · · · · |
| 38. | Navigation Control | |
| . 39. | Navigation Vertical Clearance (0.1 m) \mathcal{NA} . \Box Yes \Box No | 42 <u>00 </u> |
| 40. | | 45 0000 |
| 41. | Relief Structures | |
| 42. | Type Service Pedestoine . aree highway | |
| 43. | Structure Type-Main S.T.eel. deck. Truss | |
| 44. | Structure Type-Approach Spans \dots $\mathcal{NAp}\mathcal{L}$, \dots \dots \dots | |
| 45. | No. of Spans-Main | · · · · · · · · · · · · · · · · · · · |
| 46. | No. of Spans-Approaches | |
| 47. | Total Horizontal Clearance (0.01 m) $L = / . L = R =$ | |
| 48. | Max. Span Length (0.01 m) $24.3.7$ | and the second the second s |
| 49. | Structure Length (0.01 m) | |
| 50. | Sidewalk Widths (0.01 m) Left $\ldots \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc $ Right $\ldots \bigcirc \bigcirc \bigcirc \bigcirc $ | |
| 51. | Bridge Roadway Width (curb-curb) (0.01 m) | |
| 52. | | 40 0016 |
| | Vertical Clearance over Bridge Roadway-Minimum (0.01 m) . Un limite of | |
| | Vertical Underclearance – Minimum (0.01 m) | |
| ~ | Lateral Underclearance on Right (Outer) Sides – Minimum (0.01 m) . $L=./.$ | bet and the second second |
| (8) | Lateral Underclearance on Left (Median) Sides – Minimum (0.01 m) L=./ J | |
| 57. | Wearing Surface | |
| | ь. | |
| 12 | | |
| | | |
| | HARRIS | |

| 1 | | 12. | 11 - 1 | G | Page 3 of 4 |
|------|---|----------|-----------|------------------|---------------------------------------|
| CO | NDITION | | | | 987654321 |
| | Material | | Co | ndition Analysis | |
| 58. | Deck Stee/ | • | A | linor | -mf 597 |
| 59. | Superstructure . Steel | •1 14 | <i>M</i> | IDAR Is | m.f |
| | Substructure Steel | | 6 | CNRN. | 61 |
| 61. | Channel & Channel Protection | | | | · · · · · · · · · · · · · · · · · · · |
| | Culvert & Retaining Walls . NA | | | | · · · · · · · · · · · · · · · · · · · |
| 63. | Estimated Remaining Life | ars | | | 64 20 |
| 64. | Operating Rating Peness | RIAN | LOAD | ING | |
| ,65. | Approach Alignment | | | | 69 1/ |
| 66. | Inventory Rating PEDEST | RIPN | hoson | YG | |
| AD | PRAISAL | | | | |
| AU | KAIJAL | | *) / | | Deficiencies |
| 67. | Structural Condition . NRENS . PRID | ting . | | | |
| 2 | | olt. SA | Activ. DI | n. m/55 | in a |
| | | | | | |
| 68. | Deck Geometry | | | N.A - | M |
| | | | | | |
| 69. | Underclearances-Vert. & Lateral $y = 5.1.3$ | m; Lat | esal r | inducleo | runa width 126 |
| | equals. recommended (PAth | D (1.9.9 | 2.6.)5 | ection a | is dth |
| 70. | Safe Load Capacity | | | | |
| | | | | | |
| 71. | Waterway Adequacy | | | | . N.4 |
| | | | | | |
| 72. | Approach Alignment | | | | N.A |
| | | | | | |
| | POSED IMPROVEMENTS | | | | |
| 73. | Year Needed | 3.10. | | | |
| | Completed | | | | |
| ж | Describe | | | | |
| 74. | Type of Service Pedesta | sign | | | |
| 75. | Type of Work | bilita | tim | | 19 37 |
| 76. | Improvement Length (0.1 m) | 14 | | | 22000522 |
| 77. | Design Loading $\ldots \ldots \ldots \ldots $ | edestr | 1203 | | |
| | HARRIS | | | | |

| | | ~ | | |
|--------|--|-----------|--|--------------|
| / | 6 (81.11.51 | 0 | Page 4 of 4 | 4 3 2 1 |
| 78. | Roadway Width (0.01 m) | | | 0016 |
| 79. | Number of Lanes | | | 33 O D |
| 80, | ADT | | 35 00 | 0000 |
| | | | | |
| 82. | Year of Proposed Adjacent Roadway Improvements | | | 43 0 0 |
| 83. | Prop. Adj. Rdwy Improvements-Type | | | 45 0 |
| | | | | 4 |
| | ST OF IMPROVEMENTS | | A6 4 | * |
| 84. | Total (dollars) \$ | • • • • • | 9 | 6604 |
| SUM | IMARY OF IMPROVEMENT COSTS | | | |
| 85. | Preliminary Engineering (Dollars) | | | 51 |
| 86. | Demolition Cost (Dollars) | | | 54 |
| 87. | Substructure (Dollars) | | | |
| 88. | Superstructure (Dollars) | | . 62 | * |
| 89. | Priority Letter | | | |
| 90. | Rehabilitate Existing Structure (Dollars) | | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1 | 68 [; |
| 91. | Detour and Traffic Maintenance (Dollars) | | • • • • • | ?1 * |
| 92. | Approaches (Dollars) | • • • • | | 74 |
| | Approach Embankment (Dollars) | | | |
| | Approach Pavement (Dollars) | | | |
| а С | Approach Guardrail (Dollars) | | 04 T | |
| | (*Code to nearest thousand dollars) | | | |
| R | emarks (D) have been a have be | | | 1. |
| • | Rehabilitation should | inclu | de rep | lacing. |
| (m | vissing. bolts. & safety pins and | 120 | sainting | . . |
| • | | | 9 . | |
| | *********************************** | | | |
| | | | | |
| • | | | | |
| | ERSONNEL By Date / , | | Ву | Date |
| St | tructural Inspection S.M. Rowgers . 11/13/72 Condition A | nalysis . | K. Sheh | 3/29/73 |
| | | | | |
| | Leview of Field Data $k \cdot 5h^2 h \cdot . \cdot 3/\nu7/73 \cdot . \cdot IBM MT/SC f$ | | | |
| T | ransfer of Data K. She h | • • • • • | | |
| | | | | |

REMARKS-3 i, . Narrow for future (1990) ADT by , and for future GENERAL EVALUATION excellent This bridge is basically in structural condition. fair good DODT TTT DOOL The load carrying capacity is minimally adequate inadequate The recommended modifications will make it minimally adequate. The bridge should be replaced. routine inspection (every 2 years). frequent-inspection (every _____ months) to determine the cause of and remetics for existing defects. It requires frequent inspection (every months) to monitor abnornal and/or suspected deficiencies. routine maintenance. It requires minor repairs and routine maintenance. emergency repairs to eliminate danger to the public." urgent repairs to prevent further costly deterioration and/or the development of a dangerous condition. Non-urgent programmed repairs. The deck geometry is unsatisfactory. The travelled way is unsatisfactory for present requirements. The shoulders are unsatisfactory for present requirements. The travelled way is unsatisfactory for future (1990) () requirements. The shoulders are unsatisfactory for future (1990) () requirements. The approach alignment is minimally adequate, poor and represents a danget to the public.

| 1 | COMMONWEALTH OF PUERTO RICO HIGHWAY AUTHORITY IBM-370 AND IBM MT/SC ELECTRONIC DATA STORAGE Card No. | Page 1 of 1 1/137 Bridge No. | 0026 Road No. |
|-------|---|------------------------------------|---|
| -2 | ROUTE UNDER STRUCTURE | | Km. No. <u>4.07</u> |
| 11 | | Code Positi | ions |
| IDI | INTIFICATION 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 | 10 9 8 7 6 | 5 4 3 2 1 |
| 5. | Inventory Route, P.R. 2.6 | | |
| | Features Intersected Podestoian walkway C. Pala | | the second se |
| | | c) 0 | |
| 8. | Structure No | | 1/37/ |
| 10. | Inventory Route, Minimum Vertical Clearance (0.01 m) | | 0519 |
| 11. | Kilometer Point (0.01 km) | | 00407 |
| 12. | Road Section Number (DOD) 6 2 | | 00626 |
| 13. | Bridge Description $. NOHODH NSTS P$ | | 64 KK |
| 14. | 1 00 | 6 | 60/09 |
| 15. | Defense Section Length (miles) (0.1 mile) / | | |
| 19. | By Pass, Detour Length (Nearest mile) . Mar.g. 1001. road | | |
| CL | ASSIFICATION | | |
| 10.14 | Fed. Aid System . Other . F.e. derg! . Aid, . primary | inhan | 25 04 |
| 24. | St f | | |
| | Functional | | |
| 20. | Functional | Con | |
| STI | RUCTURE DATA | | |
| 29. | ADT - Inventory Route | 10 0 | 36550 |
| 30. | Year | | 16. 70 |
| 47. | Total Horizontal Clearance (0.01 m) 4. 10.61 | 3.0 | 18.073 |
| | | | |
| | | | |

Appendix E Inspection by PRHTA of PB 1307

E.1 May 15, 2017

| BRIDGE: / | | | | | | | | | | |
|--|---|--|-------------------------------|-------------------|--------|--------------|----------------------------|---------|---------------------------------|---|
| TEAM LEAD | ER: Ange | 5 Lor | pet | | | | | | | ÷ |
| INSP. DATE: | 15 mg | yo 20 | 17 | | | | | | | |
| 1÷ | n Type and D | | | | | | | | | |
| NBI | Тур | e | Performed? (Yes / No / NA) | Freq (MONT | • | Previo (M | ous Insp. D/ ONTH/YEAR) | | lext Insp. DATE (MONTH/YEAR) | |
| ITEM 90 | Routine Ins | pection | 405 | | - | Jan | ~ 2014 | 1 | | |
| ITEM 93 A | FC Inspectio | on | | | | | - | - | | |
| ITEM 93 B | Underwate | r Insp. | | | 8 | | | 14 | | |
| ITEM 93 C | Other: | | | | | 2. | | | | |
| Previous Ins Current Insp | | Item 58 | Item 59 5 5 | Item 60 5 5 | Iten | n 61 | Item 62 | Item 1: | 13 | |
| Other Check | s: (Y, N, NA) | | | Re | view C | omme | ents: | | | |
| AASHTO (Smart Flag fire damag Channel P FC & Unde Asphalt Ov Drawings Photos | cal (items 11 Core's & NBI is (scour, ste e, etc) rofile/Clearar erwater Mem verlay Thickn ding & Team Lead | CD consi el plate, nce Table bers Tabl ess | es | i, | 3 | | | | | |
| | \sim | 11 | 11 | | | | | | | |

| Bridge Key: 013071 Agency ID: 013071 Sufficiency Rating: -1.0 Bridge Key: DENTIFICATION 013071 INSPECTION INSPECTION Bit 1: 72 Plands Bits: Dente Mits 6: 013071 INSPECTION INSPECTION Bit 1: 72 Plands Bits: Dente Mits 6: 013071 INSPECTION INSPECTION Bit 2: Dente Mits 6: 013071 Name State INSPECTION Inspection: 001307 Bit 2: Dente Mits 6: 013071 Name State Inspection: 001307 Bit 2: Dente Mits 6: Mits 2: Name State Mits 2: 001307 Bit 2: Dente Mits 6: Mits 2: Name State Mits 2: Name State Name State Bit 2: Dente Mits 6: Mits 2: Dente Mits 9: Name State Name State Name State Bit 2: Dente Mits 9: Dente Mits 9: Dente Mits 9: Dente Mits 9: Name State | Structure | nventory and Apprais | Bridge Mainter. | |
|---|--|---|---|---|
| Bite 1: 22 Punde Rev Size Ham 5:: 013071 Field F Garliel 7: P123 Lookin 1:: 24 Journals: Size Size Size 717 Nath Impection::: 001507 Field F Garliel 7: P123 Lookin 2:: Field Fie | | | | |
| Classical interaction Classical interac | State 1: 72 Puerto Rico Struc Num 8: 013/ Facility Canied 7: PR 25 Location 9: BALDORI CASTRO CASTRO CASTRO Rite (On/Under)SA: One Route Under Rite. Signing Pretix 5E: 2 Level of Service 5C: 1 Mainline Rite. Number 5D: 00 Directional Suffix 5E: 0 N/A (NBI) % Responsibility : N/A SHID District 2: Unknown County Code 3: Sa | OTY DE AVE. FC Frequency 92A: NA FO Inspire 2 U.S. Numbered UW Frequency 92B: NA UW Inspire 003 SI Frequency 92C: NA SI Date: Numbered UW Frequency 92C: NA SI Date: Name Element Frequency: 24 months Element | on Date 90: 5/15/2017 Noxt Inspection: 05/15/ Action Date 938: NA Next FD Inspection: NA Action Date 938: NA Next UW Inspection: NA 93C: NA Next SI: NA | |
| Bited DB CONDITION Steel Deck 59: 5 Fair Suppr 59: 5 Fair Sub 00: 5 Fair Deck Type 107: Unknown (NB) Unknown (NB) Unknown (NB) Washing Sturface 108A: Unknown (NB) Unknown (NB) Deck Protection 1080: Unknown (NB) Unknown (NB) AGE AND SERVICE Unknown (NB) Unknown (NB) Year Build 27: 1995 Year Recombucted 100: Unknown (NB) Deck Protection 1080: Unknown (NB) Unknown (NB) Insee on 284: 1 High Mary Englin Load 31: 1 Podeskina Posting 70: Unknown (NB) Insee on 284: 1 High Mary Englin Load 31: 1 Podeskina Posting 70: Unknown (NB) Bidge Rail 364: N NA or not required Approach Rail 360: N NA or not required Approach Rail 360: N NA or not required Bidge Rail 364: 1 Tom Structure Length 49: 50 25 m Englin Load 32: 2 m Unknown (NB) Dock Kasil Structure Length 49: 50 25 m Cubbiolewik Weth L 504: GeeDMETRIC DATA Englin Coat 32: Unknown (NB) Dock Geamety 68: Unknown (NB) Dock Geamety 68: Unknown (NB) Dick Avar Structure Length 49: 50 25 m Gubbiolewik Weth 1 Koth 30: 10 km woth 32: Unknown (NB) | Feature Intercented 6: PEDESTRIAN WALKWAY Latitude 16: 18d 27:18" Longitude 17: 06 Berder Bridge Code 98: Unknown (P) Berder Bridge Number 99: Unknown STRUCTURE TYPE AND MATERIAL | C Defense Highwey 100: 0 Not a STRAI Direction of Traffic 102: 0 Not nwy tarff Highway System 104: 0 Not on NHS Toll Facility 20: 3 On free toad Historical Significance 37: Owner 22: | INET Jwy Parallel Structure 101: No bridge exists c Temporary Structure 103: Unknown (NBI) NBIS Length 112: Unknown (NBI) Fundional Clase 26: 12 Urban FwyfExpwy Unknown (NBI) -1 Unknown (P) | |
| Wearing Surface 108A: Unknown (NB) Mambrane 108B: Unknown (NB) Deck Protection 108C: Unknown (NB) AGEE AND SERVICE Year Built 27: 1905 Year Built 27: 1905 Year Built 27: 1905 Year Reconstructed 106: Unknown (NB) Design Lead 31: 7 Pedestrian Year Garvice on 42A: 3 Pedestrian-bioyle Type of Sarvice on 42A: 1 Refword Birdge Rail 36A: N NA or not required Approach Rail Ends 36D: N NA or not required Cubbstowk Weah Lt Sol: Cubrolidewaik Weah R 50D; Unknown (NBI) Desk Geametry 8: Unknown (NBI) Unknown Vertical Destance Sole: 5 22 5 m Cubrolidewaik Weah Did Coll 52: Approach Relemed 53: Unknown (NBI) View Area: Ske. X4: 1.00 * Ske. Sol 2. Deck Area: Sker Area: Median 33: <t< td=""><td></td><td>14</td><td>r 59: S Fair Sub 80: S Fair</td></t<> | | 14 | r 59: S Fair Sub 80: S Fair | |
| Import of Service on 42A: 3 Pedestrian-biologie APPRAISAL APPRAISAL Type of Service under 42B: 1 Highway Lanes on 28A: Unknown Lanes under 42B: 3 Detour Lengin 19: 0.0 km APPRAISAL Detour Lengin 19: 0.0 km NVA or not required Approach Rail 36C: NVA or not required Approach Rail 20A: Truck ADT 198: 5% Year of ADT 30: 2002 GEOMETRIC DATA Length Max Span 48: 21.70 m Structure Length 49: 50.25 m Outbiosonk Width L 50A: Cub/Eldewalk Width R 50B; Outbiosonk Width 0.00 to Dut 52: Approach Roadway Width 32: 29.30 m Median 33: Unknown (NEI) Median 33: Unknown (NEI) PROPOSED IMPROVEMENTS View 34: -1.00 * Structure Flaned 35: Unknown (NEI) Median 33: Unknown (NEI) Median 33: Unknown (NEI) Minimum Vertical Clearance Reference 54A: H Hwy beneath struct Mark Garance Reference 84A: H Hwy beneath struct Minimum Vertical Underclearance Reference 84A: H Hwy beneath struct <th co<="" td=""><td>Wearing Surface 108A: Unknown (NBI) Mambrane 108B: Unknown (NBI) Deck Protection 108C: Unknown (NBI) AGE AND SERVICE</td><td>Inventory Rating Method 65: Unknown (Inventory Rating 66: MS-6 Destan Load 31: 7 Pedestrian Posting status 41: A Open, no res</td><td>NBI) Coperating Rating Method 63: Unknown (NBI) Operating Rating 64: MS-0.6 Posting 70: Unknown (NBI)</td></th> | <td>Wearing Surface 108A: Unknown (NBI) Mambrane 108B: Unknown (NBI) Deck Protection 108C: Unknown (NBI) AGE AND SERVICE</td> <td>Inventory Rating Method 65: Unknown (Inventory Rating 66: MS-6 Destan Load 31: 7 Pedestrian Posting status 41: A Open, no res</td> <td>NBI) Coperating Rating Method 63: Unknown (NBI) Operating Rating 64: MS-0.6 Posting 70: Unknown (NBI)</td> | Wearing Surface 108A: Unknown (NBI) Mambrane 108B: Unknown (NBI) Deck Protection 108C: Unknown (NBI) AGE AND SERVICE | Inventory Rating Method 65: Unknown (Inventory Rating 66: MS-6 Destan Load 31: 7 Pedestrian Posting status 41: A Open, no res | NBI) Coperating Rating Method 63: Unknown (NBI) Operating Rating 64: MS-0.6 Posting 70: Unknown (NBI) |
| Curb/Steff Wath L SGA: Curb/Steff R Sele; Scour Cititical 113: N Not Over Watanway Width Curb to Curb 51: 1.60 m Width Out to Dut 52: Appreach Roadway Width 32: 29.30 m Median 33: Unknown (NBI) Width Curb to Curb 51: 1.60 m Width Out to Dut 52: PROPOSED IMPROVEMENTS Deck Area: Birlingin Cost 34: NA Type of Wath 75: Unknown (NBI) Stew 34: -1.00 " Structure Flaned 35: Unknown (NBI) Foldardway Cost 95: Unknown Longth of Improvement 76: Minimum Vertical Clearance Neterence S4A: H Hwy beneath struct Total Cost 96: Unknown Year of Future ADT 114: 92,703 Year of Cost Eddimate 97: Unknown Year of Future ADT 116: 2020 Minimum Vertical Underclearance Reference R 56A: H Hwy beneath struct Navigation Comprol 38: Unknown (NBI) Minimum Lateral Underclearance R 55S: 01.70 m Vertical Clearance 39: Horizontal Clearance 40: | Itype of Service on 42A: 3 Pedestrian-bicyte Type of Service under 42B: 1 Highway Lanes on 28A: Unknown Lanes Under 28B: 8 Detour Leng ADT 29: 65,300 Truck ADT 109; 5 % Year of ADT GEOMETRIC DATA | gfin 19: 0,0 kra 130: 2002 Str. Evaluation 67: Unknown (NBI) Underclearance, Vertical and Horfzontal 6 | ed Approach Rail 36C: N N/A or not requi ed Approach Rail Ends 36D; N N/A or not requi Dock Geometry 58: Unknown (NSI) 9: Unknown (NSI) | |
| Minimum Vertical Underdearance \$48: 05.21 m NAVIGATION DATA Minimum Leteral Underdearance Reterence R 55A: Hillwy beneatb struct Navigation Control \$5: Unit Novem (NBI) Minimum Leteral Underdearance R 55: 01.70 m Vertical Clearance \$9: Horizontal Clearance 40: | Curb/Sidwk Wath L SGA: Curb/Eidewalk Width R 508; Width Curb to Curb 51: 1.60 m. Width Out to Dut 52: Approach Roadway Width 32: 29.30 m. Median 33; Wirshoulders) Dack Area: Sicew 34: -1.00 * Structure Flared 35: Unknown (NBI) Minimum Vertical Clearance Over Bridge 53; | Unknown (NBI) Eridge Cost 84: Roadway Cost 95, Unkn Total Cost 96; Unknown | Iterway SED IMPROVEMENTS NA Type of Work 75: Unkriewn (P) ewn Length of Improvement 76: own Future ADT 114: 92,703 | |
| | Minimum Vertical Underclearance 548: 05.21 m Minimum Lateral Underclearance Reference R 55A: H Hwy beneatb | struct Navigation Control 38: _ Unknown | (NBI) Horizentel Glearande 40: | |
| | NSP001_Inspection_SIA_Metric | | Wed 5/31/2017 13:22 Page 1 c | |

SEWIEN OFFICE INFRASTRUCTURE DIRECTORY **PRHTA** Team Leader: Angel T. López Bridge, Inspector: Angel T. López Bridge Evaluator: Manuel Coll Assistants: José R. Vázquez Driver: José A. Ortíz Inspection date: _ May, 15, 2017 Weather Conditions: Sunny Amount of Time on Inspection: 1.5 Hours Equipment: X Bus or Van _ Underwater _ Ladders _ Snooper X Camera _ Boat · _ Other: Bridge Number: 1307 Road on Structure: N/A Number or Name: _ Km. Road Under Structure: State Highway Number or Name: _26 Km. _4.6 Ident. Plaque: No Num. 36-Traffic Safety Features: Bridge railings: not applicable or safety not reuired Transitions: not applicable or safety not reuired Approach Guardrail: not applicable or safety not reuired Approach Guardrail Ends: not applicable or safety not reuired COMMENTS AND/OR RECOMMENDATIONS: (50.25mts largo) 10/ mey 2017 Inspection by: Angel T. López Revised and Approved by: Manuel Coll Bridge Inspector Bridge Evaluator BR-1307 1

| - 27 | | | | BRI | | | RY MAN UCTURE PRHT/ | DIREC | | A state to a state | | | | |
|------|---------------------|-------------|-----------------|------------------------|----------|-------------|---------------------------|-------------|----------|--------------------|------------|------------|-----------|----|
| | 58. DECK | | | | | | | | | | | | | |
| | 58.1 Wearin | ng Surfac | e: Mat | erial: St | eel | Cor | ndition: 5 | | Thickn | iess | cm. | | | |
| | Deterioratio | on: 50 to 7 | 75 % | Dra | ainage: | Adequate | • | Ponding | : No | | Safety: | Yes | | |
| | 58.2 Slab o | r Plate: | Vaterial | : Steel | | Cor | ndition: 5 | | | | | | | |
| | Cracking: N | lone | | | | | | | | | | | | |
| | Spalling: T | op: No | Bot | tom: No | D | | | | | | | | | 2. |
| | Scaling: T | op: No | Bot | tom: No | 5 | | | | | | | | | |
| | Efflorescen | ice: No | Exu | dation: | No R | ust Stains | : Yes | Corrosic | on: Sev | /ere | | | | |
| | 58.3 Mover | ment: | Dec | k to bac | ckwall: | cm. | Deck | to approac | h slab: | : 6 | cm. | | | |
| | | | | | | | | | | | | | | |
| | | Material | Cond. Rating | Height Loss (cm) | Joints | Drainage | Alignment | Corrosion | Paint | Safety | Cracking | Spalling | Scaling | |
| | 58.4 Curb | N/A | | | | | | - | - | | | - | | |
| • | 58.5 Median 58.6 | N/A | | | | | | | | | | | | |
| | Sidewalks | N/A | | | | | - | | -, | | | | | |
| | 58.7 Parapets | N/A | | | | | - | | | | | | | |
| | 58.8 Railing | Steel | 5 | | Fair | | Fair | Severe | Poor | Yes | | | | |
| | 58.9 Lightir | ng Standa | ards: Ma | iterial: N | I/A C | ondition: N | N/A | Functior | ning: N | /A | | | | |
| | 58.10 Utiliti | es: | | | | | | | | | | | | |
| | Type: | | Size | e: | | Saf | ety: | | | | | | | |
| | Туре: | | Size | ∋: | | | ety: _ | | | | | | | |
| | Туре: | | Size | э: | | Saf | ety: _ | | | | | | | |
| | 58.11 Joint | s: Con | dition: N | I/A | | | | | | | | | 12 | |
| | Type: N/A | Fun | ctioning | : N/A | Le | eaking: N/ | A Crack | ing: N | Spallin | ig: N | Armor: | No | | |
| | Type: N/A | Fun | ctioning | : N/A | Le | eakiņg: N/ | A Crack | ing: N | Spallin | ig: N | Armor: | No | | |
| | 58.12 Drair | ns and Sc | uppers: | | | | | | | | | | | |
| | Material: N | one Con | dition: N | I Fui | nctionin | ig: N/A | | | | | | | | |
| | Comments | | | | | | | | | | | | | |
| | 58.1- Supe | rficie de a | acero co | n corros | sión se | vera, pérd | lidas leves | de seccioi | nes y le | eves pe | rforacione | es en los | laterales | de |
| | la superficie | e de las t | olas. Va | rias tola | as estár | n sueltas o | de sus pun | tos de solo | ladura, | , grande | es seccion | es fueroi | n reparad | as |
| | aunque hay | | | | | | s huecos p | equeños p | or corr | rosión y | secciones | s de las c | le tolas | |
| | soldadas q | ue dejan | un liger | o huerco | o entre | ellas. | | | | | | | | |
| | 58.8- Corro | sión seve | era con | mallas o | de prote | ección, va | rias de ella | is están si | ueltas | de sus | ountos de | apollo. E | n el área | de |
| | las escalera | as hay va | rios ver | ticales o | que est | án sueltos | s de sus so | ldaduras. | | | | | | |
| | 2 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
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| | BR-1307 | | | | | | | | | | ÷ | | 11 | 2 |
| | | | | | | | | | | | | | | |

| | | | BI | RIDGE IN | FRAST | ORY M RUCTU PRH | RE DIF | EMENT | DFFIC Y |)E | | |
|-----------------------------------|--|--|--|---|-----------------------|-------------------------------|---|--------------------------------------|--|-------------------|----------------------|----------------------|
| 59 | SUPER | STRUCTUR | RE | | | | | | | h bis | | |
| 59. | | ng Devices: ition: 5 | Type: Fix | ed (| Out of Plu | mb: No | Pa | int: None | | | | |
| 59. | 2 Bridge | e seats, pede | stal, grout | pads, a | butments | or pier s | eat whe | re beams l | near di | ectiv on co | NDC | |
| | | ition: 5 | Cracking: | | | | | alling: Non | | | inc. | |
| | Crus | hing: No | j. | | | | Op | anng. Non | e 00a | ing. None | | |
| 59 | | peams: N/A | Type: N/A | | | | | | | | | |
| 00. | | ition: N | | | 1: None | - | | | | | | |
| 50 | | ete: N/A | | 0512.4 (A. (A. A. A | 1: None | Ра | nt: None | e | | | | |
| 59. | | | Type: N/A | | | | | | | | | |
| | | | Cracking: | * | | | Spa | alling: Non | | 19 - 1 | | |
| 59, | 5 Truss: | Bailey Pede | strian P | aint: Po | or Co | prrosion: | Severe | Mem | pers: S | tringers Co | ondition: | 5 |
| 59. | 6 Draina | ge: Type: | С | onditior | n:N Fu | nctioning | : No | | | | | |
| 59. | 7 Hinges | : Condition: | N F | unctioni | ng: N/A | Мо | vement: | N/A | | | 4 | |
| 59. | 8 Deflec | tion: Normal | I | | | | | | | | 1 | |
| | | | | | | | | | | | | |
| | 9 Vibrati | ons: Minima | | | | | | | | | | |
| 59, | | ons: Minima TRUCTURE: | l | | | | | | | | | |
| 59, | | | l | Cond. | | | r | 1 | | | | |
| 59. | | | l | Cond. Rating | Cracking | Spalling | Scaling | Corrosion | Paint | Movement | Erosion | Underminin |
| 59. 60. | | TRUCTURE: Wingwalls | | | Cracking | Spalling — | Scaling | Corrosion | Paint | Movement | Erosion | Underminin |
| 59. 60. | 0 SUBS | TRUCTURE | I Material | Rating | | | | Corrosion - | | | | |
| 59. 60. | 0 SUBS 60.1.1 | TRUCTURE: Wingwalls Breast- | Material | Rating N | _ | - | - | Corrosion | | | | - |
| 59. 60. | 0 SUBS 60.1.1 60.1.2 | Wingwalls Breast- Backwall | Material N/A N/A | Rating N N | - | - | - | Corrosion | | | - | |
| Abutments Abutments | 0 SUBS 60.1.1 60.1.2 60.1.3 | Wingwalls Breast- Backwall Footing | Material N/A N/A N/A | Rating N N N | | - | | - | - | | | |
| Abutments 60. | 0 SUBS 60.1.1 60.1.2 60.1.3 60.1.4 | Wingwalls Breast- Backwall Footing Piles | Material N/A N/A N/A N/A | Rating N N N | | - | | | - | | | |
| Abutments 60. | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 | Wingwalls Breast- Backwall Footing Piles Caps | Material N/A N/A N/A N/A Steel | Rating N N N S | | | | Moderate | Poor | | No | No |
| Abutments 60. | 0 SUBS 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 | Wingwalls Breast- Backwall Footing Piles Caps Bracing | Material N/A N/A N/A N/A Steel Steel | Rating N N N 5 5 | | | | | Poor Poor | | No No | No No |
| Abutments 60. | 0 SUBS 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 | Wingwalls Breast- Backwall Footing Piles Caps Bracing Columns | Material N/A N/A N/A N/A Steel Steel Steel | Rating N N N 5 5 5 5 | | | | | Poor Poor Poor | | | |
| Bents Abutments Bents 0.09 | 0 SUBS 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 | Wingwalls Breast- Backwall Footing Piles Caps Bracing Columns Footing | Material N/A N/A N/A N/A Steel Steel Steel Steel Concrete | Rating N N N 5 5 5 5 6 | | | L | | Poor Poor Poor | | | |
| Bents Abutments Bents | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 60.2.5 | Vingwalls Breast- Backwall Footing Piles Caps Bracing Columns Footing Piles | Material N/A N/A N/A Steel Steel Steel Steel Concrete N/A | Rating N N S 5 5 5 6 N | F | Small | L | Moderate Moderate Moderate | Poor Poor Poor Poor | | | |
| Bents Abutments Bents | 0 SUBS 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 60.2.5 60.3.1 | Vingwalls Breast- Backwall Footing Piles Caps Bracing Columns Footing Piles Caps | Material N/A N/A N/A N/A Steel Steel Steel Steel Concrete N/A N/A | Rating N N S 5 5 5 6 N N | | | L | Moderate Moderate | Poor Poor Poor Poor | | | |
| Bents Bents Bents Abutments 00.00 | 0 SUBS 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 60.2.5 60.3.1 60.3.2 | Vingwalls Breast- Backwall Footing Piles Caps Bracing Columns Footing Piles Caps Bracing Bracing | Material N/A N/A N/A N/A Steel Steel Steel Steel Concrete N/A N/A N/A | Rating N N N S 5 5 5 6 N N N N | | | L | Moderate Moderate Moderate | Poor Poor Poor | | | |
| Bents or Non File Abutments Bents | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 60.3.1 60.3.2 60.3.3 | Vingwalls Breast- Backwall Footing Piles Caps Bracing Columns Footing Piles Caps Bracing Piles | Material N/A N/A N/A N/A Steel Steel Steel Steel Concrete N/A N/A N/A N/A | Rating N N S 5 5 5 6 N N N N N N | | Small | L | Moderate Moderate Moderate | Poor Poor Poor | | | |

Comments:

59.5- Corrosión moderada y severa en todos los miembros inferiores de la estructura. Hay perforaciones con pérdida de secciones. Las escaleras tienen corrosión severa y perforaciones con pérdidas de secciones, Hay "railings" que tienen corrosión severa en los anclajes ó bases, tienen movimientos laterales.

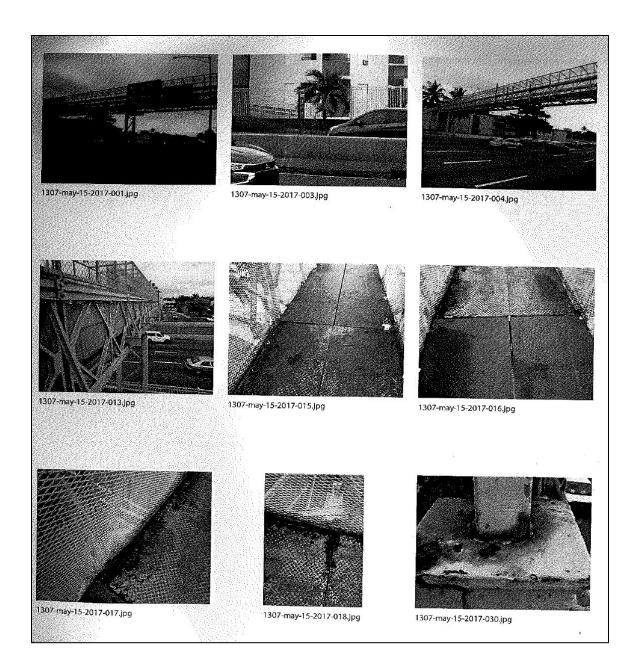
BR-1307

3

,

| 61.4 Fender S 61.5 Rip Rap | cour: N/A ent Erosion: N ve Device System ces, Jetties | | Condition: 1 | | Condition | | | | | |
|--|--|---------------------------------------|-----------------|--------------|--------------|----------|-----------|------------|-----------|-------|
| 61.1 Channel So 61.2 Embankme 61.3 Protectiv 61.4 Fender S 61.5 Rip Rap 61.6 Spur Dik 61.7 Obstruction | cour: N/A ent Erosion: N ve Device System ces, Jetties | N/A | Mate | | Condition | | | | | |
| 61.2 Embankme 61.3 Protectiv 61.4 Fender S 61.5 Rip Rap 61.6 Spur Dik 61.7 Obstruction | ent Erosion: 1 | | | | Condition | 5 | | | | |
| 61.3 Protectiv 61.4 Fender S 61.5 Rip Rap 61.6 Spur Dik 61.7 Obstruction | ve Device System | | | | Condition | | | | | |
| 61.4 Fender S 61.5 Rip Rap 61.6 Spur Dik 61.7 Obstruction | System | Туре | | | Condition | | | | | |
| 61.4 Fender S 61.5 Rip Rap 61.6 Spur Dik 61.7 Obstruction | System | Туре | | | Condition | | | | | a 1 |
| 61.4 Fender S 61.5 Rip Rap 61.6 Spur Dik 61.7 Obstruction | System | Туре | | | | 0.00% 8. | | | | |
| 61.4 Fender \$ 61.5 Rip Rap 61.6 Spur Dik 61.7 Obstruction | System | | 19/ | | Rating N | Function | ing | | | |
| 61.5 Rip Rap 61.6 Spur Dik 61.7 Obstruction | kes, Jetties | | N/ | | N | | | | | |
| 61.7 Obstruction | kes, Jetties | | N/ | | N | | | | | |
| 61.7 Obstruction | 1990 - 19 - 19 - 19 - 19 - 19 - 19 - 19 | | N/ | | N | | | | | |
| | n: N/A | 0.5 8.5805 | | | | | | | | |
| Comments: | | ay anobi ou a | cture: | N/A | if yes | explain: | | | | |
| | | , | cture: | N/A | it yes | explain. | ±. | | | |
| 62. CULVERT A | | IING WALL | | | | | | | | 2 |
| | Material Cor | | Functioning | Cracking | Spalling | Scaling | Corrosion | Settlement | Alignment | Scour |
| 2.1 Barrel | Material Cor N/A | IING WALL | Functioning | Cracking | Spalling | Scaling | | - | | |
| 2.1 Barrel | Material Cor N/A N/A | IING WALL ndition Rating_ N | Functioning | Cracking | Spalling | Scaling | - | - | | |
| 62. CULVERT A 62.1 Barrel 62.2 Head Walls 52.3 Cut-off wall 52.4 Retaining wall | Material Cor N/A | IING WALL ndition Rating N N | Functioning | Cracking | Spalling | Scaling | | - | | |

| kolegi A | BRIDGE IVENTORY MANAGEMENT OFFICE INFRASTRUCTURE DIRECTORY PRHTA | |
|-------------|--|------|
| | 71. WATER ADEQUACY: N/A N/A | |
| | 72. APPROACH ROADWAY | |
| | 72.1 Alignment: 6 | |
| | 72.2 Slab or Pavement Condition: N Material: Other | |
| | Cracking: No Spalling: Small Scaling: None Uneven: No | |
| | Rough: No Settlement: No Movement: Approach slab-backwall: No Breaking up: No | |
| | Excessive deformation: No | |
| | Safety: Hazardous: No | |
| | Drainage: Inadequate: No | |
| | Movement: Pavement-approach slab: No | - Al |
| | Embankment: Condition: N Functioning: No Erosion: No | |
| | Construction: Flimsy: No Integrity impaired: No | |
| 7 | 72.3 Undesirable Impact: No | |
| | 72.4 Joints: No Type: None Inadequate: N/A Satisfactory Alignment: N/A | |
| | 72.5 Guardrail Type: None Material: N/A Functioning: N/A | |
| | Condition: N Alignment Horizontal: N/A Vertical: N/A | |
| | Joints Functioning: N/A Safety Securely Attached: N/A Pedestrian Hazards: N/A | |
| | Comments: | |
| | 90. INSPECTION DATE:May, 15, 2017 93. CRITICAL FEATURE INSPECTION DATE Fracture Critical: Underwater: Other Special Inspection: 102. DIRECTION OF TRAFFIC: Highway traffic not carried 106. YEAR RECONSTRUCTED: 107. DECK STRUCTURE TYPE: Steel Plate (includes orthotropic) 108. WEARING SURFACE/PROTECTIVE SYSTEM Type wearing surface: Steel Type Membrane: None Deck protection: None 111. PIER OR ABUTMENT PROTECTION (FOR NAVIGATION): N/A 113. SCOUR CRITICAL BRIDGES: N 116. MINUMUM NAVIGATION VERTICAL CLEARANCE: AUXILIARY ITEMS Signs: Type: Height Limits 18'-6" Material: Alum. Condition: 7 Type: N/A | |
| | | |
| | BR-1307 | 5 |



E.2 January 24, 2014

| | | INSPE | CTION REPOR | | RY | & QC SI | HEET | | |
|---------------|--|--|--|----------------|------|---------|--------------|------|----------------------------------|
| BRIDGE: | 1307 (| Ped | istrian) | \leftarrow | | | | | |
| TEAM LEAD | ER: Eng. Artu | ro Cácere | es Febus | | | | | | |
| INSP. DATE: | 1/2 | 4/14 | Ĺ | | | | | | |
| 1. Inspection | n Type and D | ates: | | | | | | | |
| NBI | Туре | | Performed? (Yes / No / NA) | Freq (MONTH | | | OUS INSP. DA | ATE | Next Insp. DATE (MONTH/YEAR)/ |
| ITEM 90 | Routine Ins | pection | yes | 24 | C | 6 | 30/20 | 28 | 1/24/10 |
| ITEM 93 A | FC Inspectio | | N | - | | | | | _ |
| ITEM 93 B | Underwate | r Insp. | N | | | | | | |
| ITEM 93 C | Other: | | N | - | | | • | | |
| 2. NBI Condi | tion Rating S | Summary | | | | | | | |
| | | Item 58 | | Item 60 | Ite | m 61 | ltem 62 | Item | 113 |
| Previous Ins | pection | 5 | - 5 | 5 | | N | N | Unk | Incurs |
| Current Insp | ection | 5 | - 5 | 5 | | N | N | N |) |
| Other Check | s: (Y, N, NA) | | | Rev | view | Comme | nts: | | |
| , | cal (items 11 Core's & NBI Is (scour, ste e, etc) rofile/Clearar erwater Memi verlay Thickn ding & Team Lead | 3 & 60) CD consi el plate, nce Table bers Table ess | es ure | | | | | | |
| Reviewer: | 17 | +0 +0 | <u> </u> | | | | | | |

| Bridge Key: 013071 Agenc | cy ID: 013071 Sufficiency Rating: -1.0 |
|---|--|
| IDENTIFICATION | INSPECTION |
| tate 1: 72 Puerto Rico Struc Num 8: 013071 acility Carried 7: PR 26 Location 9: BALDORIOTY DE | Frequency 91: 24 months Inspection Date 90: 1/24/2014 Next Inspection: 01/24/2 |
| CASTRO AVE. | FC Frequency 92A: NA FC Inspection Date 93A: 1/24/2014 Next FC Inspection: NA |
| te.(On/Under)5A: One Route Under Rte. Signing Prefix 5B: 3 State Hwy | UW Frequency 92B: NA UW Inspection Date 93B: NA Next UW Inspection: NA |
| avel of Service 5C: 1 Mainline Rte. Number 5D: 00026 | SI Frequency 92C. NA SI Date 93C: NA Next SI: NA |
| irectional Suffix 5E: 0 N/A (NBI) % Responsibility : NA | Element Frequency: 24 months Element Inspection Date: 01/01/1901 Next Elem. Insp. Due: 01/24/2 |
| HD District 2: SAN JUAN County Code 3: SAN JUAN lace Code 4: SAN JUAN ZONA Kilometer Post 11: 04.5 km | |
| URBANA | CLASSIFICATION |
| eature Intersected 6: PEDESTRIAN WALKWAY | Defense Highway 100: 0 Not a STRAHNET hwy Parallel Structure 101: No bridge exists Direction of Traffic 102: 0 Not hwy traffic Temporary Structure 103: Not Applicable (P) |
| atitude 16: 18d 27' 18" Longitude 17: 066d 03' 06" | Direction of Traffic 102: 0 Not hwy traffic Temporary Structure 103: Not Applicable (P) Highway System 104: 0 Not on NHS NBIS Length 112: Long Enough |
| order Bridge Code 98: Not Applicable (P) | Toll Facility 20: 3 On free road Functional Class 26: 12 Urban Fwy/Expwy |
| order Bridge Number 99: Unknown | Historical Significance 37: 5 Not eligible for NRHP |
| STRUCTURE TYPE AND MATERIALS | Owner 22: 01 State Highway Agency Custodian 21: 01 State Highway Agency |
| umber of Approach Spans 48: -1 Number of Spans Main Unit 45: 2 Iain Span Material/Design 43A/B: | |
| Steel 09 | CONDITION |
| | Deck 58: 5 Fair Super 59: 5 Fair Sub 60: 5 Fair Culvert 62: N N/A (NBI) Channel/Channel Protection 61: N N/A (NBI) |
| | |
| Deck Type 107: 5 Steel Plate | LOAD RATING AND POSTING |
| Wearing Surface 108A: 0 None Membrane 108B: 0 None | Inventory Rating Method 65: Unknown (NBI) Operating Rating Method 63:Unknown (NBI) |
| Deck Protection 108C: None | Inventory Rating 66: MS6 Operating Rating 64: MS-0.6 |
| | Design Load 31: 7 Pedestrian Posting 70: Unknown (NBI) |
| AGE AND SERVICE ear Built 27: 1968 Year Reconstructed 106: Unknown | Posting status 41: A Open, no restriction |
| per of Service on 42A: 3 Pedestrian-bicyle | |
| ppe of Service under 428: 1 Highway | APPRAISAL Bridge Rail 36A: N N/A or not required Approach Rail 36C: N N/A or not required |
| anes on 28A: Unknown Lanes Under 28B; 8 Detour Length 19: 0.0 km | Bridge Rail 36A: N N/A or not required Approach Rail 36C: N N/A or not required Transition 36B: N N/A or not required Approach Rail Ends 36D: N N/A or not required |
| DT 29: 65,300 Truck ADT 109: 5 % Year of ADT 30: 2000 | Str. Evaluation 67: Unknown (NBI) Deck Geometry 68: Unknown (NBI) |
| GEOMETRIC DATA | Underclearance, Vertical and Horizontal 69: Unknown (NBI) |
| ength Max Span 48: 21.70 m Structure Length 49: 43.01 m | Waterway Adequacy 71: N Not applicable Approach Alignment 72: 6 Equal Min Criteri Scour Critical 113: N Not Over Waterway |
| Curb/Sidewalk Width L 50A: 0.00 m Curb/Sidewalk Width R 50B: 0.00 m Vidth Curb to Curb 51: 1.62 m Width Out to Out 52: 2.82 m | accur chicar ha, hitter or a micrimy |
| xpproach Roadway Width 32: 29.30 m Median 33: Unknown (NBI) w/shoulders) | PROPOSED IMPROVEMENTS |
| leck Area: 121.29 m ^a | Bridge Cost 94: NA Type of Work 75: Unknown (P) |
| ikew 34: 0.00 * Structure Flared 35: 0 No flare | Roadway Cost 95: Unknown Length of Improvment 76: Total Cost 96; Unknown Future ADT 114: 92,703 |
| ilinimum Vertical Clearance Over Bridge 53. 99.99 m ilinimum Vertical Underclearance Reference 54A: H Hwy beneath struct | Year of Cost Estimate 97: Unknown Year of Future ADT 115: 2020 |
| immum Vertical Underclearance 548: H Hwy beneath struct immum Vertical Underclearance 548: 07.16 m | |
| Animum Lateral Underclearance Reference R 55A: H Hwy beneath struct | NAVIGATION DATA Navigation Control 38: N NA-no waterway |
| finimum Lateral Undrolearance R 55: 01.70 m | Vertical Clearance 39: 0.00 m Horizontal Clearance 40: 0.00 m |
| linimum Lateral Undrolearance L 56: 01.50 m | Pier Protection 111: 1 Not Required Lift Bridge Vertical Clearance 116: 0.00 m |
| Ininimum Lateral Undrclearance L 56: 01.50 m | Pier Protection 111: 1 Not Required Lift Bridge Vertical Clearance 116: 0.00 m |
| | |
| BRIDGE NOTES | |
| CULVERT | |
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| Bridge Inspect PAST INSPECTION Inspection Date: 01/24/2014 Inspector: -1 Pontis User Key: Pontis User Key: Scope: | TERALS OF STEEL PLATE. SOME STEEL PLATES ARE |
|--|--|
| Inspection Date: 01/24/2014 Type: 1 Regular NBI Inspector: -1 Pontis User Key: Po Scope: NBI: I Other: Element: Underwater: Fracture Critical: I INSPECTION NOTES SEVERE CORROSION, SECTION LOSS AND LIGHT HOLES AT LA LOOSE FROM WELDING SUPPORTS. SEVERE CORROSION AT LOOSE VERTICALS, SEVERE COOROSION, HOLES AND SECTION | TERALS OF STEEL PLATE. SOME STEEL PLATES ARE VIRE MESH AND LOOSE FROM WELDING SUPPORTS. |
| Inspector: -1 Pontis User Key: Pontis Us | TERALS OF STEEL PLATE. SOME STEEL PLATES ARE VIRE MESH AND LOOSE FROM WELDING SUPPORTS. |
| Scope: NBI: Other: Element: Underwater: Fracture Critical: INSPECTION NOTES SEVERE CORROSION, SECTION LOSS AND LIGHT HOLES AT LA LOOSE FROM WELDING SUPPORTS. SEVERE CORROSION AT LOOSE VERTICALS, SEVERE COOROSION, HOLES AND SECTION | TERALS OF STEEL PLATE. SOME STEEL PLATES ARE VIRE MESH AND LOOSE FROM WELDING SUPPORTS. |
| NBI: Other: Element: Underwater: Fracture Critical: INSPECTION NOTES INSPECTION NOTES SEVERE CORROSION, SECTION LOSS AND LIGHT HOLES AT L/LOOSE FROM WELDING SUPPORTS. SEVERE CORROSION AT LOOSE VERTICALS, SEVERE COOROSION, HOLES AND SECTION INSPECTION WELDING SUPPORTS. SEVERE CORROSION AT LOOSE VERTICALS, SEVERE COOROSION, HOLES AND SECTION | VIRE MESH AND LOOSE FROM WELDING SUPPORTS. |
| Underwater: Fracture Critical: INSPECTION NOTES SEVERE CORROSION, SECTION LOSS AND LIGHT HOLES AT LA LOOSE FROM WELDING SUPPORTS. SEVERE CORROSION AT LOOSE VERTICALS, SEVERE COOROSION, HOLES AND SECTION | VIRE MESH AND LOOSE FROM WELDING SUPPORTS. |
| INSPECTION NOTES SEVERE CORROSION, SECTION LOSS AND LIGHT HOLES AT LA LOOSE FROM WELDING SUPPORTS. SEVERE CORROSION AT LOOSE VERTICALS, SEVERE COOROSION, HOLES AND SECTIO | VIRE MESH AND LOOSE FROM WELDING SUPPORTS. |
| SEVERE CORROSION, SECTION LOSS AND LIGHT HOLES AT L/ LOOSE FROM WELDING SUPPORTS. SEVERE CORROSION AT LOOSE VERTICALS, SEVERE COOROSION, HOLES AND SECTIO | VIRE MESH AND LOOSE FROM WELDING SUPPORTS. |
| LOOSE FROM WELDING SUPPORTS. SEVERE CORROSION AT LOOSE VERTICALS, SEVERE COOROSION, HOLES AND SECTIC | VIRE MESH AND LOOSE FROM WELDING SUPPORTS. |
| INSPECTOR WORK CANDIDATES | |
| INSPECTOR WORK CANDIDATES | |
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| NSP002_Inspect_Report_Metric Agency ID: | 012071 Mon 2/24/2014 16:27: |

BRIDGE ENGINEERING OFFICE INFRASTRUCTURE DIRECTORY PRHTA

Team Leader: Arturo Cáceres Bridge Inspector: Angel T. López Bridge Evaluator: Arturo Cáceres Assistants: Juan C. Otero José R. Vázquez Driver: Gabriel Díaz Inspection date: _ Jan, 24, 2014 Weather Conditions: Sunny Amount of Time on Inspection: 1.5 Hours X Bus or Van _ Underwater _ Ladders Equipment: X Camera _ Snooper _ Boat _ Other: Bridge Number: 1307 Road on Structure: N/A Number or Name: Km. Road Under Structure: State Highway Number or Name: _26 Km. _4.5 Ident. Plaque: No Num. Traffic Safety Features: Bridge railings: not applicable or safety not reuired Transitions: not applicable or safety not reuired Approach Guardrail: not applicable or safety not reuired Approach Guardrail Ends: not applicable or safety not reuired COMMENTS AND/OR RECOMMENDATIONS:

Inspection by: Angel T. López Bridge Inspector

Revised and Approved by: Arturo Cáceres

Team Leader

| | | | | | | | DIREC | | | | | |
|--|-------------|-----------------|----------------|----------|-------------|------------|------------|----------|---------|-------------|------------|-----------|
| 58. DECK | | | | | | PRHT | 4 | | | | | |
| 58.1 Weari | ng Surfac | e: Ma | terial: St | eel | Cor | ndition: 5 | | Thickn | ess | cm. | | |
| Deterioratio | on: 50 to 1 | 75 % | Dra | ainage: | Adequate | | Ponding | : No | | Safety: | Yes | |
| 58.2 Slab c | or Plate: I | Material | | | | ndition: 5 | | | | | | |
| Cracking: N | None | | | | | | | | | | | |
| Spalling: T | | Bot | tom: No | 0 | | | | | | | | |
| Scaling: T | | | tom: No | | | | | | | | | |
| Efflorescen | 1250 | | | | ust Stains | Yes | Corrosic | n Sev | ere | | | |
| 58.3 Mover | | | ck to ba | | | | to approac | | 100000 | cm. | | |
| | Material | Cond. Rating | Height Loss | Joints | Drainage | Alignment | Corrosion | Paint | Safety | Cracking | Spalling | Scaling |
| 58.4 Curb | N/A | - | (cm) | | | - | | | - | | - | _ |
| 58.5 Median | N/A | | | | | | | | | | | |
| 58.6 Sidewalks | N/A | | | | - | - | | | | 100 | | |
| 58.7 Parapets | N/A | | | | | | | - | | | | - |
| | Steel | 5 | | Fair | | Fair | Severe | Poor | Yes | | | - |
| 58.9 Lightir 58.10 Utiliti Type: | | ards: Ma Siz | | I/A C | | ety: _ | Functior | ning: N | /A | | | |
| Type: | | Siz | e: | | | ety: _ | | | | | | |
| Type: | | Siz | e: | | | ety: _ | | | | | | |
| 58.11 Joint | ts: Con | dition: | N/A | | | | | | | | | |
| Type: N/A | Fun | ctioning | : N/A | Le | eaking: N// | A Crack | ing: N | Spallin | a: N | Armor: | No | |
| Type: N/A | | ctioning | 53 C | | eaking: N// | | - | Spallin | - | Armor: | No | |
| 58.12 Drain | | | | | sannig: thi | | | opunn | 9.11 | 7 411101. | | |
| Material: N | | | | octionir | ng: N/A | | | | | | | |
| Comments | | | | | | | | | | | | |
| 58.1- Supe | | acero co | on corro | sión se | vera nérd | idas leves | de seccio | nes v la | | rforacione | s en los | laterales |
| la superfici | | | | | | | | | | TUIACIONE | 5 61105 | laterales |
| 58.8- Corro | | | | | | | | | | o opollo I | -n ol órov | a da laa |
| | | | | | | | | sus p | untos a | e apolio. I | in el area | a de las |
| escaleras h | ay varios | vertica | iles que | estans | suellos de | SUS SOIDA | Juras. | | | | | |
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|----------------------|-----------|---------------------|------------|----------|-------------------|------------------|----------|-----------------|---------|-------------|------------|-------------|
| 59. | SUPER | STRUCTURE | Ξ | | | | | | | | | |
| 59.1 | Bearing | Devices: | Type: Fixe | d C | out of Plur | nb: No | Pair | nt: None | | | | |
| | Condit | | <i>.</i> | | | | | | | | | |
| 59 2 | | seats, pedes | tal grout | nads a | hutments | or pier se | eat when | e heams h | ear din | ectly on co | nc | |
| 00.2 | Condit | | Cracking: | | butmente | or pier or | | alling: None | | | 10. | |
| | | | Clacking. | NO | | | She | annig. Norie | - Otai | ing. None | | |
| | | ing: No | | | | | | | | | | |
| 59.3 | | eams: N/A | | | 2781 ¹ | | | | | | | |
| | Condi | tion: N | Co | orrosior | : None | Pai | nt: None | | | | | |
| 59.4 | Concre | ete: N/A | Type: N/A | | | | | | | | | |
| | Condi | tion: N | Cracking: | No | | | Spa | alling: None | e Scal | ing: None | | |
| 59.5 | Truss: | Bailey Pedes | strian Pa | aint: Po | or Co | prrosion: S | Severe | Memb | ers: St | tringers Co | ndition: { | ō |
| 59.6 | 5 Draina | ge: Type: | Co | ondition | N Fu | nctioning | : No | | | | | |
| 59.7 | ' Hinges | : Condition: I | N Fu | Inctioni | ng: N/A | Mo | vement: | N/A | | | | |
| 59.8 | B Deflect | tion: Normal | | | 0 | | | | | | | |
| 59 0 | Vibratio | ons: Minima | E | | | | | | | | | |
| | | RUCTURE: | | | | | | | | | | |
| | | | | Cond. | | | | | - | | | |
| | | | Material | Rating | Cracking | Spalling | Scaling | Corrosion | Paint | Movement | Erosion | Undermining |
| | 60.1.1 | Wingwalls | N/A | N | | | | | | | | |
| Abutments | 60.1.2 | Breast- Backwall | N/A | N | | ()) | | | | | - | |
| Abut | 60.1.3 | Footing | N/A | N | | | | | | | | |
| - | 60.1.4 | Piles | N/A | Ν | - | - | | - | | - | | - |
| e | 60.2.1 | Caps | Steel | 5 | | - | | Moderate | Poor | No | No | No |
| or Non Pile Bents | 60.2.2 | Bracing | Steel | 5 | | | | Moderate | Poor | No | No | No |
| or No | 60.2.3 | Columns | Steel | 5 | | | | Moderate | Poor | No | No | No |
| Piers o | 60.2.4 | Footing | Concrete | 6 | F | Small | L | | | No | No | No |
| Ē | 60.2.5 | Piles | N/A | N | | | (| - | | | | |
| ja so | 60.3.1 | Caps | N/A | N | | | | | | | | - |
| Rocker Bents | 60.3.2 | Bracing | N/A | N | | | | | | | | - |
| E m | 60.3.3 | Piles | N/A | N | | | | | | | 1.22 | |

60.4.3 Comments:

Pile Bents

60.4.1

60.4.2

Caps

Piles

Bracing

N/A

N/A

N/A

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Ν

Ν

59.5- Corrosión moderada y severa en todos los miembros inferiores de la estructura. Hay perforaciones con perdida de secciones. Las escaleras tienen corrosión severa y perforaciones con perdidas de secciones.

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BRIDGE ENGINEERING OFFICE INFRASTRUCTURE DIRECTORY PRHTA

61. CHANNEL AND PROTECTION

Condition: N

61.1 Channel Scour: N/A

61.2 Embankment Erosion: N/A

| | | Туре | Material | Condition Rating | Functioning |
|------|---------------------|------|----------|---------------------|-------------|
| 61.3 | Protective Device | | N/A | N | |
| 61.4 | Fender System | | N/A | N | |
| 61.5 | Rip Rap | | N/A | N | |
| 61.6 | Spur Dikes, Jetties | | N/A | N | |

61.7 Obstruction: N/A

61.8 Channel Change: N/A

61.9 Adequate Waterway: N/A

61.10 Surrounding: Flooding: N/A if yes explain:

Erosion: N/A if yes explain:

61.11 Location of piers and/or abutment detrimental: N/A

61.12 Other features that may affect structure: Comments:

if yes explain:

62. CULVERT AND RETAINING WALL

| | Material | Condition Rating | Functioning | Cracking | Spalling | Scaling | Corrosion | Settlement | Alignment | Scour |
|---------------------|----------|------------------|-------------|----------|----------|---------|-----------|------------|-----------|-------|
| 62.1 Barrel | N/A | N | - | | | | | | | |
| 62.2 Head Walls | N/A | N | | /*** | | - | | | | |
| 62.3 Cut-off wall | N/A | N | - | | - | - | | | | |
| 62.4 Retaining wall | N/A | N | | | | | | | | |

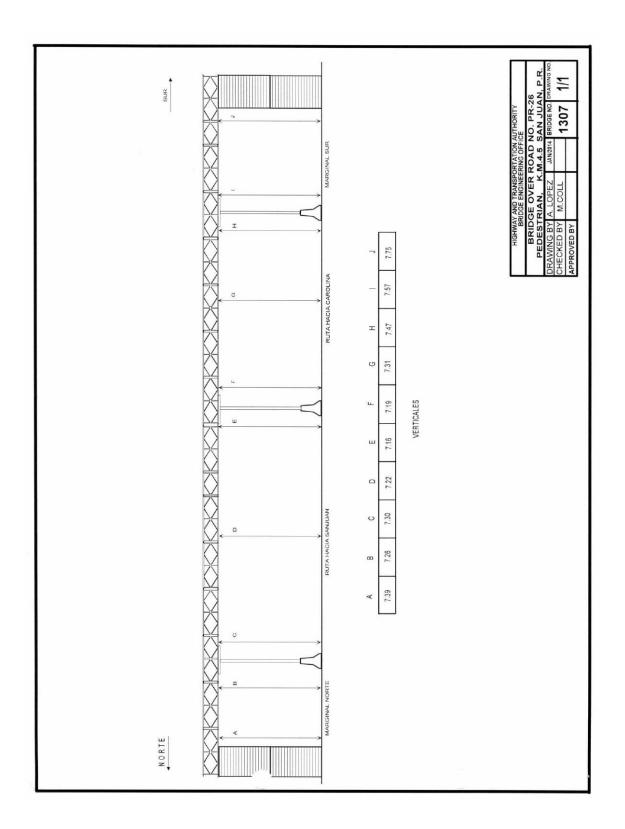
Comments:

| | | NFRASTRUC | | RING OFFICE E DIRECTORY A |
|---|---|---|-----------------------------|--|
| 71. WATER ADEQUAC | Y: N/A | N/A | | |
| 72. APPROACH ROAD | WAY | | | |
| 72.1 Alignment: 6 | | | | |
| 72.2 Slab or Pavement | Condition: N | Material: Other | | |
| Cracking: No | | Spallin | g: Small | all Scaling: None Uneven: No |
| Rough: No | Settlement: No | Movement: App | proach s | slab-backwall: No Breaking up: No |
| Excessive deformation | ation: No | | | |
| Safety: | Hazardous: No | | | |
| Drainage: | Inadequate: No | þ | | |
| Movement: | Pavement-app | roach slab: No | | |
| Embankment: Co | ndition: N | Functioning: No | D | Erosion: No |
| Construction: Flim | nsy: No | Integrity impair | ed: No | i de la construcción de la constru |
| 72.3 Undesirable Impac | ct: No | | | |
| 72.4 Joints: No | Type: None | Inadequate: N/ | A | Satisfactory Alignment: N/A |
| 72.5 Guardrail Type: N | None Materia | al: N/A | Functio | tioning: N/A |
| Condition: N | Alignment Hori | zontal: N/A | Vertica | cal: N/A |
| Joints Functioning | g: N/A Safety | Securely Attache | ed: N/A | A Pedestrian Hazards: N/A |
| Comments: | | | | |
| 90. INSPECTION DAT 93. CRITICAL FEATUR 93. CRITICAL FEATUR 93. CRITICAL FEATUR 94. Fracture Critical: Underwater: Other Special Ins 102. DIRECTION OF T 106. YEAR RECONSTR 107. DECK STRUCTUR 108. WEARING SURFA Type wearing surfa Type Membrane: N Deck protection: N 111. PIER OR ABUTMI 113. SCOUR CRITICAI 116. MINUMUM NAVIG AUXILIARY ITEMS | RE INSPECTION spection: RAFFIC: Highw RUCTED: RE TYPE: Steel ACE/PROTECTI ace: Steel None ENT PROTECTI L BRIDGES: N GATION VERTIC | N DATE ray traffic not carr Plate (includes o VE SYSTEM ON (FOR NAVIO | orthotropi GATION) E: | N): N/A |
| Signs: Type: H Type: N | Height Limits 1 | 8'-6" Materia | I: Alum. | n. Condition: 7 |
| турс. т | | | | |

| | | | | | | PRHTA | ents | | | | |
|--------------|----------------------|--------------|--------------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|------------------------|
| Elem. No. | Elements Description | P a g. | E n v. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total Stat Quantity |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
| | | | | | | | | | | | 0 |
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| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| | | - | 3 | | | | | | | | 0 |
| | | | 3 | - | | | | | | | 0 |
| | | + | 3 | | | | | | | | 0 |
| - | | + | 3 | | | 5 | | | | | 0 |
| | | + | 3 | | | | | | | | 0 |
| | | + | 3 | | | | | | | | 0 |
| - | | + | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |

| Non Core Elements | | | | | | | | | | | | |
|-------------------|----------------------|--|--------------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|--|
| Elem. No. | Elements Description | | E n v. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity | |
| | | | | | | | | | | | 0 | |
| | | | | | | | | | | | 0 | |
| | | | 3 | | | | | | | | 0 | |
| | | | 3 | | | | | | | | 0 | |
| | | | 3 | | | | | | | | 0 | |
| | | | 3 | | | | | | | | 0 | |
| | | | 3 | | | | | | | | 0 | |

| Elem. No. | Elements Description | .P a g. | E n v. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
|--------------|----------------------|---------------|--------------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
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| | | | 3 | | | | | | | | 0 |









1307-jan-24-2014-001.JPG

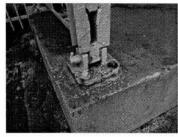
1307-jan-24-2014-002.JPG

1307-jan-24-2014-003.JPG





1307-jan-24-2014-007.JPG



1307-jan-24-2014-011.JPG



1307-jan-24-2014-017.JPG



1307-jan-24-2014-036.JPG



1307-jan-24-2014-037.JPG

E.3 June 30, 2008

| | NEERING OFFICE G SERVICE AREA |
|---|---|
| Team Leader: Mayra I. Zayas | |
| Bridge Inspector: Angel T. López | |
| Bridge Evaluator: Mayra I. Zayas | |
| Assistants: Ramón Rodriguez José R. Vázquez | |
| Driver: Jorge L. Viera | |
| Inspection date: _ 30 JUNIO 2008 | |
| Weather Conditions: Sunny | 2 |
| Amount of Time on Inspection: 1.5 Hours | |
| Equipment: X Bus or Van _ Underwater _ Ladde | ers _ Snooper X Camera _ Boat |
| Other: | |
| Bridge Number: _1307 | |
| Road on Structure: N/A Number or Name: _ | Km |
| Road Under Structure: State Highway Number or Nar | me: _26 Km4.5 |
| Ident. Plaque: No Num | |
| Traffic Safety Features: | |
| Bridge railings: not applicable or safety not reuired | |
| Transitions: not applicable or safety not reuired | |
| Approach Guardrail: not applicable or safety not re | euired |
| Approach Guardrail Ends: not applicable or safety | not reuired |
| COMMENTS AND/OR RECOMMENDATIONS: | |
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| Inspection by: Angel T. López | Revised and Approved by: Mayra I. Zayas |
| Bridge Inspector | Team Leader |
| in the second of the second s | |
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| tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mallas de protección sueltas de sus puntos de apollo. | Ø. | | | | | | NGINEE | | | | | | | |
|--|---|-------------|--------------------|-----------|----------|------------|------------------|------------|----------|-----------|-----------|----------|---------------|------|
| 81. Weards Surface: Material: Steel Condition: S Dialogies Adequate Ponding: No Safely: Yes 23. Salab or Plate: Material: Steel Condition: S Safely: Yes 23. Salab or Plate: Material: Steel Condition: S Safely: Yes 23. Salab or Plate: Material: Steel Condition: S Safely: Yes 23. Balling: Top: No Bottom: No Concession: Sovere 23. Movement: Deck to backwall: m. Concession: Sovere 23. Movement: Deck to backwall: m. Concession Falet Safety Condition: Sovere 36. Curb NNA | 58. DECK | | | | | | | | | | | | | |
| S2. Slab or Plate: Material: Steel Condition: 5 Cracking: None Balling: Top: No Bottom: No Efflorescence: No Exudation: No Rust Stains: No Corrosion: Sovere B3. Movement: Deck to Backwall: cm Deck to approach slab: cm Tomos in the state of the state | | | ce: Mat | erial: St | eel | Col | ndition: 5 | | Thickn | ess | cm. | | | |
| Cracking: None Spalling: Top: No Bottom: No Spalling: Top: No Bottom: No Spalling: Top: No Bottom: No Rust Stains: No Corrosion: Severe 3.3 Movement : Deck to backwall: m. Deck to approach slab: m. Tom Meterial Cond. Height <u>1000 1000 1000 1000 1000 1000 1000 100</u> | Deteriorati | on: 50 to 1 | 75 % | Dra | ainage: | Adequate | | Ponding | : No | | Safety: | Yes | | |
| Spalling: Top: No Bottom: No Sealing: Top: No Bottom: No Efforescence: No Exudation: No Rust Stains: No Corrosion: Severe 53.3 Movement: Deck to backwall: m. Deck to approach slab: m. Type: NA Automic Corrosion Paint Safety Cracking Spalling Spalling Spalling S8.4 Curb NA - <td>58.2 Slab</td> <td>or Plate:</td> <td>Materia</td> <td>I: Steel</td> <td></td> <td>Coi</td> <td>ndition: 5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | 58.2 Slab | or Plate: | Materia | I: Steel | | Coi | ndition: 5 | | | | | | | |
| Bealing: Top: No Better: No Corrosion: Severe: Bealing: Top: No Deck to backwall: m. Deck to approach slab: m. Bealing: Top: No Deck to backwall: m. Deck to approach slab: m. Bealing: Top: No NA - - - - - Bealing: NA - - - - - - - - Bealing: NA - | Cracking: | None | | | 1 | | | | | | | | | |
| Efforescence: No Exutation: No Ruist Stalins: No Corrosion: Severel 38.3 Movement: Deck to backwall: m. Deck to approach slab: m. Staling: Corrosion Material Corrosion Paint Safeto Cracking Spalling Scaling Staling: N/A - | Spalling: | Top: No | Bot | tom: No | 0 | | | | | | | | | |
| S8.3 Movement: Deck to backwall: m. Deck to approach slate: m. matchina Corrda Height Corrda Jainta Drainage Alignment Corrosion Paint Safety Cracking Spaining Scaling 8.4. Curb N/A - < | Scaling: | Top: No | Bot | tom: No | C | | | 1 | | | | | | 12 |
| Material Conditions (cm) Joints (cm) Drainage Joints Algement Correstion Paint Safety Cracking Spalling Scaling 58.4 Curl N/A - | Effloresce | nce: No | Exu | idation: | No R | ust Stains | : No | Corrosic | on: Sev | /ere | | | | |
| MathrialMathrialMathrialMathrialMathrialMathrialMathrialDeninageAlignmentCorrectionPaintSafetyCrackingSpallingScaling58.4 CurbN/A <td< th=""><th>58.3 Move</th><th>ement:</th><th>Dec</th><th>ck to bad</th><th>ckwall:</th><th>cm.</th><th>Deck</th><th>to approad</th><th>h slab</th><th></th><th>cm.</th><th></th><th></th><th></th></td<> | 58.3 Move | ement: | Dec | ck to bad | ckwall: | cm. | Deck | to approad | h slab | | cm. | | | |
| Bast NA Image Ima | | | | Loss | Joints | Drainage | Alignment | Corrosion | Paint | Safety | Cracking | Spalling | Scaling | |
| Median N/A -< | | N/A | - | 2 | | | | | | - | | | | |
| Sidewalks N/A - <th< td=""><td>Median</td><td>N/A</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<> | Median | N/A | - | | | | | | | | | | | |
| Paragets NA - | | N/A | | | - | | | - | | | - | - | 10 -1 | |
| Railling Steel 5 Pair | | N/A | | | | 0-0 | | | ۳. | - | | | | |
| 58.9 Lighting Standards: Material: N/A Condition: N/A Functioning: N/A 58.0 Utilities: Type: Size: Safety: | | Steel | 5 | | Fair | | Fair | Severe | Poor | Yes | | | | |
| Type: Size: Safety: Type: Size: Safety: Type: Size: Safety: 58.11 Joints: Condition: N/A Leaking: N/A Cracking: N Spalling: N Armor: No Type: N/A Functioning: N/A Leaking: N/A Cracking: N Spalling: N Armor: No 58.12 Drains and Scuppers: Material: None Condition: N Functioning: N/A Cracking: N Spalling: N Armor: No 58.1- Corrosión severa con pérdidas de secciones y perforaciones en los laterales de la superficie de las tolas. Varias tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mallas de protección sueltas de sus puntos de apollo. | 58.9 Light | ting Stand | dards: N | Material: | N/A | Cor | ndition: N/A | 4 | Functi | oning: N | I/A | | | |
| Type: Size: Safety: _ Type: Size: Safety: _ 58.11 Joints: Condition: N/A Type: N/A Functioning: N/A Leaking: N/A Cracking: N Spalling: N Armor: No Type: N/A Functioning: N/A Leaking: N/A Cracking: N Spalling: N Armor: No 58.12 Drains and Scuppers: Material: None Condition: N Functioning: N/A Comments: 58.1- Corrosión severa con pérdidas de secciones y perforaciones en los laterales de la superfície de las tolas. Varias tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mallas de protección sueltas de sus puntos de apollo. | 58.10 Util | ities: | | | | | | | | | | | | |
| Type: Size: Safety: | Type: | | Size | e: | | | _ | | | | | | | |
| 58.11 Joints: Condition: N/A Type: N/A Functioning: N/A Leaking: N/A Cracking: N Spalling: N Armor: No Type: N/A Functioning: N/A Leaking: N/A Cracking: N Spalling: N Armor: No 58.12 Drains and Scuppers: Material: None Condition: N Functioning: N/A Comments: 58.1- Corrosión severa con pérdidas de secciones y perforaciones en los laterales de la superfície de las tolas. Varias tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mailas de protección sueltas de sus puntos de apollo. | Type: | | | | | | 5. 0 | | | | | | | |
| Type: N/A Functioning: N/A Leaking: N/A Cracking: N Spalling: N Armor: No Type: N/A Functioning: N/A Leaking: N/A Cracking: N Spalling: N Armor: No 58.12 Drains and Scuppers: Material: None Condition: N Functioning: N/A Comments: 58.1- Corrosión severa con pérdidas de secciones y perforaciones en los laterales de la superficie de las tolas. Varias tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mailas de protección sueltas de sus puntos de apollo. | | | | | | Saf | ety: _ | | | | | | | |
| Type: N/A Functioning: N/A Leaking: N/A Cracking: N Spalling: N Armor: No 58.12 Drains and Scuppers: Material: None Condition: N Functioning: N/A Comments: 58.1- Corrosión severa con pérdidas de secciones y perforaciones en los laterales de la superfície de las tolas. Varias tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mailas de protección sueltas de sus puntos de apollo. | | | | | | | | | o | | | | | |
| 58.12 Drains and Scuppers: Material: None Condition: N Functioning: N/A Comments: 58.1- Corrosión severa con pérdidas de secciones y perforaciones en los laterales de la superficie de las tolas. Varias tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mallas de protección sueltas de sus puntos de apollo. | • | | | | | | | | tata ata | | | | | |
| Material: None Condition: N Functioning: N/A Comments: 58.1- Corrosión severa con pérdidas de secciones y perforaciones en los laterales de la superficie de las tolas. Varias tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mallas de protección sueltas de sus puntos de apollo. | | | | | L | eaking: N/ | A Crack | ing: N | Spallin | ig: N | Armor: | NO | | |
| Comments: 58.1- Corrosión severa con pérdidas de secciones y perforaciones en los laterales de la superficie de las tolas. Varias tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mallas de protección sueltas de sus puntos de apollo. | | | • • | | notionir | ag: NI/A | | | | | | | | |
| 58.1- Corrosión severa con pérdidas de secciones y perforaciones en los laterales de la superfície de las tolas. Varias tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mallas de protección sueltas de sus puntos de apollo. | | | | N FU | nctionii | ig. N/A | | | | | | | | |
| tolas están sueltas de sus puntos de apollo. 58.8- Corrosión severa con mallas de protección sueltas de sus puntos de apollo. | | | ora con | nárdida | و طم وم | Acciones v | nerforacio | nes en los | latera | les de la | superfici | e de las | tolas Va | rias |
| 58.8- Corrosión severa con mallas de protección sueltas de sus puntos de apollo. | | | | | | 120 | periordene | | atora | 00 00 1 | a caporno | 0 00 100 | | |
| т. | | | 00000-004000000000 | | | | eltas de su | s puntos d | e apoll | o. | | | | |
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| | | | | | | | | OFFICE | | | | |
|--|--|--|--|---|--------------|--------------------------------------|-----------------------|--|--------------------------------------|----------------------------|------------------------|----------------------|
| 59. | SUPERS | STRUCTURE | Ξ | | | | | | | | | |
| 59.1 | l Bearin | g Devices: | Type: Fixe | ed C | out of Plun | nb: No | Pair | nt: None | | | | |
| | | tion: 5 | | | | | | | | | | |
| 59 3 | | seats, pede | estal arou | it nade | ahutme | nts or ni | er seat v | where hea | ms he | ar directly | on conc | |
| 00.1 | _ | - | Cracking: | - | , abatine. | no or pr | | Illing: None | | 10 Decise 10 | on conc | |
| | | | oracking. | NU | | | She | anag. none | s otai | ing. None | | |
| | | ing: No | | | | | | | | | | |
| 59.3 | | eams: N/A | | | | | | | | | | |
| | Cond | ition: N | Co | prosion | : None | Pai | nt: None | | | | | |
| 59.4 | 4 Concre | ete: N/A | Type: N/A | | | | | | | | | |
| | Cond | ition: N | Cracking: | No | | | Spa | alling: None | e Scal | ing: None | | |
| 59. | 5 Truss: | Bailey Pede | strian Pa | aint: Po | or Co | rrosion: \$ | Severe | Memb | ers: St | ringers Co | ndition: | 5 |
| 59.0 | 6 Draina | ge: Type: | Co | onditio | n:N Fu | nctioning | : No | | | | | |
| 59.3 | 7 Hinges | : Condition | :N Fu | unctioni | ng: N/A | Mo | vement: | N/A | | | | |
| 59. | B Deflec | tion: Norma | al | | | | | | | | | |
| | | | | | | | | | | | | |
| 59.9 |) Vibrati | ons: Minima | el | | | | | | | | | |
| | | ons: Minima | | | | | | | | | | |
| | | ons: Minima RUCTURE: | | Cond | 1 | 1 | 1 | × | | | | |
| | | | | Cond. Rating | Cracking | Spalling | Scaling | Corrosion | Paint | Movement | Erosion | Undermining |
| 60.0 | | RUCTURE: Wingwalls | | | Cracking | Spalling | Scaling | Corrosion | Paint | Movement | Erosion | Undermining |
| 60.0 | SUBST | RUCTURE: Wingwalls Breast- | Material | Rating | Cracking | | | | 1000000 | Movement | Erosion | Undermining |
| 60.0 | 60.1.1 | RUCTURE: Wingwalls | Material N/A | Rating N | | | | | | | _ | () |
| | 60.1.1 60.1.2 | Wingwalls Breast- Backwall | Material N/A N/A | Rating N N | | | | | | | | - |
| Abutments | 60.1.1 60.1.2 60.1.3 | Wingwalls Breast- Backwall Fooling | Material N/A N/A N/A | Rating N N N | | | | | | | | - |
| Abutments | 60.1.1 60.1.2 60.1.3 60.1.4 | RUCTURE: Wingwalls Breast- Backwall Footing Piles | Material N/A N/A N/A N/A | Rating N N N N | - | | | | | | | |
| Abutments | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 | RUCTURE: Wingwalls Breast- Backwall Footing Piles Caps | Material N/A N/A N/A N/A Steel | Rating N N N N 5 | | | | Moderate | Poor | | | |
| Abutments | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 | RUCTURE: Wingwalls Breast- Backwall Fooling Piles Caps Bracing | Material N/A N/A N/A N/A Steel Steel | Rating N N N S 5 5 | | | | Moderate Moderate | Poor Poor | No No | No No | No No |
| 60.0 | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 | RUCTURE: Wingwalls Breast- Backwall Footing Piles Caps Bracing Columns | Material N/A N/A N/A N/A Steel Steel Steel | Rating N N N 5 5 5 5 | | | | Moderate Moderate | Poor Poor Poor | | No No No | |
| Piers or Non Abutments 09 | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 | RUCTURE: Wingwalls Breast- Backwall Fooling Piles Caps Bracing Columns Fooling | Material N/A N/A N/A N/A Steel Steel Steel Steel Concrete | Rating N N N 5 5 5 5 6 | | Small | L | Moderate Moderate | Poor Poor Poor | No No No No No | | |
| Piers or Non Abutments 09 | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 60.2.5 | RUCTURE: Wingwalls Breast- Backwall Footing Piles Caps Bracing Columns Footing Piles | Material N/A N/A N/A Steel Steel Steel Steel Concrete N/A | Rating N N S 5 5 5 6 N | | | | Moderate Moderate | Poor Poor Poor | | | |
| Abutments | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 60.2.5 60.3.1 | RUCTURE: Wingwalls Breast- Backwall Footing Piles Caps Bracing Columns Footing Piles Caps | Material N/A N/A N/A N/A Steel Steel Steel Steel Concrete N/A N/A | Rating N N N 5 5 5 6 0 N N | | | | Moderate Moderate | Poor Poor Poor | | | |
| Rocker Piers or Non Abutments Piele Bents Pile Bents Abutments | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 60.2.5 60.3.1 60.3.2 | RUCTURE: Wingwalls Breast- Backwall Footing Piles Caps Bracing Columns Footing Piles Caps Bracing Bracing | Material N/A N/A N/A Steel Steel Steel Steel Concrete N/A N/A N/A | Rating N N N 5 5 5 6 8 N N N N | | | | Moderate Moderate | Poor Poor Poor | | | |
| Piers or Non Abutments 09 | 60.1.1 60.1.2 60.1.3 60.1.4 60.2.1 60.2.2 60.2.3 60.2.4 60.2.5 60.3.1 60.3.2 60.3.3 | RUCTURE: Wingwalls Breast- Backwall Fooling Piles Caps Bracing Columns Fooling Piles Caps Bracing Piles | Material N/A N/A N/A N/A Steel Steel Steel Steel Concrete N/A N/A N/A N/A | Rating N N N S 5 5 5 6 N N N N N | | | | Moderate Moderate | Poor Poor Poor | | | |

con mucha perdida de secciones. Las escaleras tienen corrosión severa y perforaciones con perdidas de secciones.

BRIDGE ENGINEERING OFFICE

61. CHANNEL AND PROTECTION Condition: N

61.1 Channel Scour: N/A

61.2 Embankment Erosion: N/A

| | | Туре | Material | Condition Rating | Functioning |
|------|---------------------|---------------------------------------|----------|---------------------|-------------|
| 61.3 | Protective Device | | N/A | N | |
| 61.4 | Fender System | | N/A | N | k |
| 61.5 | Rip Rap | | N/A | N | |
| 61.6 | Spur Dikes, Jetties | · · · · · · · · · · · · · · · · · · · | N/A | N | |

61.7 Obstruction: N/A

61.8 Channel Change: N/A

61.9 Adequate Waterway: N/A

61.10 Surrounding: Flooding: N/A if yes explain:

Erosion: N/A if yes explain:

61.11 Location of piers and/or abutment detrimental: N/A

61.12 Other features that may affect structure: Comments:

62. CULVERT AND RETAINING WALL

| | Material | Condition Rating | Functioning | Cracking | Spalling | Scaling | Corrosion | Settlement | Alignment | Scour |
|---------------------|----------|------------------|-------------|----------|----------|---------|-----------|------------|-----------|-------|
| 62.1 Barrel | N/A | N | | | | | | | | |
| 62.2 Head Walls | N/A | N | | | | | | | | |
| 62.3 Cut-off wall | N/A | N | - ' | | | | | | | |
| 62.4 Retaining wall | N/A | N | - | | | | | 22 | | |

if yes explain:

Comments:

| 72. A 72.1 | VATER ADEQUA APPROACH ROA Alignment: 6 Slab or Paveme Cracking: No Rough: No Excessive deform | ADWAY | | N/A | | | |
|---------------|---|--------------------------|------------|--------------|-------------|-----------------|-------------------|
| 72.1 | Alignment: 6 Slab or Paveme Cracking: No Rough: No Excessive deform | nt Ci | ondition: | | | | |
| | Slab or Paveme Cracking: No Rough: No Excessive deform | | ondition: | | | | |
| 72.2 | Cracking: No Rough: No Excessive deform | | ondition: | | | | |
| | Rough: No Excessive deform | Settlemen | | N Mater | ial: Other | | 7 |
| | Excessive deform | Settlemen | | Spalli | ng: Small | Scaling: None | Uneven: No |
| | | | t: No Mo | vement: A | pproach s | lab-backwall: N | o Breaking up: No |
| | | nation: No | | | | | |
| | Safety: | Hazardou | s: No | ÷., | | | |
| | Drainage: | Inadequat | e: No | | | | |
| | Movement: | Pavement | -approac | h slab: No | | | |
| | Embankment: C | ondition: N | Fu | nctioning: I | ٥V | Erosion: No | |
| | Construction: Fl | imsy: No | Inte | egrity impa | ired: No | | |
| 72.3 | Undesirable Im | pact: No ' | | | | | |
| 72.4 | Joints: No | Type: Nor | ne Ina | dequate: N | ٩/A | Satisfactory A | lignment: N/A |
| 72.5 | Guardrail Type | : None M | aterial: N | /A | Functio | oning: N/A | |
| | Condition: N | Alignment | Horizont | al: N/A | Vertica | I: N/A | |
| | Joints Functioni | ng: N/A S | afety Sec | urely Attac | hed: N/A | Pedestrian Ha | zards: N/A |
| | INSPECTION D | | | | | | |
| | Fracture Critica | al: | | | | | |
| | Underwater: | | | | | | |
| | Other Special I | nspection: 30 | JUNIO 2 | 2012 | | | |
| 102 | DIRECTION OF | TRAFFIC: | Highway t | raffic not c | arried | | |
| 106 | YEAR RECONS | STRUCTED: | | | | | |
| 107 | DECK STRUCT | URE TYPE: | Steel Plat | te (include: | s orthotrop | pic) | 2 |
| 108 | . WEARING SUR | FACE/PROT | ECTIVE | SYSTEM | | | |
| | Type wearing su | urface: Steel | | | | | |
| | Type Membrane | e: None | | | | | |
| | Deck protection | n: None | | | | | |
| 111 | . PIER OR ABUT | MENT PRO | FECTION | (FOR NAT | VIGATION | N): N/A | |
| 113 | . SCOUR CRITIC | AL BRIDGE | S: N | | | | |
| 116 | . MINUMUM NAV | IGATION VI | ERTICAL | CLEARA | NCE: | | |
| AU) | XILIARY ITEMS | | | | | | |
| | | e: Height Limi e: N/A | its 18'-6 | "(5.46mts) | Mate | rial: Alum. | Condition: 7 |

E.4 March 14, 2003

| Bridge Ke | ey: 013071 | Agenc | cy ID: 013071 Sufficiency Rating: -1.0 |
|--|---|---|--|
| State 1: Facility Carried 7: Rte.(On/Under)5/ Level of Service : Directional Suffix SHD District 2: Place Code 4: Feature Intersect Latitude 16: Border Bridge No | IDENTIFICATION 72 Puerto Rico Struc Num 8: PR 28 Location 9: A: One Route Under Rts. Signing 6C: 1 Mainline Rts. Number 5E: 0 N/A (NBI) % Responsib SAN JUAN County Code 76770 Kilometer Po d8: PEDESTRIAN WALKWAY 18d 27'18" Longitude 17 de 98: Unknown (P) | 013071 BALDORIOTY DE CASTRO AVE. Profix 5B: 2 U.S. Numbered 5D: 00003 lify: NA 3: San Juan 3: San Juan st 11: 04.5 km | INSPECTION Frequency 81: 24 months Inspection Date 90: 3/14/2003 Next Inspection: 03/14/2005 FC Frequency 92A: NA FC Inspection Date 93A: NA Next FC Inspection: NA |
| Number of Approx | 108C: None AGE AND SERVICE | Main Unit 46: 2 | Owner 22: 0101 State Highway Agency Custodian 21: 01 01 State Highway Agency CONDITION Deck 56: 7 Good Super 59: 0 Satisfactory Sub 60: 6 Satisfactory Curvert 52: N N/A (NBI) Channel/Channel Protection 61: N N/A (NBI) LOAD RATING AND POSTING Inventory Rating Method 65: 2 AS Allowable Stress Operating Rating Method 63: Inventory Rating 66: MS44.4 Design Load 31: 7 Pedestrian Posting Status 41: A Open, no restriction |
| ype of Service o ype of Service u anes on 28A: U DT 29: 6 Length Max Spar Curb/Sdwlk Wdth Width Curb to Cu | n 42A: 3 Pedestrian-bicyle nder 42B: 1 Highway Lanes Under 28B: 8 5,300 Truck ADT 109: 5 % GEOMETRIC DATA 148: 21.70 m Structure Length L 50A: 0,00 m Curb/Sidewalk // nb 51: 1,60 m Width Out to Ou | Defour Length 19: 00 km Year of ADT 30: 2000 49: 55.60 m 1dth R 50B: 0.00 m 52: 2.89 m | APPRAISAL Fridge Rall 36A: N N/A or not required Approach Rall 36C: N N/A or not required Transition 36B: N N/A or not required Approach Rall Ends 36D: N N/A or not required Str. Evaluation 67: Unknown (NBI) Deck Geometry 08: Unknown (NBI) Underclearance, Vertical and Horizontal 69: Unknown (NBI) Waterway Adequacy 71: N Not applicable Approach Alignment 72: 6 Equal Min Criteria Scour Critical 113: N Not Over Waterway PROPOSED IMPROVEMENTS |
| (w/ shoulders) Deck Area: Skew 34: 0.0 Minimum Vertica Minimum Vertica | Clearance Over Bridge 53: 9 Underclearance Reference 54A: H Underclearance 54B: 0 | Median 33: 0 No median No flare 9.99 m Hwy beneath struct 5.21 m | Bridge Cost 04: \$ 0 Type of Work 75: 36 Rehabilitate-gen. Roadway Cost 95: \$ 0 Length of Improvment 76: 55.60 m Total Cost 06: \$ 21,000 Future ADT 114: 92,703 Year of Cost Estimate 97: 2003 Year of Future ADT 115: 2020 |
| winimum Lateral | Undrolearance R 55: 0 | Hwy beneath struct 1.70 m 1.50 m | Navigation Control 38: N NA-no waterway Vertical Clearance 39: 0.00 m Horizontal Clearance 40: 0.00 m Pier Protection 111: Unknown (NBI) Lift Bridge Vertical Clearance 118: |
| Minimum Lateral Minimum Lateral | CONDITION STATE DATA | | |
| Alinimum Lateral Alinimum Lateral | CONDITION STATE DATA | Units Total Qty % in 1 | 1 Qty. St. 1 % in 2 Qty. St. 2 % in 3 Qty. St. 3 % in 4 Qty. St. 4 % in 5 Qty. St. 5 |
| Alinimum Lateral Alinimum Lateral ELEMENT Str Unit ElmvE 2 115/3 | nv Description P/S Conc Stringer | m. 223 0% | % 0 60 % 133 0 % 0 40 % 90 0 % 0 |
| Alinimum Lateral Alinimum Lateral ELEMENT Str Unit Elm/E 2 115/3 2 121/3 | nv Description P/S Conc Stringer P/Stl Thru Truss/Bot | m. 223 0 % m. 112 0 % | % 0 60 % 133 0 % 0 40 % 90 0 % 0 % 0 70 % 78 0 % 0 30 % 34 0 % 0 |
| Minimum Lateral Minimum Lateral ELEMENT Str Unit EInve 2 115/3 | nv Description P/S Conc Stringer | m. 223 0% | % 0 60 % 133 0 % 0 40 % 90 0 % 0 % 0 70 % 78 0 % 0 30 % 34 0 % 0 % 0 91 % 102 0 % 0 9 % 10 0 % 0 |

| | | | ation | Bureau of Bridges and Struct Bridge Maintena |
|---|---|---|---|--|
| | | | Bridge Inspection Report | |
| Str Unit E | lem/Env | Description | Element Notes | |
| 2 1 | 15/3 | P/S Conc Stringer | | |
| 2 1 | 21/3 | Painted Steel Bottom Chord Thr | u T | |
| 2 1 | 26/3 | Painted Steel Thru Truss (exc), I | pot | |
| 2 1 | 52/3 | Painted Steel Floor Beam | | |
| 2 2 | 02/3 | Painted Steel Column or Pile Ex | lencorrosion in lower part of the column. | and a second |
| | | | | |
| BRIDGI (CULVE | | E9 | | |
| COLVE | -131 | | | |
| 15 | | | | |
| | | | | |
| <u> </u> | • | | and | - |
| PAST IN | VSPE | CTION | | |
| | | 204040 | 2020 M 100 M 100 M | |
| Inspecti | on Da | te: 03/14/2003 | Type: 1 Regular NBI | |
| Inspecto | or: | Pontis | Pontis User Key: Pontis - Pontis Por | |
| Scope: | | | | |
| | NBI: | Other: | | |
| | | | Element: | |
| | Under | water: Fracture | e Critical: | |
| NSPEC | TION | NOTES | | |
| | | ments > < none > | | |
| | | menus > < none > | | |
| ACTIN | | | | |
| | ISPEC | TION | | |
| | ISPEC | TION | Type: 1 Regular NBI | |
| nspectio | ISPEC on Date | TION | | |
| PAST IN | ISPEC on Date | :TION e: 05/01/1998 | Type: 1 Regular NBI Pontis User Key: Pontis - Pontis Por | |
| nspectic nspecto Scope: | ISPEC on Date r: | -TION e: 05/01/1998 -1 | Pontis User Key: Pontis - Pontis Por | |
| nspectio nspecto cope: N | ISPEC on Date r: NB(: | TION e: 05/01/1998 -1 ☑ Other: | Pontis User Key: Pontis - Pontis Por | |
| nspectic nspecto Scope: N | ISPEC on Date r: NB(: | TION e: 05/01/1998 -1 ☑ Other: | Pontis User Key: Pontis - Pontis Por | |
| nspectic nspecto Scope: N | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectio nspecto cope: N | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectio nspecto cope: N | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectio nspecto Scope: N | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectio nspecto Scope: N | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectio nspecto Scope: N | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectio nspecto Scope: N | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectio nspecto Scope: N | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectio nspecto Scope: N | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectic Inspecto Scope: NSPEC | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectio nspecto Scope: N | ISPEC on Date r: NBI: Jnderv | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectic nspecto cope: NSPEC | ISPEC on Date NBI: JInderv | TION 9: 05/01/1998 -1 Vater: Other: vater: Fracture | Pontis User Key: Pontis - Pontis Por | |
| nspectic ispecto icope: N VSPEC | ISPEC on Date r: Jinderv TION I TION I | TION 9: 05/01/1998 -1 [2] Other: vater:] Fracture | Pontis User Key: Pontis - Pontis Por | Thu 4/24/2003 08:46:11 |

E.5 November 17, 2000

| ENGINEER: HERIBERTO GONZALEZ | PUERTO RICO HIGH | WAY AUTHORITY | | | PAGE 1 OF 7 |
|---|-----------------------|---|--|----------|--|
| ENGINEER: HERIBERTO GONDADES | BRIDGE STUDIES AND | EVALUATION OFFICE | | EQUIPMEN | r |
| ASSISTANTS: RAUL VAZQUEZ | BRIDGE REINSPECTION & | S EVALUATION REPORT | BUS X | | LADDERS |
| : JULIO DE HOSTOS | | | BOAT | | CAMERA X |
| ; LUIS CACHO | BRIDGE No.: 01307 | FEDERAL SYSTEM | UNDERWAI | BR | SNOOPER # |
| | ââăâăâăââââââââ | | | OPERATOR | |
| t. | RCAD No.: PR 26 | KM. No. : 0004.500 | | PLAQUE I | |
| VALUATION DATE: 17-NOV-2000 | 1. 1 | | | X NO NO | 135 |
| | =======IDENTIFICA | PION========= | E | ITW NO. | 135 |
| | - | | | | |
| 1- STATE : | | Commonwealth of Puer | to Rico | | 721 |
| 2- HIGHWAY AGENCY DISTRICT : | | | | | 01. |
| 3- COUNTY (PARISH) CODE : | | | AN | | 127 |
| 4- PLACE CODE : | | | | | 76770 |
| 5- INVENTORY ROUTE : | | | | | 221000030 |
| 6- FEATURES INTERSECTED : | | | | | AN WALKWAY R 26 |
| <pre>0- STRUCTURE NUMBER':</pre> | | | 1 08 1 | P: | 013071 |
| 9- LOCATION : | | | | BALDORTO | TY DE CASTRO AVE, |
| 0- INVENTORY ROUTE, MINIMUM VERTIC. | | | | | 052df |
| L1- KILOMBTERPOINT : | | | | | 0004500 |
| 2- BASE HIGHWAY NETWORK : | INVENTOR | FROUTE IS ON THE BASE NE | TWORK | | o V |
| 13- LRS INVENTORY ROUTE, SUBROUTE N | UMBER : | | | | |
| L6- LATITUDE : | | DEGREES 27.3 MINUTES | | | 18271800 |
| 17- LONGITUDE : | | DEGREES 03.1 MINUTES | | | 066030600 |
| 19- BYPASS, DETOUR LENGTH (NEARBST : | KILOMETER) : | STRUCTURE OVER HIGH | WAY | | 000 |
| | CLASSIFICA | PTONNEERN | | | |
| 17 K | | | | | |
| 20- TOLL : | ON FI | REE ROAD | | | 3 |
| 21- MAINTENANCE RESPONSABILITY : | D.T.P.W. | | | | 01 |
| 22- OWNER : | D.T.P.W. | | | | 01 |
| 26- FUNCTIONAL CLASS. OF INVENTORY | ROUTE : URBAN | INTERSTATE | | | . 12 |
| | AGE AND SE | RVICE | | | |
| 27- YEAR BUILT : | | | 1968 | | 1968 |
| 28- LANES ON AND UNDER STRUCTURE :. | | C LANES ON / & LANES UND | ER | | 0008 |
| 29- A.D.T. OF INVENTORY ROLLER | | 67,300 | 20 | | 067300 |
| is instit of invaluence hourd | | | | | |
| 30- YEAR OF A.D.T. : | | | 1999 | | 1999 |
| | STRUCTURE D | | 1999 | | 1999 |
| | ======sTRUCTURE D | ATA============ | | | 1999 7 |
| 30- YEAR OF A.D.T. : | =====ssssSTRUCTURE D | ATA=================================== | estrian | | |
| 30- YEAR OF A.D.T. : 31- DESIGN LOAD : 32- APPROACH ROADWAY WIDTH : | STRUCTURE D | NTA PED | estrian | | 7 |
| 30- YEAR OF A.D.T. : 31- DESIGN LOAD : 32- APPROACH ROADWAY WIDTH : 33- BRIDGE WEDLAN : | STRUCTURE D | NTA========= | estrian | | 7 0293 |
| 30- YEAR OF A.D.T. : | STRUCTURE Di | NTA========== | estrian 7 FT) | | 7 0293 0 |
| 36- YEAR OF A.D.T. : | STRUCTURE Di | NTA=========== | estrian 7 ft) C | | 7 0293 0 00 |
| 30- YEAR OF A.D.T. : | STRUCTURE Di | NTA=========== | ESTRIAN 7 FT) C N-N-N-N 5 | | 7 0293 0 00 0 NNNN 5 |
| 30- YEAR OF A.D.T. : 31- DESIGN LOAD : 32- APPROACH ROADWAY WIDTH : 33- BRIDGR MEDIAN : 34- SKEW ANGLE : 35- STRUCTURE FLARED : 36- TRAFFIC SAFETY FEATURES : 37- HISTORICAL SIGNIFICANCE : 38- NAVIGATION CONTROL : | STRUCTURE D | PED | ESTRIAN 7 FT) C N-N-N-N 5 N/A | | 7 0293 0 0 0 0 NINNN 5 N |
| 30- YEAR OF A.D.T. : 31- DESIGN LOAD : 32- APPROACH ROADWAY WIDTH : 33- BRIDGE MEDIAN : 34- SKEW ANGLE : 35- STRUCTURE FLARED : 36- TRAFFIC SAPETY FRATURES : 37- HISTORICAL SIGNIFICANCE : 38- NAVIGATION CONTROL : 39- NAVIGATION VERTICAL CLEARANCE : | STRUCTURE D | NTA========== 29.29 MT (96.0 NONR NONR NONB | ESTRIAN 7 FT) C N-N-N-N 5 N/A NO | | 7 0293 0 0 0 NININ 5 N 0000 |
| 30- YEAR OF A.D.T. : 31- DESIGN LOAD : 32- APPROACH ROADWAY WIDTH : 33- BRIDGE MEDIAN : 34- SKEW ANGLE : 35- STRUCTURE FLARED : 36- TRAFFIC SAFETY FEATURES : 37- HISTORICAL SIGNIFICANCE : 38- NAVIGATION VERTICAL CLEARANCE : 39- NAVIGATION MORIZONTAL CLEARANCE : | T | NTA========== | ESTRIAN 7 FT) C N-N-N-N 5 N/A NO NO | | 7 0293 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| 30- YEAR OF A.D.T. : 31- DESIGN LOAD : 32- APPROACH ROADWAY WIDTH : 33- BRIDGE MEDIAN : 34- SKEW ANGLE : 35- STRUCTURE FLARED : 36- TRAFFIC SAFETY FEATURES : 37- HISTORICAL SIGNIFICANCE : 38- NAVIGATION CONTROL : 39- NAVIGATION VERTICAL CLEARANCE : 40- NAVIGATION HORIZONTAL CLEARANCE : 41- STRUCT. OPEN, POSTED OR CLOSED * | TO TRAFF. : | NTA========== | ESTRIAN 7 FT) C N-N-N-N 5 N/A NO NO | | 7 0293 0 0 0 NININ 5 N 0000 00000 A |
| 30- YEAR OF A.D.T. : 31- DESIGN LOAD : 32- APPROACH ROADWAY WIDTH : 33- BRIDGE MEDIAN : 34- SKEW ANGLE : 35- STRUCTURE FLARED : 36- TRAFFIC SAFRTY FEATURES : 37- HISTORICAL SIGNIFICANCE : 38- NAVIGATION CONTROL : 39- NAVIGATION VERTICAL CLEARANCE : 40- NAVIGATION HORISONTAL CLEARANCE : 41- STRUCT. OPEN, POSTED OR CLOSED ' 42- TYPE OF SERVICE : | TO TRAFF. : | NTA========== | ESTRIAN 7 FT) C N-N-N-N 5 N/A NO NO | | 7 0293 0 00 0 NNNN 5 N 0000 00000 A 31 |
| 30- YEAR OF A.D.T. : | TO TRAFF. : | NTA========== | ESTRIAN 7 FT) C N-N-N-N 5 N/A NO NO | | 7 0293 0 0 0 NNNN 5 N 0000 00000 A 31 309 |
| 30- YEAR OF A.D.T. : 31- DESIGN LOAD : 32- APPROACH ROADWAY WIDTH : 33- BRIDGE MEDIAN : 34- SKEW ANGLE : 35- STRUCTURE FLARED : 36- TRAFFIC SAFRTY FEATURES : 37- HISTORICAL SIGNIFICANCE : 38- NAVIGATION CONTROL : 39- NAVIGATION VERTICAL CLEARANCE : 40- NAVIGATION HORISONTAL CLEARANCE : 41- STRUCT. OPEN, POSTED OR CLOSED ' 42- TYPE OF SERVICE : | STRUCTURE D/ | PRD | ESTRIAN 7 FT) 0 N-N-N-N | | 7 0293 0 0 אואואוא 5 N 00000 00000 A 31 |

| AL SYSTEM | PUERTO RICO HIGHWAY . | עיייד קרונידיונא | PAGE 2 OF 7 |
|---|--|---|-------------------|
| AL SISING | BRIDGE STUDIES AND EVAL | | FROM Z OF / |
| JDGB No.: 01307 | BRIDGE REINSPECTION & EVA | | |
| · · · · · · · · · · · · · · · · · · · | | | |
| 47- INV. ROUTE, TOTAL HORIZ. CLEARAN | CE : 10.82 MT | .(35.49 FT) | 108 |
| 48- LENGTH OF MAXIMUM SPAN : | 21.65 MT. (71.01 FT |) | 00217 |
| 49- STRUCTURE LENGTH : | 55.63 MT. (182.47 F | T) . | 000556 |
| 50- CURB OR SIDEWALK WIDTHS : | NONE | | 000000 |
| | | | |
| | =======STRUCTURE DATA= | | |
| 51- BRIDGE ROADWAY WIDTH, CURB TO CU | | | 0016 |
| 52- DECK WIDTH, OUT TO OUT : | | | 0028 |
| 53~ MI. VERT. CLEAR. OVER BRIDGE ROA | | | 9999 |
| 54- MINIMUM VERTICAL UNDERCLEARANCE | | | H0521 |
| 55- MINIMUM LATERAL UNDERCLEARANCE | | PERFORMANCE AND | H017 |
| 56- MINIMUM LATERAL UNDERCLEARANCE | N LEFT : | 1.50 MT. (4.92 FT) | 015 |
| | CONDITION | RA VELAN VALUE AN AN AN AN AN AN AN AN AN | |
| | | | |
| | TING: 3 | DECK COMMENTS: | |
| 58.1 WEARING SURFACE: MATERIAL: 4 | | DECK SURFACE SEVERE C | ORROSION ON FLOOR |
| THICKNESS: | | STEEL PLATES, PER- | |
| DETERIORATION: X YES NO | RAINAGE: X ADEQUATE INADEQUATE | FORATIONS DUE CORROSI | ON.BOTTOM SLAB MO |
| PONDING: YES X NO SAFET | : X YBS NO | DERATED TO SEVERE COR | ROSION ON MANY |
| 58.2 SLAB OR PLATE: MATERIAL: ST | EL CONDITION 3 | RAILING COMPONENTS. | |
| CRACKING: FINE MEDIU | M OPEN | | |
| TOP BOTTON OSSSA | \$ | 55555555555555555555555555555555555555 | |
| | n.DEEP x 6 in. 🍬 L > 1 in. x 6 | | |
| | in., M ~ in * in., H * in 1 is | | |
| 10 1992/2010/00/00/00/00/00/00/00/00/00/00/00/00/ | 55555555555555555555555555555555555555 | | |
| | T STAINS CORROSION: LIGHT MODE | | |
| 58.3 MOVEMENT: DECK TO BACKWALL | em. DECK TO APPROACH SLAB | cm. | |
| | 4444044444444444444444444444444444444 | | |
| | BS • MEDIAN • SIDEWALKS • PARAPETS | | |
| | 444464444444464444444444444444444444444 | | |
| MATERIAL | 6 0 0 | • STEEL • | |
| TABLER OF REPORTS CONTRACTOR | | -•5• | |
| HBIGHT LOSS (cm) • | • • • | • • | |
| JOINTS * | 000 | -°OK° | |
| DRAINAGE ° | 0 0 0 | a o | |
| ALIGNMENT | | •0K• | |
| CORROSION (L-M-S) ° | 0 0 O | • N • | |
| PAINT:G-GOOD,F-FAIR, * | | P | |
| P-POOR, N-NONE ° | o a o | o o | |
| U-USELESS TO PAINT ° | o a o | о о | |
| SAFETY ° | | -°ŸES° | |
| CRACKING (F-M-O) | 0 0 0 | • • | |
| AND DEPENDENT OF A DEPENDENT STATE | ····· a a o o | | |
| SCALING (L-M-H-S) ° | | • • | |
| 884: | <u> </u> | acaaaaaaaaa1 | |
| 58.9 LIGHTING STANDARDS: MATERIA | L: CONDITION: | FUNCTIONING: YES NO | |
| 58.10 UTILITIES: TYPE: | SIZE: SAFETY: | FONCTIONING. IBS NO | |
| | | FUNCTIONING: YES NO | |
| | | SPALLING: SMALL LARGE | |
| 58.12 DRAINS AND SCUPPERS: MATER | | FUNCTIONING: YES NO | |
| | | | |

| | TEM | | | | | Y AUTHORITY | | | P. | AGE 3 OF |
|--|---|--|--|---|---|---|--|---|--|---|
| | | | (- | | | ALUATION OFFI | | | | |
| IDGE No.: | 01307 | | BRI | DGE REINS | SPECTION & E | VALUATION REE | ORT | | | |
| | | | | | | | | | | |
| | UCTURE: FAIR | | RATING | | | | | PERSTRUCTURE CO | | |
| 59.1 BEAR | ING DEVICES: TY | PE: | F | IXED | MOVABLE | OUT OF PLU | | BRATE TO SEVE | | N ON SEV |
| PAIN | T: GOOD | FAIR | POOR FUNCTIONI | NONE | | TO PAINT | ЬĒ | RIDGE COMPONE | NTS. | |
| | GE SRATS, PEDEST | AT CROTTE | | | | R BRAMS BRAR | | | | |
| | CTLY ON CONCRET | | 100,10001000 | | | | | | | |
| | ITION: 5 | | KING: F | M O | SPALLING | G: S L | | | | |
| SCAL | | н з | | | | | | | | |
| | L-BEAMS: TYPE: | пэ | | | width;thickne | 699) · | | | | |
| | | COPR | | | PAINT: G | | Π | | | |
| | ITION: | | | | FAINT. 0 | | • | | | |
| | RETE-BOX BEAMS, | | ACKING: F | , шев. м о | SPALLING | S L | | | | |
| | DITION: | | CKING: P | в U | SPADDING | r: 5 U | | | | |
| | ING: L M H | | | 5 | CORROSION: | LXMXS | | | | |
| | SES: TYPE: BAT | | | | | | | | | |
| DAMA | | FORMATION | | | XFXP N | 10 D. . | 100 | | | |
| | USS B=UPPER & L | OWER LATER | | =PORTALS | | | NO | | | |
| | INAGE: TYPE: | | CONDITION: | | FUNCTION | | NO | | | |
| | | | FUNCTION | ING: YE | S NO MOV | EMENT: YES | NO | | | |
| | BS: CONDITION: | | | _ | | | | | | |
| ALIG | INMENT: GOOD | BAD | PAINT: G | | ט א ט | | | | | |
| ALIG 59.8 DEFL | | BAD AL EXCI | SSIVE | F cms CESSIVE | | | | | | |
| ALIG 59.8 DEFL 59.9 VIBR | NMENT: GOOD .ECTIONS: X NORM RATIONS: X MINI | BAD AL EXCI | ISSIVE DERATE EX(| cms CESSIVE | | | | | | |
| ALIG 59.8 DEFL | NMENT: GOOD .ECTIONS: X NORM RATIONS: X MINI | BAD AL EXCI | SSIVE | cms CESSIVE | | | | | | |
| ALIG 59.8 DEFL 59.9 VIBR | NAMENT: GOOD BECTIONS: X NORM NATIONS: X MINI STURE: FAIR | BAD AL EXCI MAL MOI | RATING: 1 | cms CESSIVE | | IS OR NON PILL | 35 BENTSSS | 5555555>>><555555 | áápiles Ben | TSÁÉÁÁÍ |
| ALIG 59.8 DEFL 59.9 VIBR | NYMENT: GOOD JECTIONS: X NORM NATIONS: X MINI YTURE: FAIR °<5355355 | BAD AL EXCI MAL MOI | SSIVE DERATH EX RATING: 1 MENTSÉÉÉÉÉÉÉ | cms CESSIVE 5 5 666666>°<6 | | | | άδάδά≦≤>°<δάδ 65565δ53046553 | | |
| ALIG 59.8 DEFL 59.9 VIBR | REMENT: GOOD SECTIONS: X NORM LATIONS: X MINI STURE: FAIR °<5355355 Ó46655655 | BAD AL EXCI MAL MOI | SSIVE DERATE EX RATING: 1 MENTSAGAGAGAG | cms CESSIVE 5 5 646464>°<6 6464646046 | ASASASSIN R | iáááôáááááááá | 344444446 | | lááá ðááááááá | a 8ááááá |
| ALIG 59.8 DEFL 59.9 VIBR | REMENT: GOOD AGCTIONS: X NORM RATIONS: X MINI STURE: FAIR °<8558555 Ó454555655 ° 60.1.1 | BAD AL EXCI MAL MOI SAAAAABUTI SAAAAAAAUTI SAAAAAAAA | RATING: RATING: HENTSÁGÁGÁGÁG Jáságágágágágá 9 60.1.3 ° 61 | cms CESSIVE 5 ถึส์ส์ล์ล์ล์จ<< ถึส์ส์ล์ล์ล์ล์อีลีล์ 0.1.4 • 6 | | 66668666666666666666666666666666666666 | 3444444468 9 60.2.4 ° | 666666666666666666666666666666666666666 | áááðááááááááá .1 ° 60.4.2 | 60,4°° |
| ALIG 59.8 DEFL 59.9 VIBR | REMENT: GOOD AGCTIONS: X NORM ANTIONS: X MINI STURE: FAIR °<5555555 Ó454555655 ° 60.1.1 °WINGWALL | BAD AL EXCI MAL MOI SAAAAABUTI SAAAAAAAUTI SAAAAAAAA | RATING: RATING: MENTJÁÁÁÁÁÁÁ Já5ááááádáá 9 60.1.3 ° 61 >FOOTING ° 1 | cms CESSIVE 5 ถึส์ส์ล์ล์ล์จ<< ถึส์ส์ล์ล์ล์ล์อีลีล์ 0.1.4 • 6 | | iáááôááááááááá 2.2 °60.2.3 NG °COLUMNS | 3444444468 9 60.2.4 ° | 655555 0 60.2.5 0 60.4 PILES 0 CAP | áááðááááááááá .1 ° 60.4.2 | 60,4°° |
| ALIG 59.8 DEFL 59.9 VIBR | RYMENT: GOOD JECTIONS: X NORM RATIONS: X MINI STURE: FAIR °<54554666 ° 60.1.1 °WINGWALL ° | BAD AL EXCI MAL MOI MAL MOI MAAAAAAAABUTI GAAAAAAAAA SAABUTA • 60.1.2 • SBACKWALL | RATING: 1 RATING: 1 MENTSASASASAS Sasasasasasasas Sasasasasasasas Sasasasas | cms DESSIVE 5 5 6 6 6 6 6 7 7 8 8 6 8 8 8 8 8 8 8 8 8 8 | абаалаарын алаалааларын 0.2.1 ° 60.2 Сары °BRACI ° | 666386666666666666 2 °60.2.3 NG °COLUMNS ? | daaaaaaaaa 60.2.4 ° PFOOTINGS° | 655555 0 60.2.5 0 60.4 PILES 0 CAP | 44464444444444444444444444444444444444 | 6055555 |
| ALIG 59.8 DEFL 59.9 VIBR | REMENT: GOOD JECTIONS: X NORM RATIONS: X MINI STURE: FAIR °<5555555 ° 60.1.1 °WINGWALI ° D65555555 | BAD AL EXCI MAL MOI MAL MOI MAAAAAAAABUTI GAAAAAAAAA SAABUTA • 60.1.2 • SBACKWALL | RATING: 1 RATING: 1 MENTSASASASAS SSSSSSSSSSS O 60.1.3 ° 60 POCTING ° 1 ° ° SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS | CTAS CESSIVE 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | абаалаарын алаалааларын 0.2.1 ° 60.2 Сары °BRACI ° | 666686666666666666 .2 °60.2.3 NG °COLUMNS ° 13556656666666666666666 | 344444440 9 60.2.4 ° 9 FOOTINGS ° 9 ° ° | 65555555 0 60.4 60.2.5 0 60.4 PILES 0 CAP 0 655555555555555555555555555555555555 | 44464444444444444444444444444444444444 | 6055555 |
| ALIG 59.8 DEFL 59.9 VIBR 50- SUBSTRUC | NYMENT: GOOD JECTIONS: X NORM NATIONS: X MINI STURE: FAIR °<5555555 ÖSAAS55655 ° 60.1.1 °WINGWALL ° UGSAS5555 ° | BAD AL EXCI MAL MOI | SSIVE DERATH EX RATING: 4 MENTSAÁÁÁÁÁÁ SáSáSáSáSáSáSáS SFOOTING & 1 S SáSáSáSáSáSáSáSáS & o | CRSSIVE CESSIVE 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | | 66653666666666666 2 | dááááááááð 9 60.2.4 ° 9 FOOTINGS ° 9 ° 5 áááááááááá • CONCRETE ° | 665555555 ° 60.4 PILES ° CAP ° 65555555555555555555555555555555555 | 4448844444 1 ° 60.4.2 S °BRACING ° 444444444444444 ° | aðáááá: |
| ALIG 59.8 DEFL 59.9 VIBR 60- SUBSTRUC NATERIAL CONDITION F | RYNENT: GOOD JECTIONS: X MORM RATIONS: X MINI STURE: FAIR °<8358355 Ó5665665 ° 60.1.1 ° USSSSS ° Cassissi ° RATING ° | BAD AL EXCI MAL MOI | SSIVE DERATH EX RATING: 1 MENTSAÁAÁAÁAA SASSSAÁAÁAÁAA SO,1.3 ° SI SO,1.3 ° SI O O O O SAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA | CRSSIVE CESSIVE 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | | 66648844444 2.2 060.2.3 NG 0COLUMNS 0 13346544444444 . 0STEBL 505 | dááááááááð 9 60.2.4 ° 9 FOOTINGS ° 9 ° 5 áááááááááá • CONCRETE ° | 6555554635554555 60.2.5 ° 60.4 PILES ° CAP ° 655555555555555 ° | 4448844444 1 ° 60.4.2 S °BRACING ° 444444444444444 ° | aðáááá: |
| ALIG 59.8 DEFL 59.9 VIBR 50- SUBSTRUC 50- SUBSTRUC NATERIAL CONDITION R CRACKING (F | RYNENT : GOOD SECTIONS : X NORM LATIONS : X MINI STURE: FAIR °<33353566 ° 60.1.1 °WINGWALL ° Gaaasasas ° Caating ° 7-M-O) ° | BAD AL EXCI MAL MOI Jais MOI J | NSSIVE DERATH EX RATING: 1 MENTSKÁKÁKÁK SASASASASAS OGSASASASASAS OGSASASASASAS OGSASASASASAS OGSASASASASAS OGSASASASASAS OGSASASASASAS OGSASASASASASAS OGSASASASASASAS OGSASASASASASASAS OGSASASASASASASASAS OGSASASASASASASASASASASASASASASASASASASA | CMS CESSIVE 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | абабабаріве абабабабабабабабабабабабабабабабабабаб | 666466464444 1.2 °60.2.3 NG °COLUMNS ° 1346644444444 . °STEBL . °STEBL . °STEBL | 3444444444 0 60.2.4 ° 0 FOOTINGS° 0 ° 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | 653653346334633 60.2.5 • 60.4 PILES • CAP • • • • • • • • • • • • • • • • • • • | 44466444445454 | 58555555 6 60.4 9 PIL: 6 6 6 6 6 6 6 6 6 6 6 6 6 |
| ALIG 59.8 DEFL 59.9 VIBR 60- SUBSTRUC 00- SUBSTRUC CONDITION F CRACKING (F SPALLING (S | RYNENT: GOOD SECTIONS: X NORM RATIONS: X MINI STURE: FAIR °<ääääääää ° 60.1.1 °WINGWALL ° Gaääääääää ° CATING ° 7-M-O) ° S-L) ° ° | BAD AL EXCI MAL MOI | NSSIVE DERATH EX RATING: 1 MENTSKÁKÁKÁK SASASASASAS OGSASASASASAS OGSASASASASAS OGSASASASASAS OGSASASASASAS OGSASASASASAS OGSASASASASAS OGSASASASASASAS OGSASASASASASAS OGSASASASASASASAS OGSASASASASASASASAS OGSASASASASASASASASASASASASASASASASASASA | CMS CESSIVE 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | абабабаріве абабабабабабабабабабабабабабабабабабаб | 6664864644444 1.2 °60,2,3 NG °COLUMNS ° 155655555555 ° 5 ° 5 ° 5 ° 5 ° 5 ° 5 ° 5 ° 5 ° ° ° ° ° ° ° ° ° ° ° ° ° | 3444444444 0 60.2.4 ° 0 FOOTINGS° 0 ° 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | 653653346334633 60.2.5 • 60.4 PILES • CAP • • • • • • • • • • • • • • • • • • • | 44466444445454 | 58555555 6 60.4 9 PIL: 6 6 6 6 6 6 6 6 6 6 6 6 6 |
| ALIG 59.8 DEFL 59.9 VIBR 50- SUBSTRUC 50- SUBSTRUC CONDITION R CRACKING (F SPALLING (S SCALING (L- | RENENT: GOOD SECTIONS: X NORM RATIONS: X MINI STURE: FAIR °<5555555 ° CASASASASAS ° CASASASASAS ° CASASASASAS ° CASASASASAS ° CASASASASAS ° CASASASASAS ° CASASASASAS ° CASASASASAS ° CASASASASAS ° CASASASASASAS ° CASASASASASASAS ° CASASASASASASASASAS ° CASASASASASASASASASASASASASASASASASASAS | BAD AL EXCI MAL MOI MAL MOI MAL MOI MAGAAAAAADUTI OGAAAAAAADUTI OGAAAAAAAT 0 00.1.2 00.0.2 00 | RATING: 1 RATING: 1 HENTISÁÁÁÁÁÁÁ 6 OSSASÁÁÁÁÁÁÁÁ 6 POOTING: 1 S 6 <td>CTAS CESSIVE 5 5 5 5 5 5 5 5 5 5 5 5 5</td> <td></td> <td>666.6666666666666666666666666666666666</td> <td>Bááááááááá Baíáááááááá POOTINGS Baíáááááááá CONCRETE Baíááááááá CONCRETE Baíááááááá CONCRETE Baíááááááá CONCRETE Baíááááááá CONCRETE Baíáááááá CONCRETE Baíáááááá CONCRETE Baíáááááá CONCRETE Baíááááááá CONCRETE Baíááááááááá CONCRETE Baíááááááááá CONCRETE Baíááááááááááá CONCRETE Baíááááááááááááááááááá CONCRETE Baíááááááááááááááááááá CONCRETE Baíáááááááááááááááááááááá CONCRETE Baíáááááááááááááááááááááááááááááááááááá</td> <td>66565555 • 60.4 PILES • 60.4 • • • • • • • • • • •</td> <td>444055555555 1 ° 60.4.2 S °BRACING ° 4464646464646 ° </td> <td>aðasasa</td> | CTAS CESSIVE 5 5 5 5 5 5 5 5 5 5 5 5 5 | | 666.6666666666666666666666666666666666 | Bááááááááá Baíáááááááá POOTINGS Baíáááááááá CONCRETE Baíááááááá CONCRETE Baíááááááá CONCRETE Baíááááááá CONCRETE Baíááááááá CONCRETE Baíáááááá CONCRETE Baíáááááá CONCRETE Baíáááááá CONCRETE Baíááááááá CONCRETE Baíááááááááá CONCRETE Baíááááááááá CONCRETE Baíááááááááááá CONCRETE Baíááááááááááááááááááá CONCRETE Baíááááááááááááááááááá CONCRETE Baíáááááááááááááááááááááá CONCRETE Baíáááááááááááááááááááááááááááááááááááá | 66565555 • 60.4 PILES • 60.4 • • • • • • • • • • • | 444055555555 1 ° 60.4.2 S °BRACING ° 4464646464646 ° | aðasasa |
| ALIG 59.8 DEFL 59.9 VIBR 50- SUBSTRUC 50- SUBSTRUC SOLITION R CRACKING (F SPALLING (S SCALING (L- CORROSION (| RYMENT: GOOD SECTIONS: X NORM RATIONS: X MINI STURE: FAIR ° <33353555 ° 60.1.1 °WINGWALL ° Gááá55555 ° RATING ° S-L) ° N-B-9)° (L-M-S) ° | BAD AL EXCI MAL MOI MAL MOI MAL MOI MAGAAAAAADUTI OGAAAAAAADUTI OGAAAAAAAT 0 00.1.2 00.0.2 00 | RATING: 1 RATING: 1 HENTJSÁŠÁŠÁŠÁ 6 OSSŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠ | CTAS CESSIVE 5 5 5 5 5 5 5 5 5 5 5 5 5 | | 666.6666666666666666666666666666666666 | Bááááááááá Baíáááááááá POOTINGS Baíáááááááá CONCRETE Baíááááááá CONCRETE Baíááááááá CONCRETE Baíááááááá CONCRETE Baíááááááá CONCRETE Baíáááááá CONCRETE Baíáááááá CONCRETE Baíáááááá CONCRETE Baíááááááá CONCRETE Baíááááááááá CONCRETE Baíááááááááá CONCRETE Baíááááááááááá CONCRETE Baíááááááááááááááááááá CONCRETE Baíááááááááááááááááááá CONCRETE Baíáááááááááááááááááááááá CONCRETE Baíáááááááááááááááááááááááááááááááááááá | 65565555 • 60.4 PILES • 60.4 • • • • • • • • • • • • | 444055555555 1 ° 60.4.2 S °BRACING ° 4464646464646 ° | aðasasa |
| ALIG 59.8 DEFL 59.9 VIBR 50- SUBSTRUC 50- SU | RYMENT: GOOD SECTIONS: X NORM RATIONS: X MINI STURE: FAIR °<5555666 ° 60.1.1 °WINGWALL ° Quadadadada ° CALING 0 S-L) ~ S-L) ~ S-L) ~ S-L) ~ S-L) ~ S-L) ~ | BAD AL EXCI MAL MOI MAL MOI MAL MOI MAAAAAAADUTI OGAAAAAAADUTI OGAAAAAAAADUTI OGAAAAAAAADUTI OGAAAAAAAADUTI OGAAAAAAAA O O O O O O O O O O O O O O | RATING: 1 RATING: 1 HENTJSÁŠÁŠÁŠÁ 6 OSSŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠŠ | CTAS CESSIVE 5 5 6 6 6 6 6 6 6 6 6 6 7 7 7 8 6 6 6 7 7 8 7 8 | : : <td:< td=""> <td::< td=""> <td::< td=""></td::<></td::<></td:<> | iaaabaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa | Baaaaaaaaaa POOTINGS Baaaaaaaaa CONCRETE D60 P 0 D50 C L 0 C0 C C 0 C C C C | 66565555 × 60.4 PILES × 60.4 × × 665555 × 60.4 × × 6 × × × × × | 4448646454555 .1 ° 60.4.2 ° BRACING ° .444464444644 ° | 48845454 • 60.4 • PIL: • • • • • • • • • • • • • |
| ALIG 59.8 DEFL 59.9 VIBR 50- SUBSTRUC 50- SU | RNNENT: GOOD JECTIONS: X NORM LATIONS: X MINI OXAGASAGAS 60.1.1 OXINGWALI 0 QAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA | BAD AL EXCI MAL MOI MAL MOI MAL MOI MALASA 60.1.2 0BREAAJ 60.1.2 0BREAAJ 60.1.2 0BREAAJ 60.1.2 0 0BREAAJ 60.1.2 0 0BREAAJ 60.1.2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | RATING: III RATING: 1 HENTSAAAAAAA 61 Saaaaaaaaaaa 61 POOTING: 0 Saaaaaaaaaaa 0 Saaaaaaaaaa 0 Saaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa | CTAS CESSIVE 5 5 6 6 6 6 6 6 6 6 6 6 7 7 7 8 6 6 6 7 7 8 7 8 | : : <td:< td=""> <td::< td=""> <td::< td=""></td::<></td::<></td:<> | iaaabaataaaaai .2 °60.2.3 NG °COLUMNS ° iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii | Baaaaaaaaaa POOTINGS Baaaaaaaaa CONCRETE D60 P 0 D50 C L 0 C0 C C 0 C C C C | 66565555 × 60.4 PILES × CAP × 55555 × 60.4 × × 55555 × 60.4 × 5555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 555 × 5555 | 4448646454555 .1 ° 60.4.2 ° BRACING ° .444464444644 ° | aðassa |
| NATERIAL CONDITION E CRACKING (E SPALLING (S SCALING (L PAINT (G-P- NOVEMENT EROSION (| RYNENT : GOOD JECTIONS : X NORM AUTIONS : X MINI CTURE: FAIR °<5355556 Ó46455665 ° 60.1.1 °WINGWALL ° U35355656 ° CATING ° | BAD AL EXCI MAL MOI | RATING: III RATING: III MENTSAAAAAGAA IIII SAAAAAGAA IIII SAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA | CTAS CESSIVE SAAAASO CA SAAAAAACAA SAAAAAAAAAAAAAAAAAAAAAAA | دەخەخەخەخەخەخەخەخەخەخەخەخەخەخەخەخەخەخەخ | iaaabaaaaaaaa | Báááááááá 9 60.2.4 ° PPOOTINGS° 5 ° ° Eásáááááá • ° ° • ° ° ° ° | 66565555 × 60.4 PILES • CAP • * * * * * * * * * * * * * | 44486484848484 1 ° 60.4.2 °BRACING ° | aðaááaa |

| AL SYSTEM | 5 | PUERTO RICO HIGHWAY AUTHORITY BRIDGE STUDIES AND EVALUATION OFF | TCR | PAGE 4 OF 7 |
|---|---|--|-------------------|----------------------|
| 1DGE No.: 01307 | BI | RIDGE REINSPECTION & EVALUATION RE | | |
| 61- CHANNEL & CHANN 61.1 CHANNEL SCOU 61.2 EMBANKMENT E | (EXTENT) : | RATING : N | CHANNEL COMMENTS: | |
| 61.3 PROTECTIVE 61.4 FENDER SYST 61.5 RIP RAP 61.6 SPUR DIKES, | o o TYPE o NATERIAI O dádádádásessásásás DEVICE o o EM o o retties o o | NORAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA | ; | |
| 61.8 CHANNEL CHA DETRIMENTAL 61.9 ADEQUATE WA 61.10 SURROUNDING 61.11 LOCATION OF IF YES, EX | YES NO IF YES, EXPLJ YERWAY: YES NO IF NO, E AREA: FLOODING: YES NO EROSION: YES NO PIERS AND/OR ABUTWENTS: DET | XXPLAIN IF YES, EXPLAIN IF YES, EXPLAIN RIMENTAL: YES NO | | |
| 62- CULVERT AND RET | INING WALLS :N/A | RATING :N | CULVERT COMMENTS: | |
| MATERIAL | °62.1BARREL°62.2HEADWALL°62. | isisisisisisisisisisisisisisisisisisis | | |
| FUNCTIONING (Y-N CRACKING (F-M-O) SPALLING (S-L) | o o v o0o o o o | 0 , 0 0 0 0 0 0 0 0 0 | а. | |
| Corrosion (L-M-S Settlement (Y-N) Alignment (Y-N) | 6 7 0 0 0 0 0 0 | 0 0 0 0 0 0 0 0 | | |
| | ***** | ŔŔŔŔŔŔŔŔŔŔŔŔŔŔŔŔŔŔŔŔŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎ | | |
| 64- OPERATING RATIN 65- METHOD USED TO | ETERMINE OPERATING RATING | PEDESTRIAN | | 2 800 2 800 |
| | | | | |

| | PUBRTO RICO HIGHWAY AUTHORITY | PAGE 5 OF 7 |
|--|---|---------------------------------------|
| | BRIDGE STUDIES AND EVALUATION OFFICE | |
| IDGE No.: 01307 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| - STRUCTURAL EVALUATION : | | |
| | | 10 |
| | ION AT STEEL PLATES, RAILINGS, UPPER CHORD & STRIN- AT BRACINGS & BETWEEN LOWER CHORDS & FLOORBEAMS. | |
| | | |
| LIGHT CORROSION AT STREE | COLUMNS & STAIRS.MODERATE CORROSION AT REST AREA. | |
| | | 4 |
| 3 21 | | |
| | | |
| <i>at</i> | | |
| | | |
| - DECK GEOMETRY : | | N |
| - DECK GEOMETRI | | |
| N/A. | x. | |
| | | |
| >- UNDERCLEARANCE, VERTICAL & HORI | IZONTAL : | |
| (5. 1147) (1. son | ut) | • ~ |
| EQUAL TO PRESENT MINIMUM | CRITERIA. | |
| - RETROP DOGETING . | | 5 |
| - BRIDGE POSITING | N/A. | 5 |
| - WATERWAY ADEQUACY : | | N |
| | | |
| N/A. | | |
| | | |
| | RS. SLIGHT - 11 TO 100 YEARS. OCASSIONAL - 3 TO 10 YEARS. FRE NIENCE, HIGHWAY PASSABLE IN A MATTER OF HOURS. SIGNIFICANT - TRAF | |
| | TRAFFIC WITH RESULTING HARDSHIP | FIC DELATS OF OF TO SEVERAL DA |
| | | |
| | | |
| SEVERE - LONG TERM DELAYS TO T | | 6 |
| SEVERE - LONG TERM DELAYS TO T | | 6 |
| SEVERE - LONG TERM DELAYS TO T | | 6 |
| SEVERE - LONG TERM DELAYS TO T 2- APPROACH ROADWAY ALIGNMENT : N/A. | | 6 |
| SEVERE - LONG TERM DELAYS TO T - APPROACH ROADWAY ALIGNMENT N/A. 72.2 SLAB OR PAVEMENT CONDI | ITION : ' KATERIAL : | POTICH: YPA NO |
| SEVERE - LONG TERM DELAYS TO T - APPROACH ROADWAY ALIGNMENT N/A. 72.2 SLAB OR PAVEMENT CONDI CRACKING: F N O SFAL | ITION : ' MATERIAL : JLING: L S SCALING: L M H S UNNEVEN: YES NO | ROUGH: YES NO CRSIVE DEPORMATION: |
| SEVERE - LONG TERM DELAYS TO T - APPEROACH ROADWAY ALIGNMENT : N/A. 72.2 SLAB OR FAVEMENT CONDI CRACKING: F N O SPAL SETTLEMENT: YES NO M | ITION : MATERIAL : LLING: L S SCALING: L M H S UNNEVEN: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: EXC | ROUGH: YES NO CESSIVE DEFORMATION: |
| SEVERE - LONG TERM DELAYS TO T - APPROACH ROADWAY ALIGNMENT N/A. 72.2 SLAB OR PAVEMENT CONDI CRACKING: F N O SFAL | ITION : KATHRIAL : LLING: I. S SCALING: L. M. H. S. UNNEVEN: YEG NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP; EXC NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO | |
| SEVERE - LONG TERM DELAYS TO T - APPROACH ROADWAY ALIGNMENT : N/A. 72.2 SLAB OR FAVEMENT CONDI CRACKING: F N O SPAL SETTLEMENT: YES NO M SAFETY: HAZARDOUS YES | ITION : KATHRIAL : LLING: L S SCALING: L M H S UNNEVEN: YEG NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP; EXC NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO | |
| SEVERE - LONG TERM DELAYS TO T - APPROACH ROADWAY ALIGNMENT : N/A. 72.2 SLAB OR PAVEMENT CONDI CRACKING: F N O SPAL STTLEMENT: YES NO M SAFETY: HAZARDOUS YES NOVEMENT: PAVEMENT-APPROACH | ITION : KATERIAL : LLING: L S SCALING: L M H 3 UNNEVEN: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP; EXC NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO I SLAB: YES NO EMBANKMENT: CONDITION; | |
| SEVERE - LONG TERM DELAYS TO T - APPROACH ROADWAY ALIGNMENT N/A. 72.2 SLAB OR FAVEMENT CONDI CRACKING: F N O SFAL SETTLEMENT: YES NO M SAFETY: HAZARDOUS YES MOVEMENT: PAVEMENT-APPROACH FUNCTIONING: | ITION : KATRRIAL : LLING: L S SCALING: L M H S UNNEVEN: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: EXC NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO I SLAB: YES NO EMBANIMMENT: CONDITION; YES NO EROSION: YES NO IF YES, EXPLAIN YES NO | |
| SEVERE - LONG TERM DELAYS TO T 2- APPROACH ROADWAY ALIGNMENT : N/A. 72.2 3LAB OR PAVEMENT CONDI CRACKING: F N O SPAL SETTLEMENT: YES NO M SAFETY: HAZARDOUS YES MOVEMENT: PAVEMENT-APPROACH FUNCTIONING CONSTRUCTION: FLINSY: INTEGRITY IMPA 72.3 UNDESIRABLE IMPACT: YES | ITION : KATERIAL : LLING: L S SCALING: L M H S UNNEVEN: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: EXC NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO ISLAB: YES NO EMBANKMENT: CONDITION; YES NO EROSION: YES NO IF YES, EXPLAIN YES NO AIRED: YES NO IF YES, EXPLAIN NO | |
| SEVERE - LONG TERM DELAYS TO T - APPROACH ROADWAY ALIGNMENT : N/A. 72.2 JLAB OR FAVEMENT CONDI CRACKING: F N O SFAL SETTLEMENT: YES NO M SAFETY: HAZARDOUS YES NOVEMENT: PAVEMENT-APPROACH FUNCTIONING: CONSTRUCTION: FLINSY: INTEGRITY IMPA 72.3 UNDESIRABLE IMPACT: YES 72.4 JOINTS: TYPE: I | ITION : KATERIAL : LLING: L S SCALING: L M H S UNNEVEN: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: EXC NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO (SLAB: YES NO EMBANGMENT: CONDITION: YES NO EROSION: YES NO IF YES, EXPLAIN YES NO AIRED: YES NO IF YES, EXPLAIN NO INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO | CRSSIVE DEPORMATION: |
| SEVERE - LONG TERM DELAYS TO T - APPROACH ROADWAY ALIGNMENT : N/A. 72.2 SLAB OR FAVEMENT CONDI CRACKING: F N O SFAL SETTLEMENT: YES NO M SAFETY: HAZARDOUS YES MOVEMENT: PAVEMENT-APPROACH PUNCTIONING: CONSTRUCTION: FLINSY: INTEGRITY IMPA 72.3 UNDESIRABLE IMPACT: YES 72.4 JOINTS: TYPE: I 72.5 GUARDRAIL: TYPE: | ITION : KATERIAL : LLING: I. S SCALING: I. M H S UNNEVEN: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: EXC NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO (SLAB: YES NO EMBANKMENT: CONDITION: YES NO EROSION: YES NO IF YES, EXPLAIN YES NO IF YES, EXPLAIN NO INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO MATERIAL: CONDITION: FUNCTIONING: | CESSIVE DEFORMATION: YES NO |
| SEVERE - LONG TERM DELAYS TO T - APPROACH ROADWAY ALIGNMENT : N/A. 72.2 SLAB OR PAVEMENT CONDI CRACKING: F N O SPAL SETTLEMENT: YES NO M SAFETY: HAZARDOUS YES MOVEMENT: PAVEMENT-APPROACH FUNCTIONING: CONSTRUCTION: FLINSY: INTEGRITY IMPA 72.3 UNDESIRABLE IMPACT: YES 72.4 JOINTS: TYPE: I ALIGNMENT: HORIZONTAL: G | ITION : KATERIAL : LLING: L S SCALING: L M H 3 UNNEVEN: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP; EXC NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO I SLAB: YES NO EMBANKMENT: CONDITION; YES NO EROSION: YES NO IF YES, EXPLAIN YES NO AIRED: YES NO IF YES, EXPLAIN NO INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO MATERIAL: CONDITION: FUNCTIONING: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING; | CRSSIVE DEPORMATION: |
| SEVERE - LONG TERM DELAYS TO T - APPROACH ROADWAY ALIGNMENT : N/A. 72.2 SLAB OR FAVEMENT CONDI CRACKING: F N O SPAL SETTLEMENT: YES NO M SAFETY: HAZARDOUS YES NOVEMENT: PAVEMENT-APPROACH PUNCTIONING: CONSTRUCTION: FLINSY: INTEGRITY IMPA 72.3 UNDESIRABLE IMPACT: YES 72.4 JOINTS: TYPE: I | ITION : KATERIAL : LLING: L S SCALING: L M H 3 UNNEVEN: YES NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP; EXC NO DRAINAGE: INADEQUATE: YES NO FONDING: YES NO I SLAB: YES NO EMBANKMENT: CONDITION; YES NO EROSION: YES NO IF YES, EXPLAIN YES NO AIRED: YES NO IF YES, EXPLAIN NO INADEQUATE: YES NO SATISFACTORY ALIGNMENT: YES NO MATERIAL: CONDITION: FUNCTIONING: GOOD BAD VERTICAL: GOOD BAD JOINTS: FUNCTIONING; | CESSIVE DEFORMATION: YES NO |

| lal System | PUERTO RICO HIGHWAY AUTHORITY | PAGE 6 OF 7 |
|--|---|-------------|
| | BRIDGE STUDIES AND EVALUATION OFFICE | |
| (IDGE NO. :01307 | BRIDGE REINSPECTION & BVALUATION REPORT | |
| | ========PROPOSED IMPROVEMENT======= | |
| 75- TYPE OF WORK : | REHABILITATION | |
| 76- LENGTH OF STRUCTURE IMPROVEMENT : | 55.63 MT. (182.47 FT) | 31 0005 |
| | ====================================== | |
| 89- RESERVED | | |
| 90- INSPECTION DATE | NOVEMBER-17-2000 | - |
| 91- DESIGNATED INSPECTION EDECHINGY | NOVEMBER-17-2000 | 110 |
| 92 CRITICAL PROFILE INCOMPANY | 24 MONTHS | 2 |
| 22 CRITICAL PRATORS INSPECTION ! | N/A | NNN |
| FRACTURE CRITICAL UNDERW | N/A | |
| UNDERW | ATER OTHER | |
| E E | =======IMPROVEMENT COST========== | |
| 94- BRIDGE IMPROVEMENT COST : | | 0000 |
| 95- ROADWAY IMPROVEMENT COST : | | 0000 |
| 96- TOTAL PROJECT COST : | | |
| 97- YEAR OF IMPROVEMENT COST ESTIMATED : | (55.6342.844\$1315410¥)=\$20,776 2000 k | - 0000 |
| | | 20 |
| | ==CLASSIFICATION AND STRUCTURE DATA== | |
| 98- BORDER BRIDGE : | | |
| 99- BORDER BRIDGE STRUCTURE NUMBER : | | |
| 100- STRAHNET HIGHWAY DESIGNATION : | DEFENSE HIGHWAY | |
| 101- PARALLEL STRUCTURE DESIGNATION : | NO PARALLEL STRUCTURE | |
| 02- DIRECTION OF TRAFFIC : | TRAFFIC NOT CARRIED | |
| 03- TEMPORARY STRUCTURE DESIGNATION : | N/A | |
| 04- HIGHWAY SYSTEM OF THE INVENTORY ROUTE | N/A | |
| .05- FEDERAL LANDS HIGHWAYS : | | |
| | NO RECONSTRUCTION | |
| 07- DECK STRUCTURE TOR | NO RECONSTRUCTION | 000 |
| AS NEADING CIDE (DECEMBER - AND - | STEEL PLATE | |
| 08- WEARING SURF. / PROTECT. SYSTEM : | OTER - NONE - NONE | 90 |
| 10 DECEMBER DATLY TRUCK TRAFFIC : | | o |
| 10- DESIGNATED NATIONAL NETWORK : | PART OF NETWORK | |
| 11- PIER OR ABUT. PROTECTION (NAVIGATION) | : N/A | 10 |
| 12- NBIS BRIDGE LENGTH : | YES | |
| 13- SCOUR CRITICAL BRIDGE : | ····· N/A | |
| 14- FUTURE AVERAGE DAILY TRAFFIC : | | 09489 |
| 15- YR. OF FUTURE A.D.T. : | | 201 |
| 16- MINIM. NAVIG. VERT. CLEARANCE : | | |
| VERTICAL LIFT BRIDGE : | | |
| 17- SUFFICIENCY RATING : | | |
| 25- PRIORITY RATING: | | |
| | | 11170 |
| | | 1,11700 |
| | | |
| SG- CRITICAL FRACTURE INSP. DATE : ENGINEER :HERIBERTO GONZALEZ | | |

RAL SYSTEM PAGE 7 OF 7 PUERTO RICO HIGHWAY AUTHORITY BRIDGE STUDIES AND EVALUATION OFFICE BRIDGE REINSPECTION & EVALUATION REPORT RIDGE NO. :01307 AUXILIARY ITEMS 1-SIGNS TYPE: ORIENTACION "SAN JUAN - BAXAMON - RIO PIEDRAS" MATERIAL: ALUMINIO CONDITION: 7 REMARKS : THE REHABILITATION CONSIST IN REPAIR ALL DEFICIENCIES DESCRIBED ON THE ITEM #67. a . 255 Q. 15 Q.

E.6 May 8, 1998

| R.S. | | | |
|---------------------------------------|--|--|--|
| PUERTO RICO HIG | HWAY AUTHORITY | | PAGE 1 OF 7 |
| BRIDGE STUDIES AND | EVALUATION OFFICE | EQ | DIPMENT |
| BRIDGE REINSPECTION | & EVALUATION REPORT | BUS X | LADDERS |
| | | BOAT | CAMERA X |
| BRIDGE No.: 01307 | FEDERAL SYSTEM | UNDERWATER | SNOOPER # |
| : | | SNOOPER OPER | LATOR |
| ROAD No.: PR 26 | XM. No. : 0004.500 | PI | LAQUE ID |
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| =======CLASSIFICA | TION | | |
| ON F | REE ROAD | | 3 |
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| D.T.P.W. | | | 01 |
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| SERVICE AND SE | RVICE======= | | |
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| : | | N/A NO NO | N 00000 A 31 309 000 |
| : | VER HIGHWAY | N/A NO NO . OPEN | 0000 00000 A 31 309 |
| | PUERTO RICO HIG BRIDGE STUDIES AND BRIDGE REINSPECTION BRIDGE NO.: 01307 ROAD NO.: FR 26 | PUERTO RICO HIGHMAY AUTHORITY BRIDGE STUDIES AND EVALUATION OFFICE BRIDGE REINSPECTION & EVALUATION REPORT BRIDGE NO.: 01307 FEDERAL SYSTEM ROAD NO.: FR 26 XM. NO. : 0004.500 | PUERTO RICO HIGHNAY AUTHORITY BRIDGE STUDIES AND EVALUATION OFFICE EX BRIDGE NO.: 01307 FEDERAL SYSTEM UNDERMATEN BRIDGE NO.: 01307 FEDERAL SYSTEM UNDERMATEN SNOOPER OPER ROAD NO.: FR 26 XM. NO. : 0004.500 FI YES X N FILM |

| | | | | | - 19 March | |
|---|-------------------|---|-------------|--------------|---|--------------------|
| AL SYSTEM | | PUERTO RICO | HIGHWAY AU | THORITY | | PAGE 2 OF 7 |
| | BR | IDGE STUDIES | AND EVALUA | TION OFFICE | | |
| IDGE No.: 01307 | BRID | GE REINSPECT | ION & EVALU | ATION REPORT | | and b |
| | 1. | 4.40 pet | | | | 144 |
| 47- INV. ROUTE, TOTAL HORIZ. CLEA | IRANCE : | \$,40 act | 10.82 MT. (| 35.49 FT) | | 19/8 10 |
| 48- LENGTH OF MAXIMUM SPAN : | | 21.65 MT. | (71.01 FT) | | | 00218 F K |
| 49- STRUCTURE LENGTH : | | 55.63 MT. | (182.47 FT) | | | 00055860 |
| 50- CURB OR SIDEWALK WIDTHS : | | NONE | | | | 0 000000 |
| | | | | | 82 | |
| | | STRUCT | | | | |
| 51- BRIDGE ROADWAY WIDTH, CURB T | | | | | | 0016 |
| 52- DECK WIDTH, OUT TO OUT : | | | | | | 0028 |
| 53- MI. VERT. CLEAR. OVER BRIDGE | | | | | | 9999 P |
| 54- MINIMUM VERTICAL UNDERCLEARA | | | | | | H052 |
| 55- MINIMUM LATERAL UNDERCLEARAN | | | | | | 015 |
| 56- MINIMUM LATERAL UNDERCLEARAN | JE ON LEFT : | | | 1.50 MT | .(4.92 FT) | 015 |
| , | | | | | | |
| | | ==========CON | DITION | | | |
| - | | | | | DECK COMMENTS: | |
| 58- DECK: FAIR | RATING: 5 | COUNTRY ON . | e | | 58.1 Y 58.2) TOLES DE | ACERO CON LEVE COR |
| 58.1 WEARING SURFACE: MATERIA | 1: Steel | CONDITION : | 2 | | ROSION. | |
| THICKNESS: - DETERIORATION: X YES NO | | 101101000 101 | INDEOUNT? | | 58.8) RAILING CON LEVE | CORROSTON, MODERA |
| 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | | EQUATE IN | ADEQUATE | | DA CORROSION EN LAS S | |
| PONDING: YES X NO SA | | CONDITION | 5 | | Y #11 LADO OESTE. | |
| 58.2 SLAB OR PLATE: MATERIAL: | | CONDITION | 5 | | 1 FIT LINE CLOTH | |
| CRACKING: FINE M | EDIUM OPEN | | | | | |
| TOP BOTTOM | | | | | | |
| | 1 in. DEEP x 6 in | | | | | |
| SCALING : L t | o'nin., M'nia. – | · e in., n e | 10 1 10 | ., | | |
| | | DOGION- IT | | ADD SEVER | | |
| EFFLORESCENCE EXUDATION 58.3 MOVEMENT: DECK TO BACKWAL | | | | CR. | | |
| 58.3 MOVEMENT: DECK TO BACKWAL | - Ciii. DEC | IN TO MEEKON | | | | |
| | (58.4) (58.5) | (58.6) | (58.7) | (58.8) | | |
| | CURBS MEDIAN | | | | | |
| | Condo Habinar | Dibbinibito | | | | |
| MATERIAL | | | | STEEL | | |
| CONDITION RATING | | | | | | |
| | | | | - 1 | | |
| JOINTS | | | | | | |
| DRAINAGE | | | | I G I | | |
| ALIGNMENT | | a a | | G | | |
| CORROSION (L-M-S) | 1 | | | I M I | | |
| PAINT: G-GOOD, F-FAIR, | 1 | unnee | | F | | |
| P-POOR, N-NONE | | | | 1 1 | | |
| U-USELESS TO PAINT | | | | | | |
| SAFETY | • | I. | | YES | | |
| CRACKING (F-M-O) | 1 1 | | | 1 - 1 | | |
| SPALLING (S-L) | 1 | | | (| | |
| SCALING (L-M-H-S) | | l a constant de la co | 1 | | | |
| SCALLING (D-M-H-S) | | i I | l | · · | | |
| | | | | | | |
| 58.9 LIGHTING STANDARDS: MAN | ERIAL: - | CONDITION | : - | FUNC | TIONING: YES NO | |
| 58.10 UTILITIES: TYPE: | - SIZE: | | SAFETY: | | | |
| | CONSTRUCTION C | | - C | FUNCTIONING: | YES NO | |
| LEAKING: YES NO | | | | PALLING: S | | |
| 58.12 DRAINS AND SCUPPERS: MA | | CONDITI | | | ICNING: YES NO | |
| JULIZ DEMINS MED SCOFFERS: M | | | K. | | | × |

AL SYSTEM

PUERTO RICO HIGHWAY AUTHORITY BRIDGE STUDIES AND EVALUATION OFFICE

IDGE No.: 01307 BRIDGE REINSPECTION & EVALUATION REPORT

PAGE 3 OF 7

59- SUPERSTRUCTURE: FAIR RATING: 5

- 59.1 BEARING DEVICES: TYPE: FIXED MOVABLE OUT OF PLUMB PAINT: GOOD FAIR POOR NONE USELESS TO PAINT CONDUTION: FUNCTIONING: YES NO
- 59.2 ERIDGE SEATS, PEDESTAL, GROUT PADS, ABUTMENTS OR PIER SEATS WHERE BEAMS BEAR DIRECTLY ON CONCRETE
- CONDITION: 6 CRACKING: F M O SPALLING: S L SCALING: L M H S CRUSHING:
- 59.3 STEEL-BEAMS: TYPE:
 DIMENSIONS(height;width;thickness):

 CONDITION:
 CORROSION:
 L
 M
 S
 PAINT:
 G
 F
 P
 N
 U
- 59.4 CONCRETE-BOX BEAMS, I-BEAMS, SLAB, T-BEAM, TYPE: CONDITION: CRACKING: F M O SPALLING: S L SCALING: L M H S
- 59.5 TRUSSES: TYPE: BAILEY CONDITION: 5 CORROSION: L M S DAMAGE: DEFORMATION: PAINT: G X F P N U A-TRUSS B-UPPER & LOWER LATERAL BRACING C-PORTALS D-FLOOR BEAMS E*-STRINGERS
- 59.6 DRAINAGE: TYPE: CONDITION: FUNCTIONING: YES NO
- 59.7 HINGES: CONDITION: FUNCTIONING: YES NO MCVEMENT: YES NO ALIGNMENT: GOOD BAD PAINT: C F P N U
- 59.8 DEFLECTIONS: X NORMAL EXCESSIVE cms.
- 59.9 VIBRATIONS: X MINIMAL MODERATE EXCESSIVE

60- SUBSTRUCTURE: FAIR RATING: 5

| | 60.1.1 WINGWALL | 60.1.2 BREAST & | ROMERTAGEORE S | 60.1.4 PILES | WDAXABLE COMMUNICATION | 60.2.2 BRACING | Second and Constraints of | 60.2.4 | 60.2.5 PILES | 60.4.1 CAPS | 60.4.2 BRACING | 60.4.3 PILES |
|------------------|---------------------|--------------------|------------------------------------|-------------------|--|--------------------|---------------------------|----------|-----------------|----------------|--------------------|-------------------|
| | | BACKWALL | | | | 1 | F I | | | | | |
| MATERIAL | I | 1 | l l | i | STEEL | STEEL | STEEL | CONCRETE | | | | |
| CONDITION RATING | | | | | 6 | 5 | 6 | 6 | | | | |
| CRACKING (F-M-O) | 1 | ł | l l | l : | | 1 - | - 1 | - | | 1 | | 1 |
| SPALLING (S-L) - | | | | | | | | | | | | |
| SCALING (L-M-H-S | 1 | 1 | 1 | 1 | - 1 | - | l - | - | | l | 1 | 1 |
| CORROSION (L-M-S | | | | | L | M | L | | | | | |
| PAINT (G-F-P-N-U | 1 | 1 | 1 | I | F | F | - | - | | | | I |
| OVEMENT | | | | | N | N | N | N | | | | |
| ROSION | 1 | 1 | l | 1 | N | N | N | , N | | 1 | 1 | 1 |
| NDERMINING | | | | | N | N | N | N | | | | |

60- SUBSTRUCTURE COMMENTS:

60.2.2)MODERADA CORROSION CON PERDIDA DE SEC CIONS EN LOS BRACING. 60.2.3)PILASTRA TIENE COLUMNAS CON LEVE CORROSION.

ESCALERAS CON LEVE CORROSION.

RROSION EN AREA DE DESCANSO.

SUPERSTRUCTURE COMMENTS:

 OUT OF PLUMB
 59.5) UPPER CHORD TIENE LEVE Y MODERADA

 IS TO PAINT
 CORRO

 S PANELES
 #9.#10 Y #11 DE SUR A NORTE

 IRE BEAMS BEAR
 -LADO

MODERADA CORROSION EN EL LOWER CHORD EN AREA DESCANSO DE FLOOR BEAM.F LCOR BEAM TIENE MODERADA CORROSION EN UNION AL LOWER CHORD.

STRINGERS CON MODERADA CORROSION (EN EL 40% DE ELLOS).

60.2.4) FOOTING EN BUENAS CONDICIONES.

MODERADA CO

| AL SYSTEM IDEN DIAL SYSTEM IDEN NO. : 01307 IDEN NO. : 01408 IDEN NO. : 01408 IDEN NO. : 01408 IDEN NO. : 015 I |
|--|
| ELIGGE STUDIES AND EVALUATION OFFICE DOE NO.: 01307 ELIGGE STUDIES AND EVALUATION OFFICE ELIGGE STUDIES AND EVALUATION REPORT 1. CHANNEL & CHANNEL PROPERTION : N/A 1. CHANNEL SCOURCERTENTY): 1. CONDITION FUNCTION FUNCTIONER 2. CONDUCTION FUNCTION FUNCTIONER 3. CONDUCTION FUNCTION FUNCTION FUNCTIONER 3. CONDUCTION FUNCTION FUNCTION FUNCTIONER 3. CONDUCTION FUNCTION FUNCTIONER 3. CON |
| IDDER NO.: 01307 BIDDE NO.: 01307 BIDDE NO.: 01307 BIDDE NO.: 01307 BIDDE NO.: 01307 BIDDE NUMBEL SCURLEXTENT) : C.1.2 EMARTHE ECONOMISTING IN CONDITION FUNCTIONING C.2. DEGARTHERENT EROSION (EXTENT) : CONDITION FUNCTIONING CONDITION FUNCTIONING CONDITION FUNCTIONING CONDITION FUNCTIONING CONDITION FUNCTIONING CONDITION FUNCTIONING CONDITION FUNCTIONING CONDITION FUNCTIONING CONDITION FUNCTION (DEBRIS, GROWTHS) : C.3. SUBTRUCTION (DEBRIS, SUBTRUCTURE) : C.3. SUBTRUCTION (DEBRIS, S |
| 61- CHANNEL & CHANNEL PROTECTION : N/A 61.1 CHANNEL SCURRENTERS 61.2 EMBANDMENT PROSIDENCETON : N/A 61.2 EMBANDMENT PROSIDENCETON : N/A 61.3 PROTECTIVE PROTECTIVE PROTECTION FUNCTION FUNCT |
| 01. CRANNEL SCOUR (REFERIN): 01.1. CRANNEL SCOUR (REFERIN): 01.2. EXEMANMENT EROSION (EXTENT): 01.3. PROTECTIVE DEVICE 01.4. TYPE 01.5. PROTECTIVE DEVICE 01.6. SPUT DIRES, JETTIES 01.7. COBSTRUCTION (DEERLS, GROWTES): 01.6. SPUT DIRES, JETTIES 01.7. COBSTRUCTION (DEERLS, GROWTES): 01.8. CHANNEL CHANGE: YES NO 01.9. ADEQUATE MATERIAL: YES NO IF YES, EXPLAIN 01.10. SURCOUDING ARTERIAL: YES NO IF YES, EXPLAIN 01.11. DOCATION OF PIERS ANO/OR ADDIMENTS: DETRIMENTAL: YES NO 01.12. OTHER PEATORES THAT MAY AFFECT STRUCTURE: 02.2. CULVERT AND RETAINING MALLS : N/A RATING :N CULVERT COMMENTS: 02.1. DARREL [62. JEEADMALL [62. SCUT-OFFWALL [62. 4RETAINING WALL] NATERIAL |
| 01. CRANNEL SCOUR (REFERIN): 01.1. CRANNEL SCOUR (REFERIN): 01.2. EXEMANMENT EROSION (EXTENT): 01.3. PROTECTIVE DEVICE 01.4. TYPE 01.5. PROTECTIVE DEVICE 01.6. SPUT DIRES, JETTIES 01.7. COBSTRUCTION (DEERLS, GROWTES): 01.6. SPUT DIRES, JETTIES 01.7. COBSTRUCTION (DEERLS, GROWTES): 01.8. CHANNEL CHANGE: YES NO 01.9. ADEQUATE MATERIAL: YES NO IF YES, EXPLAIN 01.10. SURCOUDING ARTERIAL: YES NO IF YES, EXPLAIN 01.11. DOCATION OF PIERS ANO/OR ADDIMENTS: DETRIMENTAL: YES NO 01.12. OTHER PEATORES THAT MAY AFFECT STRUCTURE: 02.2. CULVERT AND RETAINING MALLS : N/A RATING :N CULVERT COMMENTS: 02.1. DARREL [62. JEEADMALL [62. SCUT-OFFWALL [62. 4RETAINING WALL] NATERIAL |
| 61.2 EMEANMENT EROSION(EXTENT) : (CONDITION FUNCTIONING TYPE MATERIAL RATING (TYPE MATERIAL (TYPE MATERIAL RATING (TYPE MATERIAL (TYPE TYPE TYPE TYPE TYPE TYPE TYPE TYP |
| 61.2 EMEANMENT EROSION(EXTENT) : (CONDITION FUNCTIONING TYPE MATERIAL RATING (TYPE MATERIAL (TYPE MATERIAL RATING (TYPE MATERIAL (TYPE TYPE TYPE TYPE TYPE TYPE TYPE TYP |
| 61.3 PROTECTIVE DEVICE Image: state in the image: state in the image: state in the image: state in the image: state |
| 61.3 PROTECTIVE DEVICE TYPE MATERIAL RATING 61.3 PROTECTIVE DEVICE 61.4 PENDER SYSTEM |
| 61.3 PROTECTIVE DEVICE TYPE MATERIAL RATING 61.3 PROTECTIVE DEVICE 61.4 PENDER SYSTEM |
| 61.3 PROTECTIVE DEVICE YES NO 61.4 FENDER SYSTEM 61.4 FENDER SYSTEM 61.5 RIP RAP 61.6 SPUR DIKES, JETTIES 61.7 OBSTRUCTION (DEBRIS, GROWTHS): 61.8 CHANNEL CHANGE: YES NO IF YES, EXPLAIN 61.9 ADEQUATE WATERWAR: YES NO IF YES, EXPLAIN 61.10 SURROUNDING AREA: FLOODING: YES NO IF YES, EXPLAIN 61.11 LOCATION OF PIERS AND/OR ABUTWENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.11 LOCATION OF PIERS AND/OR ABUTWENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: [62. 1BARREL 62. 2BEADWALL 62. 3CUT-OFFWALL 62. 4RETAINING WALL WATERIAL |
| 61.3 PROTECTIVE DEVICE 61.4 FENDER SYSTEM 61.5 RIP RAP 61.6 SPUR DIRES, JETTIES 61.7 OBSTRUCTION (DEBRIS, GROWTHS): 61.8 CHANNEL CHANGE: YES NO DETRIMENTAL: YES NO IF YES, EXPLAIN 61.9 ADEQUATE WATERWAY: YES NO IF NO, EXPLAIN 61.10 SURCOMDINA ARA: FLOODING: YES NO IF YES, EXPLAIN 61.11 LOCATION OF PIERS AND/OR ADUTMENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.12 OTHER FRATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: |
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| 61.4 FENDER SYSTEM 61.5 RIP RAP 61.6 SPUR DIKES, JETTIES 61.7 OBSTRUCTION (DEBRIS, GROWTHS): 61.8 CHANNEL CHANGE: YES NO IF YES, EXPLAIN 61.9 ADEQUATE WATERWAY: YES NO IF YES, EXPLAIN 61.10 SURROUNDING AREA: FLOODING: YES NO IF YES, EXPLAIN EROSION: YES NO IF YES, EXPLAIN 61.11 LOCATION OF PIERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: |
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| 61.6 SPUR DIKES, JETTIES 61.7 OBSTRUCTION (DEBRIS, GROWTHES): 61.8 CHANNEL CHANGE: YES NO DETRIMENTAL: YES NO IF YES, EXPLAIN 61.9 ADEQUATE WATERWAY: YES NO IF YO, EXPLAIN 61.10 SURROUNDING AREA: FLOODING: YES NO IF YES, EXPLAIN EROSION: YES NO IF YES, EXPLAIN 61.11 LOCATION OF PIERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: |
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| <pre>61.8 CHANNEL CHANGE: YES NO DETRIMENTAL: YES NO IF YES, EXPLAIN 61.9 ADEQUATE WATERWAY: YES NO IF NO, EXPLAIN 61.10 SURROUNDING AREA: FLOODING: YES NO IF YES, EXPLAIN 61.11 LOCATION OF PIERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N 62- CULVERT AND RETAINING WALLS :N/A RATING :N 62- CULVERT COMMENTS: 62- CULVERT AND RETAINING WALLS :N/A 63- CULVERT AND RETAINING WALLS :N/A 64- CULVERT AND RETAINING WALLS :N/A 65- CULVERT AND RETAINING WALL 65- CULVERT AND RETAIN AND</pre> |
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| <pre>61.8 CHANNEL CHANGE: YES NO DETRIMENTAL: YES NO IF YES, EXPLAIN 61.9 ADEQUATE WATERWAY: YES NO IF NO, EXPLAIN 61.10 SURROUNDING AREA: FLOODING: YES NO IF YES, EXPLAIN 61.11 LOCATION OF PIERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N 62- CULVERT AND RETAINING WALLS :N/A RATING :N 62- CULVERT COMMENTS: 62- CULVERT AND RETAINING WALLS :N/A 63- CULVERT AND RETAINING WALLS :N/A 64- CULVERT AND RETAINING WALLS :N/A 65- CULVERT AND RETAINING WALL 65- CULVERT AND RETAIN AND</pre> |
| DETRIMENTAL: YES NO IF YES, EXPLAIN 61.9 ADEQUATE WATERWAY: YES NO IF NO, EXPLAIN 51.10 SURROUNDING AREA: FLOODING: YES NO IF YES, EXPLAIN 61.11 LOCATION OF PIERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 63- HARREL 62.2HEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL 64- HARREL 64- HEADWALL |
| <pre>61.9 ADEQUATE WATERWAY: YES NO IF NO, EXPLAIN 61.10 SURROUNDING AREA: FLOODING: YES NO IF YES, EXPLAIN 61.11 LOCATION OF PIERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 62- LIBARREL 62.2 BEADWALL 62.3 CUT-OFFWALL 62.4 RETAINING WALL MATERIAL 62.1 BARREL 62.2 BEADWALL 62.3 CUT-OFFWALL 62.4 RETAINING WALL 63- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 64- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 65- CULVERT AND RETAINING WALL : 5- CULVERT COMMENTS: 65- CULVERT AND RETAINING WALL : 5- CULVERT : 5- CULVERT COMMENTS: 65- CULVERT AND RETAINING WALL : 5- CULVERT : 5- CU</pre> |
| 61.10 SURROUNDING AREA: FLOODING: YES NO IF YES, EXPLAIN EROSION: YES NO IF YES, EXPLAIN 61.11 LOCATION OF PIERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: 62.1BARREL 62.2BEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL MATERIAL |
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| 61.11 LOCATION OF PIERS AND/OR ABUTMENTS: DETRIMENTAL: YES NO IF YES, EXPLAIN 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: |
| IF YES, EXPLAIN 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: |
| 61.12 OTHER FEATURES THAT MAY AFFECT STRUCTURE: 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: [62.1BARREL] 62.2BEADWALL] 62.3CUT-OFFWALL 62.4RETAINING WALL MATERIAL |
| 62- CULVERT AND RETAINING WALLS :N/A RATING :N CULVERT COMMENTS: |
| 62.1BARREL 62.2BEADWALL 62.3CUT-OFFWALL 62.4RETAINING WALL |
| MATERIAL |
| MATERIAL |
| MATERIAL |
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| CONDUCTON PATTICI |
| CONDITION RATING |
| FUNCTIONING (X-N) |
| CRACKING(F-M-O)] |
| SPALLING (S-L) |
| SCALING (L-M-H-S) |
| CORROSION (L-M-S) |
| SETTLEMENT (Y-N) |
| and and the second s |
| ALIGNMENT (Y-N) |
| PAINT (G-F-P-N-U) |
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| 63- METHOD USED TO DETERMINE OPERATING RATING 2 |
| 64 - OPERATING RATING : |
| 65- METHOD USED TO DETERMINE INVENTORY RATING 2 |
| |
| 200 |
| 66- INVENTORY RATING : |

| 21 | AL SYSTEM | PUERTO RICO HIGHWAY AUTHORITY | PAGE 5 OF 7 |
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| | | BRIDGE STUDIES AND EVALUATION OFFICE | PAGE 5 OF / |
| IDGE | No.: 01307 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| | | | 5 ha |
| 67- STF | NUCTURAL EVALUATIO | : พอ | |
| | | | 1 |
| | LIGTH TO MODER | RATE CORROSION AT STEEL PLATES, RAILINGS, UPPER CHORD & STRIN- | V |
| | | CORROSION AT BRACINGS & BETWEEN LOWER CHORDS & FLOORBEAMS. | |
| | LIGHT CORROSIC | ON AT STEEL COLUMNS & STAIRS. MODERATE CORROSION AT REST AREA. | |
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| 68~ DEC | K GEOMETRY : | | OIA. |
| | ; | | |
| | N/A. | | 1 |
| | | 5 | 1 |
| 69- UND | ERCLEARANCE, VERT | TICAL & HORIZONTAL : | Disk |
| | | 1 | 09 |
| | EQUAL TO PRESE | ENT MINIMUM CRITERIA. | |
| | | | |
| 70- BRI | DGE POSTING : | N/A. | |
| | | | 5 |
| | | | |
| 71- WAT | ERWAY ADEQUACY : | | N |
| | | | |
| | N/A. | | |
| 70 | MOTE - CONSTRUCT TH | | |
| | | HAN 100 YEARS. SLIGHT - 11 TO 100 YEARS. OCASSIONAL - 3 TO 10 YEARS. FREQUENT - LESS NOR INCONVENIENCE. HIGHWAY FASSABLE IN A MATTER OF HOURS. SIGNIFICANT - TRAFFIC DELAYS OF | |
| | | NAN THEORYDATINES. HIGHMAN PASABLE IN A MATTER OF HOURS. SIGNIFICANT - TRAFFIC DELAYS OF | UP TU SEVERAL DAYS |
| SE | VERE - LONG TERM | DELAYS TO TRAFFIC WITH RESULTING HARDSHIP | |
| 2276 | | | |
| 72- APP | ROACH ROADWAY ALI | IGNMENT : | Nimer |
| | | | 6 |
| | N/A. | | Ne |
| | | · . | 1- |
| 72.2 | SLAB OR PAVEMENT | CONDITION : MATERIAL : | (/ |
| | CRACKING: F N | N O SPALLING: L S SCALING: L M H S UNNEVEN: YES NO ROUGH: YES | NO |
| | SETTLEMENT: YES | 5 NO MOVEMENT: APPROACH SLAB-BACKWALL: YES NO BREAKING UP: EXCESSIVE DEFORM | ATION: |
| | SAFETY: HAZARDOU | | |
| 1 | | NT-APPROACE SLAB: YES NO EMBANKMENT: CONDITION: | |
| | | NCTIONING: YES NO EROSION: YES NO IF YES, EXPLAIN | |
| | CONSTRUCTION: FL | New York 1 (1944) 1 (1960-1921) 1 (1963) | |
| | | PEGRITY IMPAIRED: YES NO IF YES, EXPLAIN | |
| 10,000 00 000 0 | INDESIRABLE IMPAC | | |
| 100 00000000000000000000000000000000000 | JOINTS: TYPE: | INADEQUATE: YES NO SATISPACTORY ALIGNMENT: YES NO | |
| 20032000000000000000000000000000000000 | SUARDRAIL: TYPE: | | |
| 2.0 | ALIGNMENT: HORIZO SAFETY: SECURELY | | |
| 1 | AMAIL DECORELY | (ATTACHED: YES NO PEDESTRIAN HAZARDS: YES NO | |
| 72- APPI | NOACH ROADWAY - CO | XONMENTS: | |
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| RAL SYSTEM | PUERTO RICO HIGHWAY AUTHORITY | |
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| | BRIDGE STUDIES AND EVALUATION OFFICE | PAGE 6 OF 7 |
| IDGE NO. :01307 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| | | |
| | ====================================== | |
| 75- TYPE OF WORK : | REHABILITATION | 352 . |
| 76- LENGTH OF STRUCTURE IMPROVEME | NT : 55.63 MT. (182.47 FT) | 000555 6 |
| | ====================================== | V |
| 89- RESERVED | | |
| 90- INSPECTION DATE : | | |
| 91- DESIGNATED INSPECTION FRECUEN | CY : 24 MONTES | 0598 |
| 92- CRITICAL FEATURE INSPECTION : | | 24 |
| 93- CRITICAL FEAT. INSPECT. DATE: | N/A | N N N |
| FRACTURE CRITICAL | UNDERWATER OTHER | |
| | | |
| a a È | IMPROVEMENT COST | |
| 94- BRIDGE IMPROVEMENT COST : | | 000000 |
| 95- ROADWAY IMPROVEMENT COST : | N/A | 000000 |
| 96- TOTAL PROJECT COST : | (55.63X2.84X\$1315¥10\$)-\$20.726 | |
| 97- YEAR OF IMPROVEMENT COST ESTIN | MATED : 1998 | 000021 |
| | | |
| | | |
| 98- BORDER BRIDGE : | | |
| 99- BORDER BRIDGE STRUCTURE NUMBER | | / |
| 100- STRAHNET HIGHWAY DESIGNATION | : DEFENSE KICHWAY | -2 k |
| 101- PARALLEL STRUCTURE DESIGNATIO | N : NO PARALLEL STRUCTURE | N |
| 102- DIRECTION OF TRAFFIC : | TRAFFIC NOT CARRIED | |
| 103- TEMPORARY STRUCTURE DESIGNATI | ON : | , |
| 104- HIGHWAY SYSTEM OF THE INVENTO | RY ROUTE : | role |
| 105- FEDERAL LANDS HIGHWAYS : | | 0 |
| 106- YEAR RECONSTRUCTION : | NO RECONSTRUCTION | 0000 |
| 107- DECK STRUCTURE TYPE : | בונה לכד דוריבולו | 5 |
| 108- WEARING SURF. / PROTECT. SYSTEM | M : OTHER - NONE - NONE | 900 |
| 109- AVERAGE DAILY TRUCK TRAFFIC : | | 900 |
| 10- DESIGNATED NATIONAL NETWORK : | PART OF NETWORK | 0.0 |
| 11- FIER OR ABUT. PROTECTION (NAVI | IGATION) :N/A | 1 |
| 112- NBIS BRIDGE LENGTH : | YES | Y |
| 113- SCOUR CRITICAL BRIDGE : | N/A | N |
| 14- FUTURE AVERAGE DAILY TRAFFIC : | 92 703 | N 092703 |
| 15- YR. OF FUTURE A.D.T. : | 2014 | 2016 |
| 16- MINIM. NAVIG. VERT. CLEARANCE | : N/A | 2016 |
| VERTICAL LIFT BRIDGE : | | |
| 17- SUFFICIENCY RATING : | | |
| 25- PRIORITY RATING: | | |
| 27- EVALUATION DATE : | 8-MAYO-98 | |
| 30- CRITICAL FRACTURE INSP. DATE : | 8-мауо-98 | 050898 |
| ENGINEER : INEABELLE VELES | | |
| | | |
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| RAL SYSTEM | PUERTO RICO HIGHWAY AUTHORITY | PAGE 7 OF 7 |
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| | BRIDGE STUDIES AND EVALUATION OFFICE | PAGE / OF / |
| .IDGE NO. :01307 | BRIDGE REINSPECTION & EVALUATION REPORT | |
| | STATISTICS & STATISTICS REPORT | |
| AUXILIARY ITEMS | | |
| 1-SIGNS | | |
| TYPE: ORIENTACION "SAN JUAN | N - BAYAMON - RIO PIEDRAS" | |
| MATERIAL: ALUMINIO | | |
| CONDITION: 7 | | |
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| | | |
| REMARKS : | | - |
| THE REHABILITATION CO | NSIST IN REPAIR ALL DEFICIENCIES DESCRIBED ON THE | |
| ITEM #67. | DESCRIPTION OF THE | |
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E.7 September 24, 1993

| PUERTO RICO HIGHWAY AUTHORITY | PAGE 1 OF 3 |
|---|-----------------------------|
| . HIGHWAY SYSTEM ADMINISTRATION OFFICE | DATE : 09/30/93 |
| BRIDGE REFURT | 「【件曰 : 10:49:44 |
| FEDERAL SYSTEM BRIDGE MU. : 01307 - ROAD MD. : PR 26 - KM. NO. | |
| $R_{R}^{r} R_{R}^{r} R} R_{R}^{r} R^{r} R^{r} R^{r} R^{r} R^{r} R}^{r} R} R^{r} R}^{r} R^{r} R}^{r} R^{r} R^{r}} R^{r} R^{r}} R^{r} R^{r} R}^{r} R^{r}} R^{r} R^{r}} R^{r} R^{r}} R^{r}} R^{r} R^{r}} R^{r} R^{r}} R^{r} R^{r} R^{r}} R^{r} R^{r}} R^{r}} R^{r} R^{r} R^{r}} R^{r} R^{r}} R^{r} R^{r}} R^{r} R^{r}} R^{r}} R^{r} R^{r}} R^{r} R^{r}} R^{r}} R^{r} R^{r}} R^{r} R^{r}} R^{r} R^{r}} R^{r}} R^{r} R^{r}} R^{r} R^{r}} R^{r} R^{r}} R^{r} R^{r} R^{r}} R^{r} R^{r} R^{r}} R^{r} R^{r} R^{r} R$ | r (10400) |
| HERRICH DENTIFICATION | |
| 1- STATE : Commonwealth of Puerto Rico | . 721 |
| 2- STATE HIGHWAY DEPARTMENT : | 01 |
| 3- COUNTY (PARISH) CODE : | 127 |
| 4- PLACE CODE : | 76770 |
| 5- INVENTORY ROUTE : | 211000030 |
| 7- FACILITY CARRIED BY STRUCTURE : | PEDESTRIAN WALKWAY PR 26 |
| 8- STRUCTURE NUMBER : | 0(307) |
| 9- LOCATION ; | BALDORIOTY DE CASTRO AVE. |
| 11- MILEPOINT : | 004500 |
| 16- LATITUDE : | 18273 |
| 17- LONGITUDE : | 066031 |
| 98- BORDER BRIDGE : | |
| 99- BORDER BAIDGE STRUCTURE NUMBER : , | |
| Privati portugitari internativa internativa | |
| 43- STRUCTURE TYPE, MAIN : STEEL TRUSS DECK | -2015 |
| 44- STRUCTURE TYPE APPR. : | 309 000 |
| 45- NUMBER OF SPAN IN MAIN UNIT: | 000 |
| 46- NUMBER OF APPRICAEH SPAN ; | 0000 |
| 107- DECK STRUCTURE TYPE : | 5 |
| 108- WEARING SURF. / PROTECT. SYSTEM : OTHER - NONE - NONE | 900 |
| | |
| ACCOUNTS AND SERVICE AND SERVICE AND SERVICE AND SERVICE | 00 |
| 19- BYPASS, DETOUR LENGTH (NEAREST MILE) : | 00 |
| 28- LANES ON AND UNDER STRUCTURE : | 1968 0008 |
| 27- A.D.T. OF INVENTORY ROUTE : | 075400 |
| 30- YEAR OF A.D.T. (| 70-07 |
| 42- TYPE OF SERVICE : | 31 |
| 105- YEAR RECONSTRUCTION : | 0000 |
| 109- AVERAGE DAILY TRUCK TRAFFIC : | 04 |
| ====================================== | |
| 10- INV. ROUTE, MIN, CLEAR, (0,01m) : | - 1701 |
| 32- APPROACH ROADWAY WIDTH : | 095 |
| 33- BRIDGE MEDIAN : | 0 |
| 34- SKEW ANGLE : | 00 |
| 35- STRUCTURE FLARED : WO | 0 |
| 47- INV. ROUTE, TOTAL HUR17. CLEARANCE : 10.82 MT (35.49 FT) | 354 |
| 48- LENGTH OF MAXIMUM SPAN : | 0071 |
| 49- STRUCTURE LENGTH : 55.63 MT (182.47 FT) | 000183 |
| 30- CURB OR SIDEWALK WIDTHS ; | 000000 |
| 51- BRIDGE ADADWAY WIDTH, CURB TO CURB : | 0054 |
| 52- DECK WIDTH, OUT 7D OUT : | 0093 |
| 53- MIN. VENI. LLEAN, OVEN ENINGE RUADWAY : | 9999 U1701 |
| 54 MINIMUM LATERAL UNDERCLEARANCE ON RIGHT : | H1701 H055 |
| 56- MINIMUM LATERAL UNDERCLEARANCE ON LEFT : | 045 |
| and examples possible contraction of the second structure structure as we be all the tractions and the second structure as we be all the tractions of the second structure as we be all the second structures as we be all the second structures as we be all the second structures as we all | 2977 |
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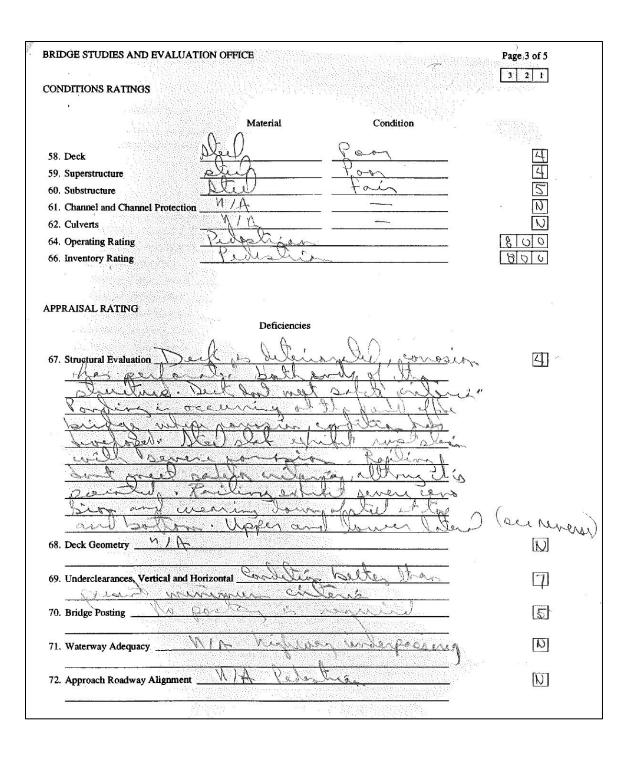
| PUERTO RICO HIGHMAY AUTHORITY HIGHWAY SYSTEM ADMINISTRATION OFFICE | PAGE 2 OF 3 | | | | |
|--|--|--|--|--|--|
| FEDERAL SYSTEM BRIDGE NO. : 01307 - ROAD NO. : PR 26 | - kỹ, NO, : 004500 | | | | |
| =====CLASSIFICATION======= | | | | | |
| 20- TOLL : | HIGHWAY 1 LEL STRUCTURE N IFIC NOT CARRIED 0 N/A 3. 1 VETWORK I | | | | |
| wassessessanswidtERWAYsassessessans | | | | | |
| 38- NAVIGATION CONTROL : 39- NAVIGATION VERTICAL CLEARANCE : 40- NAVIGATION HORIZONTAL CLEARENCE : 111- PIER OR ABUT. PROTECTION (NAVIGATION) : | ND 000 | | | | |
| ====================================== | | | | | |
| 75- TYPE OF WORK : REHABILITAT: 76- LENGTH OF STRUCTURE INPROVEMENT : 55.63 MT 74- ERIDGE INFROVEMENT COST : N/A 95- RUADWAY IMFROVEMENT COST : N/A 96- TOTAL PROJECT COST : N/A 97- YEAR OF IMPROVEMENT COST ESTIMATED : 143.99% 114- FUTURE AVERAGE DAILY TRAFFIC : 143.99% 115- YR. OF FUTURE A.D.T. : ************************************ | (182.47 FT) 00018 2 000000 000000 ()=\$8,274 000008 | | | | |
| 31- DESIGN LOAD : 41- STRUCT, OPEN, POSTED OR CLOSED TO TRAFF, : 64- OPERATING RATING : 66- INVENTORY RATING : 70- BRIDGE FOSTING : N/A. | | | | | |
| | | | | | |
| <i>2</i> | ION ANALYSIS SFACTURY 6 7 7 N N | | | | |

| 3 | | |
|--|---|---|
| | PUERTO RICO HIGHNAY AUTHORITY HIGHNAY SYSTEM ADMINISTRATION OFFICE | PAGE 3 OF 3 |
| FEDERAL SYSTEM | BRIDGE MO. : 01307 - RDAD MO. : FR 26 - KH. NO | i. : 004500 |
| 67- STRUCTURAL EVALUATION : STEEL PLATES, RAILLINGS AND CORROSION IN THE STAIRS. | FLOOR BEAMS HAVE LIGHT CORROSION, MODERATE | |
| i. | | |
| e u | | |
| 48- JECK GEOMETRY ; | | N |
| bracket. | ral : | |
| Equal to present minimum crit | | e 6 a 6 a 7 a 6 a 7 a 7 a 7 a 7 a 7 a 7 a |
| 71- WATERWAY ADEQUACY : | | N |
| N/A. | | |
| 72- APPROACH ROADWAY ALIGNMENT : | | N |
| N/A, | | |
| 36- TRAFFIC SAFETY FEATURES : 113- SCOUR CRITICAL BRIDGES : | N/A | ชุ N |
| | ADDITIONAL COMMENTS:======== | |
| 90- INSPECTION DATE : 91- DESIGNATED INSPECTION FREQUENCY : , 92- CRITICAL FEATURE INSPECTION : 93- CRITICAL FEAT. INSPECT. DATE: | SEPTEMBER 24, 1993. 24 MUNTHS N/A | . 0993 24 N N N |
| 117- SUFFICIENCY RATING : 126- FIELD INSPECTION DATE : 127- INSPECTION EVAL. DATE : | 072493 072493 072493 | ³ |
| 131- EVALUATUR ENGINEER : | fau | ien (lugy Rosaus |
| THE REMARKLITATION CONSIST IN REP ITEN #67. | AIR ALL DEFICIENCIES DESCRIBED ON THE | V |

E.8 February 28, 1991

| | BRIDGE STUDIES AND EVALUATION OFFICE | |
|-----|---|---------------------------------------|
| | PUERTO RICO HIGHWAY AUTHORITY | |
| | | |
| 3 | | Page 1 of 5 |
| 25 | • | · · · · · · · · · · · · · · · · · · · |
| | 1307 0026 | 00430 |
| | Bridge No. Road No. | Km.No. |
| | | |
| | BRIDGE INVENTORY | |
| 25 | | |
| | | |
| IDE | ENTIFICATION | |
| | Code Position | |
| i | 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 | 6 5 4 3 2 1 |
| | | |
| 1. | 1. State Code Commonwealth of Puerto Rico | 7 2 1 |
| 2. | 2. State Highway Department District _ A an Juran | 01 |
| 3. | 3. County (Parish) Code Jan Juan | 122 |
| 4. | 4. Place Code Ub 6 , | 74270 |
| 5. | 5. Inventory Route <u>2-1-1-00003-0</u> 2/1 | 000030 |
| 6. | 5. Features Intersected _ Pedestrian Walkway | |
| | PEDESTRIAN WALKWAY | |
| 7. | 7. Facility Carried by Structure P.R. 26 | |
| | PR 26 | |
| 8. | 3. Structure Number 1307 $107/1$ 000000000 | 0/3021 |
| 9. | . Location Baldonioty De Castro avenue | |
| | BAYL JOR ID 7 1 3 E CASTR | OAVE |
| 10. | D. Inventory Route, Minimum Vertical Clearance (0.01 m) 4.80 (15-174) | 1509 |
| 11. | I. Milepoint 4.30 | 004300 |
| 16. | 5. Latitude 18 Degrees 27.3 Minutes | 18273 |
| 17. | 7. Longitude L6 Degrees 0.3.1 Minutes | 066031 |
| 19. |). By Pass, Detour Length (Nearest mile) Structure over Highway | 00 |
| | | |
| | | |
| CL | LASSIFICATION | |
| 20. |). Toll Jole Pree | 3 |
| 21. | . Maintenance Responsibility DT.PW. | 07 |
| 22. | 2. Owner State Highway Department | 67 |
| 26. | 5. Functional Classification of Inventory Route Unberg Zoferst. Te | |
| | | |
| | | |

| B | RII | DGE STUDIES AND EVALUATION OFFICE Page 2 of 5 |
|------|------|---|
| | | 6 5 4 3 2 1 |
| | | |
| A | GE | AND SERVICE |
| 27 | | Year Built 1968 1268 |
| 28 | 3. | Lanes on the Structure and Under the Structure |
| - 29 | 9. | Average Daily Traffic /00,000 // 000 |
| 30 |). | Year of Average Daily Traffic 1987 |
| | | |
| | | |
| S | FR | UCTURE DATA |
| 3 | 1. • | Design Load Pedestrian 2 |
| 33 | 2. | Approach Roadway Width 24.80m (8/34) 08/ |
| 33 | 3. | Bridge Median Open Closed NM |
| 34 | 4. | Skew |
| 3 | 5. | Structure Flared Yes L No |
| 30 | 6. | Traffic Safety Features N-N-N-N NANN |
| 3 | 7. | Historical Significance |
| 3 | 8. | Navigation Control Yes No NA |
| 3 | 9. | Navigation Vertical Clearance Yes No |
| 4 | 0. | Navigation Horizontal Clearance Yes 4 No 0000 |
| 4 | 1. | Structure, Open, Posted, or Closed to Traffic |
| 4 | 2. | Type of Service Pedestrian over Highway 3 / |
| 4 | 3. | Structure Type, Main Atech truss Deck 309 |
| 4 | 4. | Structure Type, Approach Spans OOO |
| 4 | 5. | Number of Spans in Main Unit 2 |
| 4 | 6. | Number of Approach Spans 720ne 0000 |
| 4 | 7. | Inventory Route, Total Horizontal Clearance $k = \frac{10.4 \text{ m} (34.1)}{(34.1)}$ $R = \frac{14.4 \text{ m} (47.2)}{(34.1)}$ |
| 4 | 8. | Length of Maximum Span 20.46-7 (67.11) |
| 4 | 9. | Structure Length 43.02-7 (141.11) 000141 |
| 5 | 0. | Curb or Sidewalk Widths 14 None B= None 00000 |
| 5 | 1. | Bridge Roadway Width, Curb-to-Curb 1.62 M (5:31) 0053 |
| 5 | 2. | Deck Width, Out-to-Out 2.62 M. (9.25.) |
| 5 | 3. | Minimum Vertical Clearance Over Bridge Roadway Unlimited 99999 |
| 5 | 4. | Minimum Vertical Underclearance $H \frac{48m}{15:74}$ R N $H \frac{1509}{15:74}$ |
| 5 | 5. | Minimum Lateral Underclearance on Right H 1364 (446) R N H 045 |
| 5 | i6. | Minimum Lateral Underclearance on Left |
| | | |



| IS 14 13 12 11 10 9 7 6 5 5 2 1 PROPOSED IMPROVEMENTS A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A. | BRIDGE STUDIES AND EVALUATION OFFICE | Page 4 of 5 |
|--|--|---|
| 75. Type of Work K.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M | 15 14 13 12 11 10 9 8 | 7 6 5 4 3 2 1 |
| 75. Type of Work K.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M | | |
| 75. Type of Work | PROPOSED IMPROVEMENTS | SIL |
| INSPECTIONS 89. (Reserved) 20.11 90. Inspection Date 20.11 91. Designated Inspection 21.4 92. Critical Feature Inspection 21.4 93. Critical Feature Inspection 21.4 94. Bridge Inspection Date 21.4 95. Critical Feature Inspection 21.4 96. There Special Inspection 21.4 97. Critical Feature Inspection 21.4 98. Underwater Inspection 21.4 99. Oritical Feature Inspection 21.4 91. Orier Special Inspection 21.4 92. Critical Feature Inspection 21.4 93. Critical Feature Inspection 21.4 94. Bridge Inspecton 21.4 95. Roadway Inprovement Cost 21.5 96. Total Project Cost 21.5 97. Year of Improvement Cost Estimated 21.9 98. Border Bridge Structure Number 11.4 99. Border Bridge Structure Designation 21.4 100. Defense Highway Designation 21.4 101. Parallel Structure Designation 21.4 103. Temporary Structure Designation 21.4 104. Highway System of the Inventory | 75. Type of Work | |
| 91. Designated inspection Frequency 24 Man M 92. Critical Feature Inspection A. Fracture Critical Details B. Underwater Inspection A. C. Other Special Inspection Date A. A. Fracture Critical Details PT 93. Critical Feature Inspection Date PT A. Fracture Critical Details PT 93. Critical Feature Inspection Date PT A. Fracture Critical Details PT 94. Bridge Improvement Cost PT 95. Roadway Improvement Cost PT 96. Total Project Cost PT 97. Year of Improvement Cost Estimated PA 98. Border Bridge MIA 99. Border Bridge Structure Designation PT 100. Defense Highway Designation PT 101. Parallel Structure Designation PT 103. Temporary Structure Designation PT 104. Highway System of the Inventory Rovie PT | 76. Length of Structure Improvement 43. 3°2 m - 141-11 | |
| 91. Designated inspection Frequency 24 Man M 92. Critical Feature Inspection A. Fracture Critical Details B. Underwater Inspection A. C. Other Special Inspection Date A. A. Fracture Critical Details PT 93. Critical Feature Inspection Date PT A. Fracture Critical Details PT 93. Critical Feature Inspection Date PT A. Fracture Critical Details PT 94. Bridge Improvement Cost PT 95. Roadway Improvement Cost PT 96. Total Project Cost PT 97. Year of Improvement Cost Estimated PA 98. Border Bridge MIA 99. Border Bridge Structure Designation PT 100. Defense Highway Designation PT 101. Parallel Structure Designation PT 103. Temporary Structure Designation PT 104. Highway System of the Inventory Route PT | | |
| 91. Designated inspection Frequency 24 Man M 92. Critical Feature Inspection A. Fracture Critical Details B. Underwater Inspection A. C. Other Special Inspection Date A. A. Fracture Critical Details PT 93. Critical Feature Inspection Date PT A. Fracture Critical Details PT 93. Critical Feature Inspection Date PT A. Fracture Critical Details PT 94. Bridge Improvement Cost PT 95. Roadway Improvement Cost PT 96. Total Project Cost PT 97. Year of Improvement Cost Estimated PA 98. Border Bridge MIA 99. Border Bridge Structure Designation PT 100. Defense Highway Designation PT 101. Parallel Structure Designation PT 103. Temporary Structure Designation PT 104. Highway System of the Inventory Rovie PT | NT-SHORE AND A SHORE AND A | |
| 91. Designated inspection Frequency 24 Man M 92. Critical Feature Inspection A. Fracture Critical Details B. Underwater Inspection A. C. Other Special Inspection Date A. A. Fracture Critical Details PT 93. Critical Feature Inspection Date PT A. Fracture Critical Details PT 93. Critical Feature Inspection Date PT A. Fracture Critical Details PT 94. Bridge Improvement Cost PT 95. Roadway Improvement Cost PT 96. Total Project Cost PT 97. Year of Improvement Cost Estimated PA 98. Border Bridge MIA 99. Border Bridge Structure Designation PT 100. Defense Highway Designation PT 101. Parallel Structure Designation PT 103. Temporary Structure Designation PT 104. Highway System of the Inventory Route PT | INSPECTIONS N/A | |
| 91. Designated inspection Frequency 24 Man M 92. Critical Feature Inspection A. Fracture Critical Details B. Underwater Inspection A. C. Other Special Inspection Date A. A. Fracture Critical Details PT 93. Critical Feature Inspection Date PT A. Fracture Critical Details PT 93. Critical Feature Inspection Date PT A. Fracture Critical Details PT 94. Bridge Improvement Cost PT 95. Roadway Improvement Cost PT 96. Total Project Cost PT 97. Year of Improvement Cost Estimated PA 98. Border Bridge MIA 99. Border Bridge Structure Designation PT 100. Defense Highway Designation PT 101. Parallel Structure Designation PT 103. Temporary Structure Designation PT 104. Highway System of the Inventory Route PT | 89. (Reserved) | 5291 |
| 92. Critical Feature Inspection A. Fracture Critical Details B. Underwater Inspection C. Other Special Inspection Date A. Fracture Critical Details B. Underwater Inspection Date A. Fracture Critical Details B. Underwater Inspection C. Other Special Inspection C. Other Special Inspection C. Other Special Inspection B. Underwater Inspection C. Other Special Inspection C. Other Special Inspection S. Bridge Improvement Cost 95. Roadway Improvement Cost 96. Total Project Cost 97. Year of Improvement Cost Estimated 199. Border Bridge 99. Border Bridge 99. Border Bridge 100. Defense Highway Designation 101. Parallel Structure Designation 102. Direction of Traffic 103. Temporary Structure Designation 104. Highway System of the Inventory Route | 24 1 | 774 |
| A. Fracture Critical Details B. Underwater Inspection C. Other Special Inspection Date A. Fracture Critical Details B. Underwater Inspection B. Underwater Inspection C. Other Special Inspection C. Other Special Inspection C. Other Special Inspection C. Other Special Inspection P. Bridge Improvement Cost 95. Roadway Improvement Cost 96. Total Project Cost 97. Year of Improvement Cost Estimated 199. Border Bridge 99. Border Bridge Structure Number 100. Defense Highway Designation 101. Parallel Structure Designation 102. Direction of Traffic 103. Temporary Structure Designation 104. Highway System of the Inventory Roote | | |
| B. Underwater Inspection | | NT |
| C. Other Special Inspection | | N- |
| 93. Critical Feature Inspection Date A. Fracture Critical Details B. Underwater Inspection C. Other Special Inspection IMPROVEMENT COSTS 94. Bridge Improvement Cost 95. Roadway Improvement Cost 96. Total Project Cost 97. Year of Improvement Cost Estimated 198. Border Bridge 99. Border Bridge Structure Number 100. Defense Highway Designation 101. Parallel Structure Designation 102. Direction of Traffic 103. Temporary Structure Designation 104. Highway System of the Inventory Route | | PT |
| A. Fracture Critical Details B. Underwater Inspection C. Other Special Inspection IMPROVEMENT COSTS 94. Bridge Improvement Cost 95. Roadway Improvement Cost 96. Total Project Cost 97. Year of Improvement Cost Estimated 198. Border Bridge 99. Border Bridge Structure Number 100. Defense Highway Designation 101. Parallel Structure Designation 102. Direction of Traffic 103. Temporary Structure Designation 104. Highway System of the Inventory Route | | |
| B. Underwater Inspection C. Other Special Inspection IMPROVEMENT COSTS 94. Bridge Improvement Cost 95. Roadway Improvement Cost 96. Total Project Cost 97. Year of Improvement Cost Estimated 199. Border Bridge 99. Border Bridge 100. Defense Highway Designation 101. Parallel Structure Designation 102. Direction of Traffic 103. Temporary Structure Designation 104. Highway System of the Inventory Route | | the second second second second |
| C. Other Special Inspection A | B. Underwater Inspection | $\ f_{\mathbf{R}^{(1,2)}} \cdots \cdots \ f_{n-1,n-1} \ \leq n \text{where } \ f_{\mathbf{R}^{(1,2)}} \ \leq n \text{ and } \ f_{\mathbf{R}^{(1,2)}} \ \leq n \text{ for } \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $ |
| 94. Bridge Improvement Cost 95. Roadway Improvement Cost 96. Total Project Cost 97. Year of Improvement Cost Estimated 199 97. Year of Improvement Cost Estimated 199 98. Border Bridge 99. Border Bridge Structure Number 100. Defense Highway Designation 101. Parallel Structure Designation 102. Direction of Traffic 103. Temporary Structure Designation 104. Highway System of the Inventory Route | | wards shares in the second |
| 94. Bridge Improvement Cost 95. Roadway Improvement Cost 96. Total Project Cost 97. Year of Improvement Cost Estimated 199 97. Year of Improvement Cost Estimated 199 98. Border Bridge 99. Border Bridge Structure Number 100. Defense Highway Designation 101. Parallel Structure Designation 102. Direction of Traffic 103. Temporary Structure Designation 104. Highway System of the Inventory Route | | |
| 95. Roadway Improvement Cost 95. Roadway Improvement Cost 96. Total Project Cost 97. Year of Improvement Cost Estimated 97. Year of Improvement Cost Estimated 199 97. Year of Improvement Cost Estimated 199 98. Border Bridge 97. MA 99. Border Bridge Structure Number 104 100. Defense Highway Designation 11 101. Parallel Structure Designation 11 102. Direction of Traffic 11 103. Temporary Structure Designation 11 104. Highway System of the Inventory Route 11 | IMPROVEMENT COSTS | |
| 96. Total Project Cost 97. Year of Improvement Cost Estimated 1999 97. Year of Improvement Cost Estimated 1999 97. Year of Improvement Cost Estimated 1999 98. Border Bridge 1/4 99. Border Bridge Structure Number 1/4 100. Defense Highway Designation 1/4 101. Parallel Structure Designation 1/4 102. Direction of Traffic 1/4 103. Temporary Structure Designation 1/4 104. Highway System of the Inventory Route 1/4 | 94. Bridge Improvement Cost | 000005 |
| 97. Year of Improvement Cost Estimated99. CLASSIFICATION AND STRUCTURE DATA 98. Border Bridge N/A 99. Border Bridge Structure Number N/A 100. Defense Highway Designation 101. Parallel Structure Designation 102. Direction of Traffic N/A 103. Temporary Structure Designation 104. Highway System of the Inventory Route N/A 97. Year of Improvement Cost Estimated N/A 98. Border Bridge N/A 99. Border Bridge Structure Number N/A 100. Defense Highway Designation N/A 101. Parallel Structure Designation N/A N/A 103. Temporary Structure Designation N/A | 95. Roadway Improvement Cost | |
| CLASSIFICATION AND STRUCTURE DATA 98. Border Bridge | | 600005 |
| 98. Border Bridge 1/4 99. Border Bridge Structure Number 1/4 100. Defense Highway Designation 1/4 101. Parallel Structure Designation 1/4 102. Direction of Traffic 1/4 103. Temporary Structure Designation 1/4 104. Highway System of the Inventory Route 1/4 | 97. Year of Improvement Cost Estimated 19(9) | 19 |
| 98. Border Bridge 1/4 99. Border Bridge Structure Number 1/4 100. Defense Highway Designation 1/4 101. Parallel Structure Designation 1/4 102. Direction of Traffic 1/4 103. Temporary Structure Designation 1/4 104. Highway System of the Inventory Route 1/4 | | |
| 98. Border Bridge 1/4 99. Border Bridge Structure Number 1/4 100. Defense Highway Designation 1/4 101. Parallel Structure Designation 1/4 102. Direction of Traffic 1/4 103. Temporary Structure Designation 1/4 104. Highway System of the Inventory Route 1/4 | | |
| 99. Border Bridge Structure Number NA 100. Defense Highway Designation IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | | Francisco and Constitute Protocological and |
| 99. Border Bridge Structure Number 100. Defense Highway Designation 101. 101. Parallel Structure Designation 114. 102. Direction of Traffic 114. 103. Temporary Structure Designation 114. 104. Highway System of the Inventory Route 114. | | unan moon in a sugar |
| 101. Parallel Structure Designation 11 11 10 102. Direction of Traffic Human Haffice net Canuar 10 103. Temporary Structure Designation 11 11 104. Highway System of the Inventory Route Laten | 99. Border Bridge Structure Number | |
| 102. Direction of Traffic | | - |
| 102. Direction of Traine | | (0) |
| 104. Highway System of the Inventory Route | 102. Direction of Trainc | |
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| | 10J. (INESCIVEU) | |

| BRIDGE STUDIES AND EVALUATION OFFICE | Page 5 of 5 6 5 4 3 2 1 |
|---|---|
| CLASSIFICATION AND STRUCTURE DATA (Cont.) | |
| 106. Year Reconstructed N LA | 0000 |
| 107. Deck Structure Type Starl Plate | 5 |
| 108. Wearing Surface/Protective System M / h | NNN |
| 109. Average Daily Truck Traffic 2000 | 10 h-3 |
| 110. Designated National Network | |
| 111. Pier or Abutment Protection (for Navigation) | wateriage |
| 112. NBIS Bridge Length Net Westing | N |
| 113. Scour Critical Bridges | |
| 114. Future Average Daily Traffic | 130000 |
| 115. Year of Future Average Daily Traffic | 07 |
| 116. Minimum Navigation Vertical Clearance / 13 | providence of providences a service of the service |
| Vertical Lift Bridge | |
| Remail i Rephilipping consisting in it all the decimien apposed on it | pactury . |

E.9 December 3, 1991

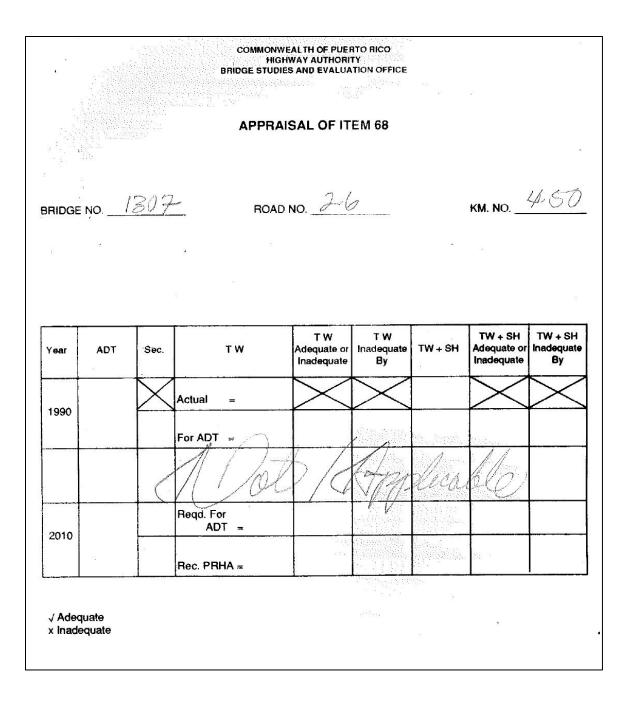
| BRIDGE | STUDIES AND EVALUATION OFFICE |
|---|--|
| PUE | TO RICO HIGHWAY AUTHORITY |
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| | Page 1 of 5 |
| | |
| | /307 0076 00450 Bridge No. Baad No. Km.No. |
| | Bridge No, Road No. Km.No. |
| | |
| | BRIDGE INVENTORY |
| 9 | |
| | |
| IDENTIFICATION | |
| | Code Position |
| 25 24 23 22 21 | 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 |
| | |
| 1. State Code | Commonwealth of Puerto Rico |
| 2. State Highway Department District | Jan Juin OT |
| 3. County (Parish) Code | Alan Juan [1]2-7] |
| 4. Place Code | Han Jun Usban Jave 716 71710 |
| 5. Inventory Route | <u>1-00003-0</u> 2110000 30 |
| 6. Features Intersected | Colligerian Wallway |
| PERACIS | TRIANI WALLRYWAY |
| 7. Facility Carried by Structure | P12-20 |
| 1200 upl | $\mathcal{P}\mathcal{Q}^{-}\mathcal{Z}\mathcal{Q}$ |
| 8. Structure Number 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | $\frac{1}{10000000000000000000000000000000000$ |
| 9. Location | de Castrio Auenue |
| USALLDU | CIONY DE CASTICO AVE: |
| 10. Inventory Route, Minimum Vertical Cle | arance (0.01 m) $\frac{5'2!m(17.09')(17'-01'')}{4'50}$ |
| 11. Milepoint | |
| 16. Latitude | $-\frac{18}{27.3}$ Minutes $1821/2$ |
| 17. Longitude | Degrees 03.1 Minutes 066031 |
| 19. By Pass, Detour Length (Nearest mile) | Zeculary rugillary |
| | $\sim v$ |
| | |
| CLASSIFICATION | (Un FSOD (Read) |
| 20. Toll | |
| 21. Maintenance Responsibility | The first subject to the source of the sourc |
| 22. Owner | |
| 26. Functional Classification of Inventory F | oute Wilder and Martin |

| 19 | BRID | OGE STUDIES AND EVALUATION OFFICE | Page 2 of 5 |
|----|-------------|--|---------------------|
| | | | 6 5 4 3 2 1 |
| | | | |
| | AGE | AND SERVICE 1968 | । मन्द्र दिन्द्र |
| | 27 | | $\frac{1902}{1902}$ |
| | | Lanes on the Structure and Under the Structure | |
| | | Average Daily Hame | <u>10111110</u> |
| | 30. | Year of Average Daily Traffic 1990 | - لصلائيا |
| | | | |
| | | | |
| | 20 | UCTURE DATA Protection | الحا |
| | | Design Load 29,29 m (96.07') | - 096 |
| | 32. | Approach Roadway Wildin | |
| | 33. | | " 「つつ」 |
| | 34. | Skew | - 0 |
| | 35. | | [NININIA] |
| | 36. | Traffic Safety Features | 6 |
| | 37. | Historical Significance | |
| | 38. | Navigation Control Yes No NA Navigation Vertical Clearance Yes No | 000 |
| | 39. 40. | Navigation Venical Clearance Yes No | 0000 |
| | 40. 41. | Structure, Open, Posted, or Closed to Traffic | |
| | 41, | Type of Service People Ing type | |
| | 42. | Structure Type, Main Atey Truss dick | 309 |
| | 4 4. | Structure Type, Approach Spans / UMU | |
| | 45. | Number of Snaps in Main Unit | 002 |
| | 46. | Number of Approach Spans | -) 0000 |
| | 47. | Inventory Route, Total Horizontal Clearance $\mathbf{b} = \frac{10.82m(35.49')}{21.65m(35)} \mathbf{R} = \frac{10.80m(35)}{100m(35)}$ | 42/ 354 |
| | 48. | Length of Maximum Span area and a fire and a | _ 0071 |
| | 49. | EC 12 w/ 142, 411 | 000183 |
| | 50. | Curb or Sidewalk Widths <u>VLOW</u> L= <u>R</u> = | -000000 |
| | 51. | | _ (4015K/ |
| | 52. | Deck Width, Out-to-Out 2.84 m (9.32') + A | 0093 |
| | 53. | Minimum Vertical Clearance Over Bridge Roadway Unlumited | _ 99999 |
| | 54. | | N #1701 |
| | 55. | Minimum Lateral Underclearance on Right H1.68m(5.51) R | N #055 |
| | 56. | Minimum Lateral Underclearance on Left | 049 |
| | | and the second se | |
| | | | |

| BRIDGE STUDIES AND EVALUATION OF | FICE | | Page 3 of 5 |
|--|------------------|---|----------------|
| | | | 3 2 1 |
| CONDITIONS RATINGS | | | |
| autor talky | | a | a. |
| | Material | Condition | |
| 50 D-1 | NA R | N 17 | 7 |
| 58. Deck | 1-11 | 0 1/ | - 5 |
| 59. Superstructure | Leal I | Carl | - 7 |
| 61. Channel and Channel Protection | - All | Λ / Λ | |
| 62. Culverts | OL (| 7770 | |
| 64. Operating Rating | dik. | 1 / Alex | 800 |
| 66. Inventory Rating | NIV & | and and <u>and and and and and and and and and and </u> | 800 |
| | | | |
| | | | |
| APPRAISAL RATING | | | |
| | Deficiencies | | |
| Antoni | Anthe. | Many markers Al | 7 |
| 67. Structural Evaluation <u>Jump</u> | , steel. I Can | AVIDAS HINDRAN (DOG) | |
| Arbent Munimum) | entorio | CAMPIT FRANCIS | 1. 2 " & here" |
| () a jente (a boundary) | | <u>, , , , , , , , , , , , , , , , , , , </u> | |
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| | A | $ \sim \Gamma_{\Lambda} $ | |
| 68. Deck Geometry | () / 1 | 110- | _ 🛛 |
| | 17/08/141 | <u>/// ()</u> :5:51'(L:UR). () | Sava Mu |
| 69. Underclearances, Vertical and Horizont | al 17-07 CV.C.J. | 2 of Max Matthe | Towney 3 |
| Whilesakle, requerens - | They the Deckey | A COLUMNIA | T |
| 70. Bridge Posting | ANI | | |
| 71. Waterway Adequacy | | | |
| /1. waterway Adequacy | RXI 1 | M down | |
| 72. Approach Roadway Alignment | | IN SE RO | |
| | | | |
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| BRIDGE STUDIES AND EVALUATION OFFICE | Page 4 of 5 |
|--|--|
| · | 5 14 13 12 11 10 9 8 7 6 5 4 3 2 1 |
| a statistica a s | |
| PROPOSED IMPROVEMENTS | |
| 75. Type of Work | 20011 352 |
| 76. Length of Structure Improvement 55.63m | (182.4.7) 0007183 |
| | |
| | |
| INSPECTIONS | ∳maa. |
| 89. (Reserved)/// | |
| 90. Inspection Date | AND 14 7 11 1940 The 112 71 |
| 91. Designated Inspection Frequency | many 14 minutes Ay |
| 92. Critical Feature Inspection | |
| A. Fracture Critical Details | |
| B. Underwater Inspection | |
| C. Other Special Inspection | |
| 93. Critical Feature Inspection Date | |
| A. Fracture Critical Details | |
| B. Underwater Inspection | |
| C. Other Special Inspection | |
| | |
| | |
| IMPROVEMENT COSTS | |
| 94. Bridge Improvement Cost | |
| 95. Roadway Improvement Cost | 54-305D COLOLOLOW |
| 95. Roadway improvement $\cos \frac{1}{55.63 \times 2.84 \times 900 \times 0.03}{2}$ | 1991 [2] |
| 97. Year of Improvement Cost Estimated | |
| | 1 |
| | |
| CLASSIFICATION AND STRUCTURE DATA | and a second a second a second a |
| 98. Border Bridge | |
| 99. Border Bridge Structure Number | |
| 100. Defense Highway Designation ALTU | $\frac{1}{\lambda(1)}$ |
| 101. Parallel Structure Designation | this not carried. |
| | WX 17 A |
| 103. Temporary Structure Designation | Chlory to CALAS T |
| 104. Highway System of the Inventory Route | |
| 105. (Reserved) | |
| | |

| BRIDGE STUDIES AND EVALUATION OFFICE | Page 5 of 5 |
|--|-------------|
| Approximately and the second seco | 6 5 4 3 2 1 |
| | |
| CLASSIFICATION AND STRUCTURE DATA (Cont.) | |
| 106. Year Reconstructed Melly Jecology Chucken | 0000 |
| 107. Deck Structure Type | 5 |
| 108. Wearing Surface/Protective System | 900 |
| 109. Average Daily Truck Traffic 44/2 (11) | 64 |
| 110. Designated National Network | 1 |
| 111. Pier or Abutment Protection (for Navigation) | |
| 112. NBIS Bridge Length | 더 |
| 113. Scour Critical Bridges | 「死」 |
| 114. Future Average Daily Traffic 143,990 | 143990 |
| 115. Year of Future Average Daily Traffic 2010 | 70 |
| 116. Minimum Navigation Vertical Clearance | 000 |
| Vertical Lift Bridge | |
| Remerko Rehabilitation educisto en repu al deficiencies descussed on i 67. This pedestrion waltaway bo relocated to 12m. 4.50 and | ring |
| all deficiencies descussed an i | ider was |
| reported to the 4.50 and | painted. |
| | V |
| | |



| BRIDGE STUDIES AND EVALUATION OFFICE PUERTO RICO HIGHWAY AUTHORITY | |
|---|---------------------------------------|
| GENERAL EVALUATION | |
| This bridge is basically in | 3 |
| The load carrying capacity is | |
| The recommended modifications will make it / adequate 2 minimally adequate 1 no required (don't print) 0 0 when previous is 2 | |
| The bridge should be replaced. Yes (print) I not required (don't print) 0 | Ø |
| It requires 2.0.24 routine inspection every 24 months (A) = 2 (B) = 24 frequent inspection every (B) months to monitor atinormal and/or suspected deficiencies (A) = 1 (B) = months frequent inspection every (B) months to determine the cause of and remedies for existing defects (A) = 0 (B) = months | eelia OB |
| It requires 3 routine maintenance 2 urgent repairs and routine maintenance 1 a dangerous condition and rountine maintenance 1 emergency repairs to eliminate danger to the public and routine maintenance 0 | |
| The deck geometry is | Future PRHA |
| The (A) approach alignment is (B) (A) = vertical 1 horizontal 0 horizontal and vertical 2 (B) = satifactory 3 minimally tolerable 2 poor and represents a danger to the public 1 not required (don't print) 0 | ⊡ <i>∐</i> ⊗® |
| Load Post for inventory rating shown in liem 64 Yes 1 No (don't print) 0 | |
| Post for vertical underclearance shown in Items 54 and 69 Yes I No (don't print) 0 | <u> </u> |
| FOR "REMARKS" SEE BRIDGE FILE. | |
| PERSONNEL Structural Inspection Review of Field Data Transfers of Data Condition Analysis Appraisal | · · · · · · · · · · · · · · · · · · · |

E.10 November 17, 1988

| | BRIDGE STUDIES AND EVA | ALUATION OFFICE | Page 1 of 5 |
|-------|---|------------------------------|---|
| 1972 | PUERTO RICO HIGHWAY AUTHORITY IBM-370 AND IBM MT/SC ELECTRONIC DATA STORAGE | U ZILZ • 1 No. Bridge No. | Road No. |
| | BRIDGE INVEN | TORY | Km. No. <u>4.30</u> |
| IDE | NTIFICATION | C | ode Positions |
| IDL | | 181716151413121110 3 8 | |
| 1. | | Commonwealth of Puerto Rice | IC - La La |
| 2. | Highway District | 1., | |
| 3. | Municipality | v | 1º063 |
| 4. | City/Town Sen! Tuen | D | 10063 |
| 5. | Inventory Route | Q3Q | 7000000 |
| 6. | Features Intersected Le chatrian |). Walkuter | |
| | "PEDESTE | 1 PK WARKWAY | |
| . 7. | Facility Carried by Structure ⁵⁶ | , | ••••••••• |
| 10 I | Structure No 1307 | f.one | |
| 9. | Location 10 DALdorioty. Noll | astro. HRm. 4C | |
| · | | | |
| 10. | Inventory Route, Minimum Vertical Clearance (0.01 m) . | ····· 4.00 | |
| 11. | Kilometer Point (0.01 km) | 4,30 | |
| 12. | Road Section Number (DOD) | 5 | |
| 13. | Bridge Description | 7 | |
| 14. | Defense Milepoint (0.01 ml) | 8/ | NET THE |
| 15. | Defense Section Length (miles) (0.1 mile) 8.1 | <i>Q.</i> | 300007 |
| 16 | Latitude: | Minutes | |
| 17. | Longitude: | Minutes | |
| 18. | | E. Multi Die his | |
| 19. | By Pass, Detour Length (Nearest mile) STruct | und over highur | the second se |
| 20. | | | <u>ح</u> ۲۰ |
| 21. | Custodian | | |
| 22. | | Highway Department | · · · · · · · · · · · |
| • 23. | F.A.P. No. ⁶⁰ | @M | |
| | | | |
| | ASSIFICATION - | Totage tota) | 1002 |
| | Fed. Aid System |) | <u>ارم</u> ء، |
| | Administrative | Interstate) | '³[Æ[7] |
| 26. | Functional | | |
| | | | 11 |

| BRIDGE STUDIES AND EVALUATION OFFICE | Page 2 of 5 |
|---|---------------------------------------|
| STRUCTURE DATA | 987654321 |
| | |
| 27. Year Built | |
| De Luce este O Linder | |
| 28. Lanes on Su | e |
| 30. Year | ¹⁹ 65 |
| 31. Design Load | |
| 32. Approach Roadway width including shoulders (0.01 m) | |
| 33. Median Open | . Closed |
| 34. Skew | |
| 35. Structure Flared Yes 12 No | |
| 36. Traffic Safety Features | |
| 37. Historical Significance | |
| 38. Navigation Control | ····· |
| 39. Navigation Vertical Clearance (0.1 m) | |
| 40. Navigation Horizontal Clearance (0.1 m) Yes No | |
| 41 Structure, Open or Closed to Traffic | humit 3021 |
| 42. Type Service | 1449 DI |
| 43. Structure Type-Main | 40000 |
| 44. Structure Type-Approach Spans | |
| 45. No. of Spans-Main | 130000 |
| 46. No. of Spans-Approaches | urvetal. |
| 47. Total Horizontal Clearance (0.01 m) L= . 20.4627R.= | of dat 20 01015 |
| 48. Max. Span Longth (0.01 m) 20: 46 m conter of person to force | 6.1. 200000030 |
| 49. Structure Length (0.01 m) 4.3, 92. m. aut. H. aut. A. | 10 000000 |
| 50. Sidewalk Widths (0.01 m) Left . Tron &. Right | 1900/6 |
| 51. Bridge Roadway Width (curb-curb) (0.01 m) | 400028 |
| 52. Deck Width (out-out) (0.01 m) | <u>L. J </u> |
| 53. Vertical Clearance over Bridge Roadway-Minimum (0.01 m) | 100000 |
| 54. Vertical Underclearance – Minimum (0.01 m) | 2/4 0 . 7.90 m 11 052 |
| 55. Lateral Underclearance on Right (Outer) Sides - Minimum (0.01 m) L # 5: | 850 0.80 000191 |
| 56. Lateral Underclearance on Luft (Innet Sides - Minimum (0.01 m) L# 9: | 88 77 C |
| 57. Wearing Surface | · · · · · · · · · · · · · · · · · · · |

| BRIDGE STUDIES ANI | D EVALUATION OFFICE |
|--|--|
| CONDITION | Page 3 of 5 |
| A Material | 987654321 |
| 58. Deck Steel | Condition Analysis |
| 59. Superstructure . Atel | Tal Good time |
| 60. Substructure | Conerally and minitian 617 |
| 61. Channel & Channel Protection $\lambda / / / \lambda$. | signal contraction of the second seco |
| 62. Culvert & Retaining Walls | ۲ |
| 63. Estimated Remaining Life | |
| 64. Operating Rating | tedes TRIAN SS BOO |
| 65. Approach Alignment | 1/// |
| 66 loventory Rating | |
| | |
| *PPRAISAL | |
| n'a al | Deficiencies |
| 67. Structural Condition Seck. With m | |
| | timents and types (|
| Will dene araches a | a smill spallings |
| 68. Deck Geometry | · K////································ |
| | 1. 2 j. Marriel |
| 69. Underclearances Vert. & Lateral (A. S. m.). Jo | dition better than present. "Z |
| 70. Safe Load Capacity | ² ² |
| | |
| 71. Waterway Adequacy | ····· |
| /1. water way Adequacy | |
| 72. Approach Alignment | |
| | |
| ······································ | · · · · · · · · · · · · · · · · · · · |
| PROPOSED IMPROVEMENTS | |
| 73. Year Needed | 1958 |
| Completed | |
| Described. | · · · · · · · · · · · · · · · · · · · |
| 74. Type of Service | ptsing 18 |
| 75. Type of Work | 544tim) "31212 |
| 76. Improvement Length (0.1 m) | 22000000 |
| 77. Design Loading | 28 |
| | |

| BRIDGE STUDIES AND EVALUATION OFFICE | |
|--|----------------------|
| Las (Maria Carl | |
| | |
| 78., Roadway which (0.01m) | লগ |
| | Magnet 1 |
| 80. ADT | |
| 81. Year of Estimated ADT | piper the discussion |
| 82. Tear of Ploposed Adjacent Road nay improvement of 1144 | 20 |
| 83. Prop. Adj. Rdwy Improvements-Type | "QI |
| | |
| COST OF IMPROVEMENTS | |
| \$ 5,000 "10712 | নাব • |
| 84 Total (dollars)S | 221 |
| Estimated Design Time (months) | |
| SUMMARY OF IMPROVEMENT COSTS | |
| 85. Preliminary Engineering (Dollars) | 2101 · |
| 86. Demolition Cost (Dollars) | 21回・ |
| 87. Substructure (Dollars) | <u>00</u> |
| 88. Superstructure (Dollars) | गग . |
| 89. Blank | ."E · |
| 90. Date of Last Inspection | 981 · |
| 91. Rehabilitate Existing Structure (Dollars) | नहा • |
| 92. Detour and Traffic Maintenance (Dollars) | 10. |
| 93. Approaches (Dollars) | <u>7</u> 0. |
| Approach Embankment (Dollars) | |
| Approach Pavement (Dollars) | |
| Approach Guaro. al (Dollars) | 21 · CAS |
| *(Code 10 neares: thousand dollars) | |
| | |
| REMARKS all be diciencies descri sed lon etem 4 67. | |
| and a contract of the second | |
| | |

| BRA E STUDIES AND EVALUATION OF | |
|---|-----------------------------|
| GENERAL EVALUATION | Page 5 of 5 |
| Thus bridge is basically in | 18 2 |
| The load carrying espacity is | "@ |
| The recommended modifications will make it | *® |
| The bridge should be replaced. Yes (print) 1 Not required (don't print) 0 | ' ®Ø |
| It requires (2) 2 4 routine inspection every 24 months frequent inspection every (3) months to | **EZZ |
| monitor abnormal and/or suspected deficiencies $\Delta = 1$ ($\Delta = 1$ months)frequent inspection every (B) months to determinethe cause of and remedies for existing defocts $\Delta = 0$ ($\Delta = 0$ months) | |
| It requires | **2 |
| of a dangerous condition and routine maintenance [] emergency repairs to eliminate danger to the public and routine maintenance [] | |
| The deck geometry is | 1 ² . |
| For PRHA (1995) recommendations, the travelled way is 2 at Deck Present Patters PRHA Present Future For present ADT, the shoulders are | PRHA 0 |
| satisfactory 3 unsatisfactory 2. cannot be evaluated because of lack of information 1 not required (don't print) 0 | |
| The D spproach alignment is D A vertical 1: horizontal 0 horizontal and vertical 2 B satisfactory 3 minimally tolerable 2 poor and represents a danger to the public 1 not required (don't print) 0 | 31 [2] OB |
| Load Post for inventory rating shown in Item 64 Yes 1 No (don't print) 0 | 33 🖉 |
| Post for vertical underclearance shown in Items 54 & 69 Ves 1 No (don't print) 0 | 360 |
| For "Remarks" see bridge file. | |
| PERSONNEL By By Structural Inspection F. McOurez 11-17-58 Review of Field Data F. McOurez 11-77-58 Transfer of Data Interview Interview | Dana 1 <u>2 - 08-8</u> 8 |

E.11 October 23, 1986

| | BRIDGE STUDIES AND E | EVALUATION OF | FICE | Page: 1 of 5 |
|---|---|---|---|---------------------------------------|
| | PUERTO RICO HIGHWAY AUTHORITY IBM—370 AND IBM MT/SC ELECTRONIC DATA STORAGE | L v 1 No. | 1307 Bridge No. | 0020 Road No. |
| 12 | BRIDGE INVI | ENTORY | | Km. No4.30 |
| 1DF | NTIFICATION | | Co | de Positions |
| 63 | 252423222120 | 191817161514 | | |
| 1. | | | of Puerto Rico | |
| 2. | Highway District | an | | 1307 |
| 3. | Municipality | gian | | 063 |
| 4. | City/Town | nan | e e de la composition | 180063 |
| 5. | Inventory Route | D3-0. | ···· ²² 27 | 1000030 |
| 6. | Features Intersected | an Walk | way | |
| | | RIAMIM | ALKWAN | |
| 7. | Facility Carried by Structure ⁵⁶ . PR-26 | · · · · · | | |
| 10.000 | Structure No |) | | 1013071 |
| 9. | Location 10 Baldoriaty Ne (| astro a | ienue | • • • • • • • • • • • • • • |
| | ······································ | | | |
| | Inventory Route, Minimum Vertical Clearance (0.01 m) | | 80 M | 100480 |
| 11. | Kilometer Point (0.01 km) | | 43Q | 1400430 |
| 12. | | 25 | | 190025- |
| | Bridge Description | | PS | |
| 14. | Defense Milepoint (0.01 ml) | 6.37 | · · · · · · · · · · · · · · · · · · · | 10637 |
| 15. | Defense Section Length (miles) (0.1 mile) | 8.10 | 4 | 30081 |
| | Latitude: | | | |
| | Longitude: | Minutes A. | 3 | °066037 |
| | 44 | Heel Druss | | |
| | By Pass, Detour Length (Nearest mile) | ucture ou | er chighura | 1 |
| | Toll | el fre | 0 (| //J |
| | Custodian | $Q_{\cdot} P_{\cdot} P_{\cdot} W_{\cdot}$ | | · · · · · · · · · · · · · · · · · · · |
| | | e Highway Departr | nent | · · · · · · •• |
| 23. | F.A.P. No. ⁵⁰ | · · · · · · · · · · | | ••• |
| CLA | SSIFICATION A La A | | | |
| | $H \to H$ | man | | |
| | Fed. Aid System Interfalle , W.G. | | | |
| 000000000000000000000000000000000000000 | Administrative | ••••••••••••••••••••••••••••••••••••••• | | |
| 20. | incorrectional | | | ' ' |

| | BRIDGE STUDIES AND EVALUATION OFFICE | Page 2 of 5 |
|------------|--|---|
| STR | UCTURE DATA | 987654321 |
| | | |
| <u>_</u> . | Year Built | 16800 |
| 28. | Lanes on Str O . Under | 10 007 |
| 29. | | 23 100000 |
| 30. | 1985 | 20 ET |
| 31. | 1 - nov na la | ····, "D |
| 32. | Approach Roadway width including shoulders (0.01 m) | 1 |
| 33. | | Closed 35 |
| 34. | | 3 4 00 |
| 35. | Structure Flared | 30 |
| 36. | Traffic Safety Features | •• Мили |
| 37. | | ······································ |
| 38. | | |
| | Navigation Vertical Clearance (0.1 m) | •1000 |
| 40. | 0 m d to | ••••••••••••••••••••••••••••••••••••••• |
| 41 | | •• A |
| 42. | | NM |
| 43. | Structure Type-Main Steel Inuss-deck. | a a a a a a a a a guinneanna anns |
| 10 A A A A | | •••••• |
| | No. of Spans-Main | 10002 10000 |
| 46. | No. of Spans-Approaches | M <u>17[9]2</u> |
| 47. | | 200205 |
| 48. | | 24006430 |
| 49. | | · · · · |
| 50. | | 2000116 |
| 51. | 7.82 m | *°0028 |
| 52. | Deck Width (out-out) (0.01 m) | +4 [9] 9 [9] 9 |
| 53. | Vertical Clearance over Bridge Roadway-Minimum (0.01 m) | 1 **[0]480 |
| 54. | | |
| 55. | Lateral Underclearance on Right (Outer) Sides – Minimum (0.01 m) . L = $5.2lm$ | |
| 56. | Lateral Underclearance on Lift (Innet Sides - Minimum (0.01 m) | 8+ 7 |
| 57. | Wearing Surface Aleil | |

| | BRIDGE STUDIES | AND EVALUATION OFFICE | B |
|--------------|--|---|--|
| CON | IDITION . | | Page 3 of 5 |
| Ø | Material | Condition Analysis, | 9 8 7 6 5 4 3 2 1 0 0 0 A |
| 58. | Deck pleely A. | A MA MA | Condettan 39 |
| 59. | Superstructure | Senarally Sapa | pondelegi 60 Z |
| 60. | Substructure Allel | Senerally Hae | of Condition 617 |
| 61. | Channel & Channel Protection A. / / . | · · · · · · · · · · / . /. /. | 62 ₁₁ |
| 62. | Culvert & Retaining Walls | | 63M |
| 63. | Estimated Remaining Life | | years 6415 |
| 64. | Operating Rating | Pedest | Man 66 800 |
| 65. | Approach Alignment | ····· | <i>A</i> ⁶⁹ <i>⊠</i> |
| 66. | Inventory Rating | Peoles | Trian ro row |
| ÷. | | | |
| APP | RAISAL | | |
| 67 | and the total | peficiencie | s - AAAAA |
| 67. | Structural Condition all the structure | us been repaired and | painled actually 10 2 |
| | | | |
| 54 (14) | | · · · · · · · · · · · · · · · · · · · | ••••• |
| 68. | Deck Geometry | ····· | · · · · · · · · · · · · · · · · · · · |
| 2 | and the second | VI CINA CONTRACTOR | 1 |
| 69. | Underclearances-Vert. & Lateral $(.4.30m)$. | Condition better th | ian present "Z |
| | -minimum) vileria | ······································ | · · · · · · · · · · · · · · · · · · · |
| 70. | Safe Load Capacity | ···· A. /···· | ····· |
| | | | |
| 71. | Waterway Adequacy | A. A. G. G. J | ······································ |
| | | | ····· |
| 72. | Approach Alignment | all'adiment | |
| | | $\mathcal{O}_{\mathcal{U}}$. $\mathcal{O}_{\mathcal{U}}$, $\mathcal{O}_{\mathcal{U}}$ | |
| //2010/00/00 | | | |
| | POSED IMPROVEMENTS | went not needed | 1800 |
| 73. | | | |
| | Completed | | |
| | Described | Pedestrian | |
| 1.0 0000 | Type of Service | A N(d) | 19000 |
| | Type of Work | ····· f · · p · Sp / · · · | 22000000 |
| | Improvement Length (0.1 m) | · · · · · · · · · · · · · · · · · · · | 280 |
| 77. | Design Loading | | |
| | | 지수는 문화 가지 않는 것을 수 있는 것을 하는 것을 하는 것을 하는 것을 수 있는 것을 수 있다. 너지 않는 것을 수 있는 것을 수 있다. 않는 것을 것을 수 있는 것을 것을 수 있는 것 같이 않는 것 않는 것 같이 않는 것 않는 | 이 같은 것은 것을 알 것을 것을 것을 것을 수 있다. |

| BRIDGE STUDIES AND EVALUATION OFFICE | Page For C |
|---|--|
| | [9] 8] 7] 6] 5 [4] 3[2] 1; |
| . 1/9/ | (°[0]0[0] |
| 78 Roadway Width (0.01m). | 1 ¹ 00 |
| 79 Number of Lanes | 197 300 0 8 0 |
| | |
| 81. Year of Estimated ADT | 9 |
| 82. Year of Proposed Adjacent Roadway Improvements | 10 |
| 83. Prop. Adj. Rdwy Improvements-Type | |
| COST OF IMPROVEMENTS | |
| (OS) OF IMPROVEMENTS | |
| 84 Total (dollars)S | "[00000] · |
| 84 Total (donars)3 Estimated Design Time (months) | |
| Estimated Design Time (mentaly mentaly m | |
| SUMMARY OF IMPROVEMENT COSTS | |
| SUMMARY OF MALL | |
| 85 Preliminary Engineering (Dollars) | 31000 · |
| 84 Demolition Cost (Dollars) | |
| | 000000 |
| 88 Superstructure (Dollars) | .00001 |
| 89 Blank | |
| 90 Date of Last Inspection | · 111286 |
| 91 Rehabilitate Existing Structure (Dollars) | · <u>()</u> |
| 92 Detour and Traffic Maintenance (Dollars) | · [0] 40" |
| 93. Approaches (Dollars) | •0000 · |
| Approach Einbankment (Dollars) | |
| Approach Pavement (Dollars) | |
| Approach Guardrail (Dollars) | |
| *(Code to nearest thousand dollars) | ······ |
| | |
| REMARKS This budge is in good structural | a pur liteous. |
| Ship bung on good or the | |
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| | \$. |
| | |
| | and and a second se |
| 나는 바람을 가지 않는다. 이 것이 같은 것이 같은 것이 같은 것이 같은 것이 같은 가 있다. 이 것이 같은 것이 없다. 이 것이 같은 것이 같은 것이 없는 것이 않는 것이 없는 것이 있 않는 것이 없는 것이 없 것이 없는 것이 않이 | |

| BRIDGE STUDIES AND EVALUATION OFFICE | Page 5 of 5 |
|---|-----------------|
| GENERAL EVALUATION | |
| This bridge is basically in structural condition excelent 4 fair. 2 very poor 0 good 3 poor 1 | 16 🔊 |
| The load carrying capacity isO | 170 |
| The recommended modifications will make it | '•Ø |
| The bridge should be replaced. Yes (print) 1 Not required (don't print) 0 | 100 |
| It requires | *•2214) A B |
| It requires | 23 |
| The deck geometry is | PRHA O |
| satisfactory 3 unsatisfactory 2 cannot be evaluated because of lack of information 1 not required (don't print) 0 | |
| The D approach alignment is D Vertical 1 horizontal 0 horizontal and vertical 2 B satisfactory 3 minimally tolerable 2 poor and represents a danger to the public 1 not required (don't print) 0 | 3100 AB |
| 2 Load Post for inventory rating shown in Item 64 Yes 1 No (don't print) 0 | ⁵⁵ 0 |
| Post for vertical underclearance shown in Items 54 & 69 Yes No (don't print) 0 | 3.0 |
| For "Remiarks" see bridge file. | |
| PERSONNEL Strictural Inspection Review of Field Data Transfer of Data Data I ransfer of Data Data Data Data I ransfer of Data I ransfer of Data | - 1/12/36 |

| j. | BRIDGE N | 130 | 07 | | | . (| | A taxaa a | | |
|------------------|---------------------------|----------|----------|---------------------------------------|---------------------------------|---------------------|--|------------|------------------------|----|
| | ROAD NO. | 2 | | KM 4.30 | | APPh | AISAL | UF : | TEN. | 33 |
| 1 | NOAD NO. | | | км 4.30 | | | | | | |
| | • • | | | | | | | | | |
| 3 | | | *) | | | | | | | |
| | | | | | | | | | | |
| | | 10 | | | | | | | | |
| | | | | BRIDGE : EVALUA | | | | | | |
| | v | | | | | FFICE | | | | |
| | , | | | | | | | | | |
| 3 | | | | | | | | | | |
| Г | | <u> </u> | | · · · · · · · · · · · · · · · · · · · | | | | | | |
| | YEAR | ADT | Sec. | тw | T W Adequate Incologicale | T W I na asquate | TW+ SH | | TW + CH Internation | |
| | 1985 | 111 | \times | Actua! ≡ | | βγ | | k. | | |
| | 1965 | NA | * | For ADT = | - K - > | | † | | $\leq \geq $ | 4 |
| $\left \right $ | a _{na a} | 111 | 1 | | | | | <u>i :</u> | | ? |
| | | NB | Mene | | T. (1) | 2713 | | | r Maria | |
| | | | | Regd. For ADT = | | | | <u> </u> | | |
| | 1995 | NA | [| ADT = | | | | <u> </u> | | |
| L | <u>, 2009 (</u> 16 (b) | | | лос Ана з | <u> </u> | | ۹ ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ | | | |
| | | | | | | | | | | |
| | | dequate | | | | | | | | |
| | X In | adeguate | | | | | | | | |

E.12 February 2, 1984

| | BRIDGE STUDIES AND | EVALUATION OF | FICE Page 1 of 5 |
|---------|---|--------------------|--|
| 04 E #1 | PUERTO RICO HIGHWAY AUTHORITY IBM370 AND IBM MT/SC | | 1307 0026 |
| 10 | ELECTRONIC DATA STORAGE | Card No. | Bridge No. Road No. |
| | BRIDGE IN | VENTORY | Km. No. <u>427</u> |
| IDE | NTIFICATION | | Code Positions |
| | | | 3 2 11 0 9 8 7 6 5 4 3 2 1 |
| 1. | State | Commonwealth | of Puerto Rico |
| 2. | Highway District San Ju | an. | ¹³ 0 / |
| 3. | Municipality | #~ | 13063 |
| 4. | City/Town | .a | 180063 |
| 5. | Inventory Route | | 22 21 1000030 |
| 6. | Features Intersected . Peder Chian Walkure | | |
| | 31PEDES | TRIANW | |
| 7. | Facility Carried by Structure ⁵⁶ P.R. 26. | | |
| 8. | Structure No 1307 | 141 | 740/307/ |
| 9. | Location 10. Baldorioty De Castro. 1 | tocnue | |
| · | | | |
| 10. | Inventory Route, Minimum Vertical Clearance (0.01 | m)4:8.0 | |
| - 11. | Kilometer Point (0.01 km) | 7 | 1400429 |
| 12. | Road Section Number (DOD) | | 190025- |
| | Bridge Description DH NST | | |
| 14. | Defense Milepoint (0.01 ml) | 37 | 26 06 37 |
| 15. | Defense Section Length (miles) (0.1 mile) | | 300811 |
| 16. | Latitude: | 2. 弓. Minutes | |
| 17. | Longitude: Degrees | : Minutes | 38066031 |
| 18. | Physical Vulnerability Steel | truss | ····· |
| 19. | By Pass, Detour Length (Nearest mile) | chine over light | ** |
| 20. | Toll | Free | 473 |
| 21. | Custodian | e: W: | 4 ^B |
| 22. | Owner | tate Highway Depar | 491 |
| 23. | F.A.P. No. 50 Inknown | | |
| | | | |
| CLA | SSIFICATION | 4 | |
| 24. | SSIFICATION Fed. Aid System | le, urban. | |
| 25. | Administrative | ÷., | ······································ |
| 26. | Functional | state | · · · · · · · · · · · · · · · · · · · |
| | | | |

| BRIDGE STUDIES AND EVALUATION | OFFICE Page 2 of 5 |
|--|----------------------------------|
| STRUCTURE DATA | Page 2 01 3 |
| | |
| 27. Year Built | 18 6800 |
| 28. Lanes on Str | |
| 29. ADT - Inventory Route 6.7, 600 | 23067600 |
| 30. Year | |
| 31. Design Load | |
| 32. Approach, Roadway width including shoulders (0.01 m) 24. | |
| | pen |
| 34. Skew | 36 00 |
| 35. Structure Flaged Yes | I No |
| 36. Traffic Safety Features | |
| 37. Historical Significance | |
| 38. Navigation Control | I No |
| 39. Navigation Vertical Clearance (0.1 m) Yes | Z No |
| 40. Navigation Horizontal Clearance (0.1 m) | No |
| 41. Structure, Open or Closed to Traffic | |
| 42. Type Service | , highway 0837 |
| 43. Structure Type-Main Steel truce - de | K |
| 44. Structure Type-Approach Spans | 80[0.0]0 |
| 45. No. of Spans-Main | 500 ⁰¹ |
| 46. No. of Spans-Approaches | 130000 |
| 47. Total Horizontal Clearance (0.01 m) L = . 20: 46 m R.=. | |
| 48. Max. Span Longth (0.01 m) 20: 46 m. | |
| 49. Structure Length (0.01 m) | 24000¥30 |
| 50. Sidewalk Widths (0.01 m) Left | |
| 51. Bridge Roadway Width (curb-curb) (0.01 m) , C. C. P | |
| 52. Deck Width (out-out) (0.01 m) | 400028 |
| 53. Vertical Clearance over Bridge Roadway-Minimum (0.01 m) | 400028 united 44 27 27 |
| 54. Vertical Underclearance - Minimum (0.01 m) | 2 |
| 55. Lateral Underclearance on Right (Outer) Sides - Minimum (0,01 m) | L: 5.2/2 R= 7.90m . 88 052 |
| 56. Lateral Underclearance on Lof? (Inne) Sides - Minimum (0.01 m) | L= ? \$5 m R= ? 86 m . \$8 0 0 9 |
| 57. Wearing Surface | ••••• |
| 51. ⁰ | |
| | |

| | BRIDGE STUDIES AND E | VALUATION OFFICE | Page 3 of 5 |
|------|--|--|---|
| COL | NDITION | | 987654321 |
| | Material | Condition Analysis | |
| 58. | Deck | Sancrally Hoo | |
| 59. | Superstructure | Somerally Soc | |
| 60, | Substructure | Bennially to | gen en e |
| 61. | A statistical strategies and strategies of the statistical strategies of the statistical strategies and strategies an strategies and strategies /li> | ·············· | |
| 62. | Culvert & Retaining Walls | | 6 ³ |
| 63. | Estimated Remaining Life | 0 1 1 | |
| 64. | | | |
| 65. | Approach Alignment | \cdots | |
| 66. | Inventory Rating | ledistrie | 70800 |
| | | | |
| API | PRAISAL | | |
| - 22 | | Deficiencie | |
| 67. | Structural Condition Sand Harting and press & have & | er, applied rege. My. | 10 2 |
| | · · · · · · · · · · · · · · · · · · · | | |
| | | | |
| 68. | Deck Geometry | γΑ | " |
| | | 11- | num culture 12 [6] |
| 69. | Underclearances-Vert. & Lateral . Condition equis | e co presence menus | ruth and contraction (6) |
| | Safe Load Capacity | | |
| 70. | | [1] Antonio and a straight Antonio Antonio Antonio | |
| 71 | Waterway Adequacy | na Valimennizian antra 1 | |
| /1. | waterway Aucquacy | en al la companya de | · · · · · · · · · · · · · · · · · |
| 70 | Approach Alignment | | |
| 12. | | | a an |
| | | | |
| PRO | DPOSED IMPROVEMENTS | | |
| | Year Needed | | ¹⁶ ెె |
| | Completed | | |
| | Describe | | |
| 74. | Type of Service | | |
| 75. | Type of Work | | |
| 76. | Improvement Length (0.1 m) | 4. /. A | 22000000 |
| 77. | Design Loading | / / ¥ • • • • • • • • • • • • • • • • • • • | ²⁸ |
| | | | |

| BRIDGE STUDIES AND EVALUATION OFFICE | Page 4 of 5 | |
|--|--|-------------|
| [9] 8 | 7654321 | |
| | | |
| 78., Roadway Width (0.01m) | 33 @ 0 | |
| 80. ADT | 19/300 ED | |
| 81. Year of Estimated ADT | | |
| | and the second | |
| Year of Proposed Adjacent Roadway Improvements | | |
| COST OF IMPROVEMENTS | | 100 C 100 C |
| 84 Total (dollars)\$ | **[0]00000 | |
| Estimated Design Time (months) | | 1 |
| Estimated Design Trane (months) management and | • | |
| SUMMARY OF IMPROVEMENT COSTS | 8 9 | |
| 85. Preliminary Engineering (Dollars) | 51000 | * |
| 86. Demolition Cost (Dollars) | | * |
| 87. Substructure (Dollars) | | * |
| 88. Superstructure (Dollars) | | * |
| 89. Blank | 67 | * |
| 90. Date of Last Inspection | | |
| 91. Rehabilitate Existing Structure (Dollars) | ** | |
| 92. Detour and Traffic Maintenance (Dollars) | | |
| 93. Approaches (Dollars) | | |
| Approach Embankment (Dollars) | 0 0 0 17 1 * | |
| Approach Pavement (Dollars) | | V., |
| Approach Guardrail (Dollars) | | |
| *(Code to nearest thousand dollars) | | |
| REMARKS | | |
| This bridge is good structural condition | | 11111 |
| Q = Q | | |
| | | 1111 |
| | | 1111 |
| | | |
| | | |

| BNDGE STUDIES AND GENERAL E | DEVALUATION OF ICE | Page 5 of 5 |
|---|--|---|
| This bridge is basically in | | 16 🗐 |
| The load carrying capacity is | 1 not required (don't print) 0 | 17 ₀ |
| The recommended modifications will make it | | 180 |
| The bridge should be replaced. Yes (print) 1 Not required (don't print) 0 | ······································ | l9]_0] |
| It requires <u>2000</u> routine inspection every <u>24</u> months frequent inspection every <u>B</u> months to monitor abnormal and/or suspected deficiencies frequent inspection every <u>B</u> months to determine the cause of and remedies for existing defects | (A) = 2 $(B) = 24(A) = 1$ $(B) = months(A) = 0$ $(B) = months$ | ²° <u>₂⊇∕∕</u> A B |
| It requires routine maintenance minor repairs and routine maintenance urgent repairs to prevent further costly deterioration and/or the of a dangerous condition and routine maintenance emergency repairs to eliminate danger to the public and routine | 1 | 23 |
| The deck geometry is For present ADT, the travelled way is For future (1995) ADT, the travelled way is For PRHA (1995) recommendations, the travelled way is24 For present ADT, the shoulders are For future (1995) ADT, the shoulders are For PRHA (1995) recommendations, the shoulders are Satisfactory 3 unsatisfactory 2 cannot be evaluated been not required (don't print) 0 | Deck Present Future PRHA Present I | Future PRHA |
| The Approach alignment is O vertical 1 horizontal 0 horizontal 0 | ontal and vertical 2 and represents a danger to the public 1 | ³' ি A® |
| Load Post for inventory rating shown in Item 64 Yes 1 No (don't print) 0 | | 33 🕗 |
| Post for vertical underclearance shown in Items 54 & 69 Yes 1 No (don't print) 0 | | 340 |
| For "Remarks" see bridge file. | | |
| PERSONNEL By Date Structural Inspection | Condition Analysis Appraisal IBM MT/SC file IBM370 file | Date <u> <u> </u> </u> |

| BRIDGE N | | | | | APPL | AISAL | Of | iten | 68 |
|----------|-----------------------|-------|--------------------|------------------------------------|---|--|------------|--|------------------|
| ROAD NO. | 2.6 | | км. <u>422</u> | | | | | | |
| | | | | | | | | | |
| 5 | | | BRIDGE ST | UDIES | AND | | | | × |
| | | | EVALUATI | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 1. | | | | | | | | | |
| YEAR | ADT | Sec. | TW | T W Adsquate Sr Incomacio | T W Inceequate By | T₩+ SH | TW 43 | HTW + SH D Inachqua By | 19 |
| 1982 | | \ge | Actual = | | X | s | \searrow | Ĵ× | 2 |
| | | | For ADT = | | | | | | 1 |
| | NA | | | | nan usa (paga galang sa nan da nan da nan | Constant of Local Information and a constant of an | | | |
| 1995 | | | Regd. For ADT = | | siZaDilividune decomenseration v _{il b} | | | | power |
| | | | Rec. PRHA E | | 12.00.000 area - 20.000 are | 2 | | 1997 - 19 | |
| V A | idequate nadequate | | | <u> </u> | | | ŝ | | 200 ² |

E.13 June 18, 1975

| | BRIDGE | STUDIES AND EVA | LUATION OF | FICE | Page 1 of 5 |
|-----|---|---------------------------------------|------------------|----------------------|---------------------------------------|
| 150 | PUERTO RICO HIGHWAY IBM—370 AND IBM MT/S | | | 1307 | 0000 |
| | ELECTRONIC DATA STO | ORAGE | Card No. | Bridge No. | Road No. |
| | | BRIDGE INVENT | ORY | | Km. No. <u>M. A</u> |
| IDE | NTIFICATION | | | Coo | le Positions |
| | | 25242322212019 | 18 17 16 15 14 1 | 3 12 11 10 9 8 | 7 6 5 4 3 2 1 |
| 1. | State | | Commonwealth | of Puerto Rico . | |
| 2 | Highway District | Sq. | n. Juan | | |
| 3. | Municipality | | n. Juan. | | |
| 4 | City/Town | · · · · · · · · · · · · · · · · · · · | n Jum | ., | |
| 5. | Inventory Route | 15850- | 5000000 | 8.0 ²² /B | 0000000 |
| 6. | Features Intersected | P.R. 2 | 6 | | |
| 1.4 | 3 | PR 26 | | | |
| 7. | Facility Carried by Structure ⁵⁶ | Pedestria | m walk | courses | |
| 8 | Structure No. | 1.307. | one of. | eul | 10/307/ |
| 9. | Location 10 Fast of | Sem. 5.1.2.1.4 | ing len | .t.t. | |
| | Balden jota. | Le Castro | Hulas | e | |
| 10. | Inventory Route, Minimum Vertical | Clearance (0.01 m) . | Unh | mited | |
| 11. | Kilometer Point (0.01 km) | | N. | 4 | 1400000 |
| 12. | Road Section Number (DOD) | N | DH | | . 1900000 |
| 13. | Bridge Description | NOH OG | 4. NST: | ₹,P | |
| 14. | Defense Milepoint (0.01 ml) | | D.f | | aapp |
| 15 | Defense Section Length (miles) (0,1 | mile) | NHH | | |
| 16 | Latitude: | Degrees 2.713. | Minutes | | |
| 17. | Longitude: | Degrees 9.3 | Minutes | | 38066031 |
| 10 | Physical Vulnerability | | al / ru | 5 | |
| 19 | By Pass Detour Length (Nearest mi | le) | peres 1 | ig nully. | |
| 20 | Tall | 0 Toll 4 | in nead | 1 pr or | · |
| 21 | Custodian | DTPA | 4 | | |
| 22 | Owner | State | Highway Depar | rtment | 🗠 |
| 23 | . F.A.P. No. ⁵⁰ | Implinde | ella. | | |
| 1.1 | | | | | |
| CI | ASSIFICATION | 1/1 | 1 | | |
| 24 | . Fed. Aid System | · · · · · · | | | |
| 25 | . Administrative | | A.T.F | | |
| 26 | . Functional | | | | · · · · · · · · · · · · · · · · · · · |

| | BRIDGE STUDIES AND EVALUATION OFFICE | Page 2 of 5 |
|-----|--|--|
| STR | UCTURE DATA | 987654321 |
| | | |
| 27. | Year Built | 156600 |
| 28. | Lanes on Str | 190006 |
| 29. | ADT – Inventory Route | 23 22 22 0 |
| 30. | Year | ²⁹ 00 |
| 31. | Design Load Padas Trian | · · · · · · · · · · · · · · · · · · · |
| 32. | Approach Roadway width including shoulders (0.01 m) | 32 0 / 6 |
| 33. | Median Open | . 🗆 Closed |
| 34. | Skew | |
| 35. | Statute I mica i v v v v v v | |
| 36. | Traffic Safety Features | · · · · · · · · · · · · · · · · · · · |
| 37. | | **660 |
| 38. | | 46 |
| 39. | | |
| 40. | Navigation Horizontal Clearance (0.1 m) Ves 🛛 Yes | 50 |
| 41. | Structure, Open or Closed to Traffic | |
| 42. | Type Service | not 41 |
| 43. | Structure Type-Main Stage deal fund | |
| 44. | | |
| 45. | No. of Spans-Main | ····· |
| 46. | No. of Spans-Approaches | 130000 |
| 47. | Total Horizontal Clearance (0.01 m) L= R.= R.=. | |
| 48. | Max. Span Length (0.01 m) | |
| 49. | Structure Length (0.01 m) | |
| 50. | Sidewalk Widths (0.01 m) Left | |
| 51. | Bridge Roadway Width (curb-curb) (0.01 m) | 360072 |
| 52. | Deck Width (out-out) (0.01 m) | 400076 |
| 53. | Vertical Clearance over Bridge Roadway-Minimum (0.01 m) | 44 21212 |
| 54. | | ······································ |
| 55. | Lateral Underclearance on Right (Outer) Sides – Minimum (0.01 m) L = | 3. R.a. 3-29 |
| 56. | Lateral Underclearance on Right (Outer) Sides – Minimum (0.01 m) L = | Υ.S. R.=. ℓ: S |
| 57. | Wearing Surface | |

| | BRIDGE STUDIES AND EVA | ALUATION OFFICE | of 5 |
|-------------------|--|--|-------------------|
| CON | DITION | 987654 | 11.12 |
| | Material | Condition Analysis | |
| 58. | Deck Steel | mins. Mr. | 597 |
| 59. | Superstructure . ¹⁷ | · · · · · · · · · · · · · · · · · · · | 607 |
| . H. H | Substructure ⁴ | · · · · | 617 |
| A to date. | Channel & Channel Protection | <i>N.</i> H | 62[<u>]</u> |
| 1. 1. 1. 1. 1. 1. | Culvert & Retaining Walls | <i>MP</i> | 63 M |
| 63 | Estimated Remaining Life | 15 ys 2000 | 64 7 5 |
| 64. | Operating Rating | od 12 2 | 800 |
| 65. | Approach Alignment | , | . ⁶⁹ M |
| 66. | Approach Alignment | a ding | 800 |
| | | €d C | |
| APPI | RAISAL | | |
| | p 1 1 | Deficiencies | 102 |
| 67. | Structural Condition Panding General of pro | to trainings systems sourd on | 8. "Z |
| | . Idaking, hight corresion M. die | The second of Meinger , STring wer, St | |
| | | | • |
| 68. | Deck Geometry | · · · · // ·/-························· | . "[]/] |
| | and the second | | 12 |
| 69. | Underclearances-Vert. & Lateral (4:85.27.) Egged. | ta precesit in uninnume. cuiteria. | . 🖾 |
| | | ······································ | 13 |
| 70. | Safe Load Capacity | · · · · · · · · · · · · · · · · · · · | . لنك |
| | | · · · · · · · · · · · · · · · · · · · | · 14 |
| 71. | Waterway Adequacy | ······ | . ല |
| | | | 15 11 |
| 72. | Approach Alignment | · · · · · · · · / · · [· · · · · · · · · | |
| | | | • |
| | | | |
| PRC | POSED IMPROVEMENTS | 1976 1980 | 1610 0 |
| 73. | Year Needed | | (alta |
| | Completed | | |
| | Describe | | 18 |
| 74. | Type of Service Pedestaler | ·///// | |
| 75. | Type of Work Rehabi | bration | 9 <u>81712</u> |
| 76. | Improvement Length (0.1 m) | ······ | 2 0 0 0 2817 |
| 77. | Design Loading | <i></i> | " |
| | | | |

| | BRIDG | E STUDIES AND EVALUATION OFFICE | Page 4 of 5 |
|-----|---|---------------------------------------|--|
| | | | 987654321 |
| 78. | Roadway Width (0.01 m) | · · · · · · · · · · · · · · · · · · · | 290000 |
| 79. | Number of Lanes | | 33 🕜 🖉 |
| 80. | ADT | | |
| 81. | Year of Estimated ADT | | •••••••••••••••••••••••••••••••••••••• |
| 82. | Year of Proposed Adjacent Roadway Imp | provements | 43 6 6 |
| 83. | Prop. Adj. Rdwy Improvements-Type . | · · · · · · · · · · · · · · · · · · · | [*] °Ľ |
| | | | |
| со | ST OF IMPROVEMENTS | 1) were that | 46 |
| 84. | | all an 1976 and God | |
| | Estimated Design Time (months) | | |
| | 2 ¹⁰ 10 20 20 | 2 | |
| SU | MMARY OF IMPROVEMENT COSTS | n | 51000 * |
| 85. | | | 54 0 0 0 * |
| 86. | | | 5700000 |
| 87. | | | 6200000* |
| 88. | Superstructure (Dollars) | | ••• ••75 * |
| 89. | Blank | | 68 2 2 2 * |
| 90. | Rehabilitate Existing Structure (Dollars) Detour and Traffic Maintenance (Dollars) | | 7000 * |
| | Approaches (Dollars) | | 74000 * |
| 92 | Approaches (Dollars) | | |
| | Approach Pavement (Dollars) | | |
| | Approach Guardrail (Dollars) | | |
| | (* Code to nearest thousand dollars) | | |
| 03 | Date of Last Inspection | | 10071875 |
| 73 | Date of Last inspection | | |
| RI | MARKS | | |
| | PILITAL (tto | a gor crusist Q. | |
| • | NO Print Print | drained leakad | |
| 35 | A.) & spart of a part | deaund leakage | |
| | E abarrent of rost | that symean in the brie | get by say & blasting |
| | and the | s protection of it again | at Jatan courseis |
| 1.0 | with point. | | |
| 10 | · · · · · · · · · · · · · · · · · · · | | |
| • | | | ** * * * * * * * * * * * * * |
| | | | a |

| BR. GE STUDIES AND EVALUATION OF CE | Page 5 of 5 |
|--|-------------|
| GENERAL EVALUATION | |
| | 16 |
| This bridge is basically in Structural condition | |
| excelent 4 fair 2 very poor 0 | |
| good 3 poor 1 | 17 |
| The load carrying capacity is | 170 |
| adequate 3 minimally adequate 2 inadequate 1 not required (don't print) 0 | |
| | 18 0 |
| The recommended modifications will make it | |
| adequate 2 minimally adequate 1 not required (don't print) 0 0 when previous is 2 | |
| | 19 0 |
| The bridge should be replaced. | |
| Yes (print) 1 Not required (don't print) 0 | |
| 11 - 11/2 | 20 112 |
| It requires | 00 |
| frequent inspection every (B) months to | |
| monitor abnormal and/or suspected deliciencies | |
| frequent inspection every \textcircled{B} months to determine the cause of and remedies for existing defects $\textcircled{A} = 0 \ \textcircled{B} = \text{months}$ | |
| | 232 |
| It requires 3 | |
| routine maintenance | |
| minor repairs and routine maintenance urgent repairs to prevent further costly deterioration and/or the development | |
| of a dangerous condition and routine maintenance | |
| emergency repairs to eliminate danger to the public and routine maintenance | |
| The deck geometry is | e PRHA |
| B satisfactory 3 minimally tolerable 2 poor/and represents a danger to the public 1 not required (don't print) 0 | |
| | 33 🕖 |
| Load Post for inventory rating shown in Item 66 Yes 1 No (don't print) 0 | |
| Post for vertical underclearance shown in Items 54 & 69 Yes 1 No (don't print) 0 | 34 |
| For "Remarks" see bridge file. | |
| PERSONNEL By Date Approx Condition Analysis Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Review of Field Data Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Transfer of Data Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Transfer of Data Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Transfer of Data Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspection Image: Structural Inspectin Image: Structural Inspectin Im | - aget 1976 |

| BRIDGE NO | | 0 | | 0 3100 1000 | APPRA | ISAL | OF I | TEM | e |
|------------------|---------|--------------|---------------------|-------------------------------|-------------------------|-------|-------------------|-------------------------|----------|
| OAD NO. | 10 | | КМ | | | | | | |
| | | | | | | | | | |
| | | | 1 5 | | | | | | |
| | | | | | | | | | |
| | | | BRIDGE S EVALUAT | | | | | | |
| 48 10. 11. | | | | | | | | | |
| • | | | | | | | | | |
| - ¹ 1 | 6 B | đ | | | | | | | 644 |
| YEAR | ADT | Sec. | т w | T W Adequate Inadequate | T W Inadequate By | TW+SH | TW+SH Adequate | TW + S inadequ By | H ate |
| ATT. | | \mathbf{X} | Actual ≡ | $\mathbf{\mathbf{X}}$ | \searrow | | | \searrow | |
| 1970 | | | For ADT = | | | | | | |
| | | | | | | | | | |
| 1990 | | | Read. For ADT = | | а 1 1 (19)5. | | | | |
| | | | Rec.PRHA ≡ | | | | | | |
| | | | | | | | | | |
| / A | deguate | | | | | | | | |
| | | | | | | | | | |

| BRIDGE STUDIES AND E | VALUATION OFF | ICE | |
|---|-----------------|----------------|------------------|
| | | ter e | Page 1 of 1 |
| PUERTO RICO HIGHWAY AUTHORITY | _ | | F-1-1-1-1 |
| IBM – 370 AND IBM MT/SC | | 1367 | 0026 |
| ELECTRONIC DATA STORAGE | Card No. | Bridge No. | Road No. |
| ROUTE UNDER S | STRUCTURE | | Km. No |
| | | Code Posi | tions |
| IDENTIFICATION 25/24/23/22/2 | 120191817161514 | 131211109 | 8 7 6 5 4 3 2 1 |
| 5. Inventory Route | 26.89 | 10 2. | 31000260 |
| 6. Features Intersected Peder Talana | Maltrees | Ø | |
| | TRIAN | HI. KWH | |
| 8. Structure No | 1.3.07# | 1. C. C. | 44013007 |
| 10. Inventory Route, Minimum Vertical Clearance (0.01 m |) | Hr. B. 5 | 5°0785 |
| 11. Kilometer Point (0.01 km) | <u>.</u> | 4.2.9 | 5400428 |
| 12. Road Section Number (DOD) | 2.5 | | 59025B |
| 13. Bridge Description N. D. C. & | ロモー・センション | | |
| 14. Defense Milepoint (0.01 m) | | | ··· 660637 |
| 15. Defense Section Length (miles) (0.1 mile) | &;/ | | 70[<i>08</i>]] |
| 19. By Pass, Detour Length (Nearest mile) | 1.1. Bugo | S.J.Ze | |
| | | | |
| CLASSIFICATION | | | |
| 24. Fed. Aid System | | | |
| 25. Administrative | 1. J. E | <u>.</u> . | . , |
| 26. Functional Mr. Dorother | Primel Pl | A.H.a. | 4.4.C |
| | | | |
| STRUCTURE DATA | | | |
| 29. ADT – Inventory Route | 50 540 | | 10052560 |
| 30. Year | 11.1.2 | | |
| 47. Total Horizontal Clearance (0.01 m) L = 17 | . <i></i> | <i>10, 8</i> 5 | ····· '8/21/2 |
| | | | |

E.14 November 13, 1972

| | | HIGHWAY AUTHORITY IBM-370 AND IBM MT/SC | 1 of 4 07 ge No. | C. Providencia B. S. B. S. Road No. |
|------|--|---|---|---|
| | | BRIDGE INVENTORY | £ | Km. No. ——— |
| | IDE | 25 24 23 2 2 2 1 20 19 18 17 16 15 14 13 12 1 | | |
| | 1. | | <ico< th=""><th>13</th></ico<> | 13 |
| | 2. | Highway District | | |
| | 3. | Municipality | • • • | |
| | 4. | City/Town | | 18 0063 |
| | 5. | Inventory Route . C. Providencia Pedestrian. Matkway. | 12 1 | 8066666600 |
| | 6. | Features Intersected | | |
| | | | | |
| | 7. | Facility Carried by Structure Pedestmans. Wolkway C. Prov. | | |
| 21 | and an other states of the sta | Structure No | and the second se | / |
| Carl | 29. | Location ast. of Gem. Shopping center, Are Baldon | otx.d. | E. Castro. |
| | | | | |
| and | 10. | Inventory Route, Minimum Vertical Clearance (0.01 m) Unlimited . | | |
| | | Kilometer Point (0.01 km) | | |
| 12 | 12. | Road Section Number (DOD) . Not. detense. highway | | 19 00000 |
| | 13. | Bridge Description N.P.HODH NSTS P | | |
| 241 | 14. | Defense Milepoint (0.01 m) Not. defense. highway | • | 26 0000 |
| _ | | Defense Section Length (miles) (0.1 mile) Nat. defense. high way | | and the second se |
| | 16. | Latitude: \mathscr{S} Degrees . \mathscr{P} . \mathscr{O} Minutes | | |
| | 17. | | | |
| | | Physical Vulnerability S.T.ee. Truss | | |
| | | By Pass, Detour Length (Nearest mile) . Walk. across high way. | | |
| | 20. | Toll No . toll for road or bridge | | |
| | 21. | | | .48 |
| | | Owner State Highway Department | | . 49 1 |
| | 23. | F.A.P. No. 59. | | |
| | CL | ASSIFICATION | | |
| | | Fed. Aid System | | 10 36 |
| | | Administrative | | |
| | | | | 13 5 5 |
| | 20. | | | |
| | | | | |

| | B. 130° | Page 2 of 4 |
|-----|--|--|
| STR | UCTURE DATA | 9 8 7 6 5 4 3 2 1 |
| 27. | Year Built | 156800 |
| 28. | Lanes on Str 0 Under . 6 | 190006 |
| 29. | \dot{ADT} – Inventory Route \mathcal{NA} | 23 000000 |
| 30. | Year | |
| 31. | Design Load Pedestrian | |
| 32. | Approach Roadway width including shoulders (0.01 m) $: \mathcal{MA} : \ldots : :$ | |
| 33. | Median None Open Cl | osed |
| 34. | Skew | |
| 35. | | |
| 36. | | |
| 37. | Report Available | · · · · · · · · · · · · · · · · · · · |
| 38. | | · · · · · · · · · · · · · · · · · · · |
| 39. | | 42 00 0 |
| 40. | Navigation Horizontal Clearance (0.1 m) $\mathcal{M}_{\mathcal{A}}^{\mathcal{H}}$ \Box Yes \Box No | |
| 41. | Relief Structures | |
| 42. | Type Service P.c.d. estrian over highway | |
| 43. | Structure Type-Main Steel . deck. Tenss , Bailey Bri | |
| 44. | Structure Type-Approach Spans | |
| 45. | No. of Spans-Main | provide a second s |
| 46. | No. of Spans-Approaches | |
| 47. | Total Horizontal Clearance (0.01 m) $L = B = B =$ | |
| 48. | Max. Span Length (0.01 m) $\ldots \ldots \ldots 24.27.$ | |
| 49. | Structure Length (0.01 m) | |
| 50. | Sidewalk Widths (0.01 m) Left $\dots Q Q Q \dots \dots Right \dots Q Q Q \dots \dots$ | and the second s |
| 51. | Bridge Roadway Width (curb-curb) (0.01 m) | 400076 |
| 52. | Deck Width (out-out) (0.01 m) | · · · · · · · · · · · · · · · · · · · |
| 53. | | 48 64 85 |
| 54. | Vertical Onderetearance – Minimum (0.01 m) · · · · · · · · · · · · · · · · · · | · · , · · · · · · · · · · · · · · · · · |
| | Lateral Underclearance on Right (Outer) Sides – Minimum (0.01 m) . $L = 1/30$ | R=. 9 49 EDD |
| 56. | | |
| 57. | Wearing Surface | · · · · · · · · · · · · · · |
| | | |
| ; | HARRIS | |

| 1 | | CA.1307 | Page 3 of 4 |
|-----|--|--------------------|--------------------|
| CO | NDITION | | 987654321 |
| | Material | Condition Analysis | 5 5 7 6 5 4 5 2 1 |
| 58. | Deck Steel | Minor Irm.t. | 59 7 |
| | Superstructure . Steel | | 607 |
| 60. | Substructure Steel | Miner Inmf: | 61 7 |
| 61. | Channel & Channel Protection .N. A | | 62 M |
| 62. | Culvert & Retaining Walls | | 63 1 |
| | Estimated Remaining Life 2 Year | | |
| 64. | Operating Rating Proces TRI | AN hOADING | 66 8 00 |
| 65. | Approach Alignment M.A | | |
| 66. | Inventory Rating Procestre | an hoading | 70 8 0 0 |
| | | | а. _с . |
| API | RAISAL | | Decision |
| 67. | Structural Condition | Needs Day | Deficiencies |
| | | | |
| | | | |
| 68. | Deck Geometry | | |
| | | | |
| 69. | Underclearances-Vert. & Lateral X = 4.85 Y | m; Lateral underd | earance width 12 5 |
| | iquals recommended CPR.H | | |
| 70. | Safe Load Capacity | | |
| | | | |
| 71. | | | |
| | | | |
| 72. | Approach Alignment | | |
| | | | |
| PRC | POSED IMPROVEMENTS | | |
| 73. | Year Needed | 3 | 16 [7]3] |
| | Completed | | |
| | Describe | | |
| 74. | Type of Service Pedestrian. | | |
| 75. | Type of Work Rehabil | itation | 19 371 |
| 76. | Improvement Length (0.1 m) 4.3. | 0 | 22000430 |
| | Design Loading NA | | |
| | HARES | | |

| | B 1307 Page 4 of 4 |
|-------------------------------|--|
| 78. | Roadway Width (0.01 m) |
| | Number of Lanes NA |
| 80. | ADT \dots $35 \square \bigcirc $ |
| | Year of Estimated ADT |
| 82. | Year of Proposed Adjacent Roadway Improvements N.A. 43 |
| 83. | Prop. Adj. Rdwy Improvements-Type |
| | |
| COS | ST OF IMPROVEMENTS |
| 84. | Total (dollars) \$ |
| CID | |
| 31700-5527-643838k | MARY OF IMPROVEMENT COSTS |
| ~ ~ ~ ~ | Preliminarý Engineering (Dollars) |
| | Demolition Cost (Dollars) |
| 87. | Substructure (Dollars) |
| 1000 Contract (1000 Contract) | Superstructure (Dollars) |
| | Priority Letter |
| | Rehabilitate Existing Structure (Dollars) |
| | Detour and Traffic Maintenance (Dollars) |
| | Approaches (Dollars) |
| | Approach Embankment (Dollars) |
| | Approach Pavement (Dollars) |
| | Approach Guardrail (Dollars) |
| | (*Code to nearest thousand uollars) |
| Re | marks Rehabilitation Menure includes. painitive |
| • • | |
| • • | $\cdots \cdots $ |
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| • • | |
| | RSONNEL By Date By Date |
| 1000 | actural Inspection S.M. Rodgers |
| | pographic Survey |
| | view of Field Data |
| | and an and a set of the set of th |

| REMARKS | | Br. \$307 |
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| GENERAL EVALUATIO | Concellerst. | а. С |
| 'his bridge is basically in | good soor soor | |
| his bridge is basically in he-load-carrying capaoit | good good y is minimally adequate instructural condition. | |
| 'his bridge is basically in be-load-carrying capaoit | structural condition. good poor yes-poor y is minimally adequate ications will make it minimally adequate. | |
| his bridge is basically in he load carrying capacit he recommended modif | structural condition. good poor yes-poor y is minimally adequate ications will make it minimally adequate. | to determine the cause of |
| his bridge is basically in he-lead-carrying capacit he recommended modif he bridge should be repl | essellent structural condition. poor y is minimally adequate inadequate. aced. routine inspection (every 2 years). Acquent inspection (every 2 years). Acquent inspection (every 2 years). Acquent inspection (every months). In frequent inspection (every - months). Arequent inspection (every - months). Arequent inspection (every - months). Arequent inspection (every - months). And for suspected deficiencies. | |
| his bridge is basically in he-load-carrying capacit he load-carrying capacit he bridge should be repl | routine inspection (every 2 years). Acquent inspection (every 2 years). | to monitor abnormal. |

| COMMONWEALTH OF PUERTO RICO HIGHWAY AUTHORITY IBM-370 AND IBM MT/SC ELECTRONIC DATA STORAGE | Card No. | Page 1 of ₁ 7307 Bridge No. | CO26 Road No. |
|--|----------------|--|---------------------|
| ROUTE UNDER STRUCTUR | RE | | Km. No. <u>4,29</u> |
| | | Code Positi | ions |
| IDENTIFICATION 25 24 23 22 21 20 19 18 17 16 | 15 14 13 12 11 | 10 9 8 7 6 | |
| 5. Inventory Route . PR 26 2835150 | 002650 | 10 2 3 / 0 | 00260 |
| 6. Features Intersected Pedestrian. walk. way. | .C. Provide | ncia | |
| 19 PED WALK C | PROV | IDENC | IA |
| 8. Structure No 1397 | | | 13071 |
| 10. Inventory Route, Minimum Vertical Clearance (0.01 m) | 4.85 | 5 | 0.0485 |
| 11. Kilometer Point (0.01 km) | | | |
| 12. Road Section Number (DOD) | | | 00628 |
| 13. Bridge Description M. D. H. O. D. H N | 575 . P. | | |
| 14. Defense Milepoint (0.01 m) / 2.3 | | ي. | 70 01 7 |
| 15. Defense Section Length (miles) (0.1 mile) | | | 23 017 |
| 19. By Pass, Detour Length (Nearest mile) | | | |
| CLASSIFICATION | | | |
| at El Ald Suntan Other Federal Aid. | Primary | urban | . 75. 04 |
| 25 Administrative State | | | 77 |
| 24. Fed. Ald System | 1 arterial | | |
| | | | 0 1 |
| STRUCTURE DATA | | 16 1 | Card 2 |
| 29. ADT - Inventory Route | | E | 56 - 5 - |
| 30. Year | | ••••• | 18.104 |
| 47. Total Horizontal Clearance (0.01 m) ∠ 1.4. 3 & | 12 10 | 20 | |
| | | | |
| | | | |
| | | | |
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Appendix F Inspection by PRHTA of PB 2336

F.1 April 16, 2014

| INSP. DATE: | ER: Eng. Artu 4/16 | 1 | | | | | | | |
|---|--|---|------------|-----|------|-------|--------------|-----|-----------|
| 1. Inspectio | n Type and D | ates: | | | | | | | |
| NBI | Туре | 2 | Performed? | | | | OUS INSP. DA | | Insp. DAT |
| ITEM 90 | Routine Ins | pection | yes | 4 | 5 | 10 | 2/10/0 | 8 4 | 116/18 |
| ITEM 93 A | FC Inspectio | n | N | ~ | | | - | | |
| ITEM 93 B | Underwate | r Insp. | N | - | - | | | | - |
| ITEM 93 C | Other: | | N | - | | | | - | |
| Current Insp Other Check | ection ks: (Y, N, NA) | 4 | | Rev | view | Comme | ents: | 10 | |
| other offec | | | | | | | | | |
| Scour Crit AASHTO Smart Fla fire damage Channel F FC & Und Asphalt O Drawings Photos Critical Fir | Profile/Clearar erwater Memi verlay Thickn | CD con: el plate, nce Tabl bers Tab ess | e bles | | | | | | |

YourState Department of Transportation Bureau of Bridges and Structures Bridge Maintenance Bridge Inspection Report Bridge Key: 023361 Agency ID: 023361 Sufficiency Rating: -2.0 **IDENTIFICATION** INSPECTION 72 Puerto Rico Struc Num 8: 023361 Frequency 91: State 1: 48 months Inspection Date 90: 4/16/2014 Next Inspection: 04/16/2018 Facility Carried 7: PR 17 (PINERO AV.) Location 9: 4.48 KM EAST OF PR 18 FC Frequency 92A: NA FG Inspection Date 93A: NA Next FC Inspection: NA Rte. Signing Prefix 5B: 3 State Hwy Rte.(On/Under)5A: One Route Under UW Frequency 92B: NA UW Inspection Date 93B: NA Next UW Inspection: NA Level of Service 5C: 1 Mainline Rte. Number 5D: 00017 SI Date 93C: SI Frequency 92C: NA NA Next SI: NA Directional Suffix 5E: 0 N/A (NBI) % Responsibility : NA Element Frequency: 48 months Element Inspection Date: 01/01/1901 Next Elem. Insp. Due: 01/01/1901 SHD District 2: County Code 3: -1 SAN JUAN 74017 Place Code 4: Kilometer Post 11: 08.2 km CLASSIFICATION Feature Intersected 6: PEDESTRIAN WALKWAY Defense Highway 100: 0 Not a STRAHNET hwy Parallel Structure 101: Unknown (NBI) Direction of Traffic 102: 0 Not hwy traffic Latitude 16: 18d 24' 36" Longitude 17: 066d 01' 30" Temporary Structure 103: Not Applicable (P) Highway System 104: 0 Not on NHS NBIS Length 112: Unknown (NRI) Border Bridge Code 98: Unknown (P) Toll Facility 20: 3 On free road Functional Class 26: 14 Urban Other Princ Border Bridge Number 99: Unknown Historical Significance 37: Not Applicable (P) Owner 22: -1 Unknown (P) STRUCTURE TYPE AND MATERIALS Custodian 21: -1 Unknown (P) Number of Approach Spans 46: -1 Number of Spans Main Unit 45: -1 Main Span Material/Design 43A/B: CONDITION 5 Prestressed Concrete 06 Single/Spread Box Deck 58: 6 Satisfactory Super 59: 7 Good Sub 60: 7 Good Culvert 62: N N/A (NBI) Channel/Channel Protection 61: N N/A (NBI) Deck Type 107; Unknown (NBI) LOAD RATING AND POSTING Wearing Surface 108A: Unknown (NBI) Inventory Rating Method 65: Not Applicable (P) Operating Rating Method 63:Not Applicable (P) Membrane 108B: Unknown (NBI) Inventory Rating 66: MS.0 Operating Rating 64; MS0.0 Deck Protection 108C Unknown (NBI) Design Load 31: 7 Pedestrian Posting 70: Unknown (NBI) AGE AND SERVICE Posting status 41: Not Applicable (P) Year Built 27: 1994 Year Reconstructed 106: Unknown Type of Service on 42A: 3 Pedestrian-bicyle APPRAISAL Type of Service under 42B: 1 Highway Approach Rail 36C N N/A or not required Bridge Rail 36A: N N/A or not required Lanes on 28A: Unknown Lanes Under 28B; 8 Detour Length 19: 0.0 km Transition 36B: N N/A or not required Approach Rail Ends 36D: N N/A or not required ADT 29: 89,200 Truck ADT 109: 5 % Year of ADT 30: 2005 Str. Evaluation 67: N Deck Geometry 68: N Not applicable (NBI) GEOMETRIC DATA Underclearance, Vertical and Horizontal 69: 3 Intolerable - Correct Length Max Span 48: 25.00 m Waterway Adequacy 71: N Not applicable Approach Alignment 72: Structure Length 49: 49.90 m Not Applicable Scour Critical 113: Not Applicable (P) Curb/Sdwik Wdth L 50A: Curb/Sidewalk Width R 50B. Width Curb to Curb 51: 2.10 m Width Out to Out 52: PROPOSED IMPROVEMENTS Approach Roadway Width 32: 0.00 m (w/ shoulders) Median 33: Unknown (NBI) Not Applicable (P) Bridge Cost 94: \$0 Type of Work 75: Deck Area: Roadway Cost 95: \$0 Length of Improvment 76: 00.00 m Skew 34: -1.00 " Structure Flared 35: Unknown (NBI) Total Cost 96: \$0 Future ADT 114; 104.125 Minimum Vertical Clearance Over Bridge 53: Year of Cost Estimate 97: 2014 Year of Future ADT 115: 2020 Minimum Vertical Underclearance Reference 54A: H Hwy beneath struct Minimum Vertical Underclearance 54B: 05.03 m NAVIGATION DATA Minimum Lateral Underclearance Reference R 55A: H Hwy beneath struct Navigation Control 38: _ Unknown (NBI) Minimum Lateral Undrclearance R 55: 00.80 m Vertical Clearance 39: Horizontal Clearance 40: Minimum Lateral Undrolearance L 56: 00.40 m Pier Protection 111: Not Applicable (P) Lift Bridge Vertical Clearance 116: ELEMENT CONDITION STATE DATA **BRIDGE NOTES** **note**: AT THE PRESENT TIME (04-16-2014) THIS STRUCTURE IS BEING RECONSTRUCTED. CONSTRUCTION OF ADITIONAL SPAN AT SOUTH SIDE BY CONSTRUCTION OF RAMP WITH ACCESS TO PR-17 **INSP002** Inspect Report Metric Wed 4/23/2014 14:47:58 Agency ID: 023361 Page 1 of 2

| | on | Bureau of Bridges and Structu Bridge Maintena |
|--------------------------------|---|--|
| | Bridge Inspection Report | |
| PAST INSPECTION | | |
| Inspection Date: 04/16/2014 | Type: 1 Regular NBI | |
| Inspector: -1 | Pontis User Key: Pontis - Pontis Po | |
| Scope: | _ | |
| NBI: Voter: Voter: Fracture C | Element: | |
| | | |
| INSPECTION NOTES | | |
| SURFACE. SOME HOLES AT CYCLON | NAL CRACKS, EXPOSED AGGREGATES AND SM E FENCE OF RAILINGS. | IRLE SPALLINGS AT WEARING |
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Team Leader: Arturo Cáceres Bridge Inspector: Micky Santiago Bridge Evaluator: Arturo Cáceres Assistants: John Dávila Driver: Juan C. Otero Inspection date: Abril-16-2014 Weather Conditions: Sunny Amount of Time on Inspection: 1 Hours Equipment: X Bus or Van _ Underwater _ Ladders _ Snooper X Camera _Boat _ Other: Bridge Number: 2336 Road on Structure: N/A Number or Name: Km. Road Under Structure: State Highway Number or Name: PR-17 Km. 8.2 Ident. Plaque: No Num. 36. Traffic Safety Features: Bridge railings: not applicable or safety not reuired Transitions: not applicable or safety not reuired Approach Guardrail: not applicable or safety not reuired Approach Guardrail Ends: not applicable or safety not reuired 41. Posting: Condition: A - Open Sign Type: _ Posting Load: _ COMMENTS AND/OR RECOMMENDATIONS: Actualmente se está trabajando en la estructura, construcción de un "span" adicional en lado sur, por construcción de rampa de acceso a la PR-17. Matt Inspection by: Micky Santiago Revised and Approved by: Arturo Cáceres / **Bridge Inspector Bridge Evaluator** BR-2336

58. DECK

| 58.1 Wearing Surface | : Material: Concrete | Condition: 6 | Thickness cm. |
|--------------------------|------------------------------|-----------------------|---------------|
| Deterioration: 0 to 10 9 | % Drainage: Adequate | Ponding: Yes | Safety: Yes |
| 58.2 Slab or Plate: Ma | aterial: Concrete Cond | ition: 7 | |
| Cracking: None | | | |
| Spalling: Top: Small | Bottom: No | | |
| Scaling: Top: Light | Bottom: No | | |
| Efflorescence: No | Exudation: No Rust Stains: N | lo Corrosion: No | |
| 58.3 Movement: | Deck to backwall: cm. | Deck to approach slab | : cm. |

| | Material | Cond. Rating | Height Loss (cm) | Joints | Drainage | Alignment | Corrosion | Paint | Safety | Cracking | Spalling | Scaling |
|-------------------|------------|-----------------|------------------------|--------|----------|-----------|-----------|-------|--------|----------|----------|---------|
| 58.4 Curb | N/A | | | | | - | - | | - | - | - | - |
| 58.5 Median | N/A | | | | | | - | | | | - | - |
| 58.6 Sidewalks | N/A | | | | - | - | | | | | | - |
| 58.7 Parapets | Concrete | 7 | | Good | Good | Good | | Good | Yes | Fine | | - |
| 58.8 Railing | Galvanized | 7 | | Good | Good | Good | - | Good | Yes | - | | - |

Functioning: Yes

58.9 Lighting Standards: Material: Aluminium Condition: 7 58.10 Utilities:

| 00.10 0411400. | | |
|----------------|-------|-----------|
| Type: | Size: | Safety: _ |
| Type: | Size: | Safety: _ |
| Type: | Size: | Safety: _ |
| | | |

58.11 Joints: Condition: 6

Type: Expansion Functioning: Yes Leaking: Yes Cracking: N Spalling: N Armor: No

Type: N/A Functioning: N/A Leaking: N/A Cracking: N Spalling: N Armor: No

58.12 Drains and Scuppers:

Material: Other Condition: N Functioning: N/A

Comments:

58.1- Superficie con algunas grietas finas transversales y longitudinales, agregados expuestos y pequeños "spallings".58.8- Algunos huecos en las mallas de protección del "railing".

| 1222 | | | | | | | | | | | | |
|-----------|-----------|---------------------|------------|-----------------|------------|-----------|-----------|-------------|--------|-------------|--|-----------|
| 59. | SUPERS | STRUCTUR | E | | | | | | | | | |
| 59. | 1 Bearin | g Devices: | Type: Ela | stometri | ς Οι | t of Plum | ib: No | Paint: | None | | | |
| | Condi | tion: 7 | | | | | | | | | | |
| 59.3 | 2 Bridge | seats, ped | estal, gro | ut pads | , abutme | nts or pi | er seat v | vhere bea | ms be | ar directly | on conc | |
| | Condi | tion: 7 | Cracking: | No | | | Spa | lling: None | e Scal | ing: None | | |
| | Crush | ing: No | | | | | | | | | | |
| 59. | 3 Steel b | eams: N/A | Type: N// | Ą | | | | | | | | |
| | Cond | ition: N | C | orrosior | : None | Pai | nt: None | | | | | |
| 59.4 | 4 Concre | ete: Slab | Type: Pre | est. | | | | | | | | |
| | Cond | ition: 7 | Cracking | | | | Spa | lling: None | e Scal | ina: None | | |
| 59. | 5 Truss: | | Paint: No | | Corrosion. | None | | nbers: N/A | | g. mono | | |
| 59 | 6 Draina | ge: Type: | | | n:N Fu | | | | • | | | |
| | | Condition | | unctioni | | J | vement: | | | | | |
| | - | tion: Norma | | unction | ng. N/A | NO. | vement. | | | | | |
| | | | | | | | | | | | | |
| 59. | 9 Vibrati | ons: Minim | al | | | | | | | | | |
| 60. | 0 SUBS1 | RUCTURE | : | | | | | | | | | |
| | | | Material | Cond. Rating | Cracking | Spalling | Scaling | Corrosion | Paint | Movement | Erosion | Undermini |
| | 60.1.1 | Wingwalls | N/A | N | | | | | - | | | - |
| Abutments | 60.1.2 | Breast- Backwall | N/A | N | | - | | | | | | - |
| 5 | 60.1.3 | Footing | N/A | N | | | | | | | | |
| put | 00.1.5 | rooting | | | | | | | | | and a second | |
| Abut | 60.1.4 | Piles | N/A | N | | | | | - | | | - |

Good

Good

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200

No

No

No

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No

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111

Comments:

Caps

Bracing

Footing

Piles

Caps

Caps

Piles

Bracing

Bracing

Columns

60.2.1

60.2.2

60.2.3

60.2.4

60.2.5

60.3.1

60.3.2

60.4.1

60.4.2

60.4.3

60.3.3 Piles

Piers or Non Pile Bents

Rocker Bents

Pile Bents

Concrete

N/A

Concrete

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

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BR-2336

61. CHANNEL AND PROTECTION Condition: N

61.1 Channel Scour: N/A

61.2 Embankment Erosion: N/A

| | | Туре | Material | Condition Rating | Functioning |
|------|---------------------|------|----------|---------------------|-------------|
| 61.3 | Protective Device | | N/A | N | |
| 61.4 | Fender System | | N/A | N | |
| 61.5 | Rip Rap | | N/A | N | |
| 61.6 | Spur Dikes, Jetties | | N/A | N | |

61.7 Obstruction: N/A

61.8 Channel Change: N/A Detrimental: N/A

61.9 Adequate Waterway: N/A

61.10 Surrounding Area: Flooding: N/A if yes explain:

Erosion: N/A if yes explain:

61.11 Location of piers and/or abutment detrimental: N/A

61.12 Other features that may affect structure:

Comments:

62. CULVERT AND RETAINING WALL

| | Material | Condition Rating | Functioning | Cracking | Spalling | Scaling | Corrosion | Settlement | Alignment | Scour |
|---------------------|----------|------------------|-------------|----------|----------|---------|-----------|------------|-----------|-------|
| 62.1 Barrel | N/A | N | | | | | | | 144 | |
| 62.2 Head Walls | N/A | N | | | | - | | | | |
| 62.3 Cut-off wall | N/A | N | | | | - | | | | |
| 62.4 Retaining wall | N/A | N | | | | | | | | |

if yes explain:

Comments:

BR-2336

| PUERTO RICO HIGHWAY AND TRANSPORTATION AUTHORITY BRIDGE ENGINEERING OFFICE |
|--|
| 71. WATER ADEQUACY: N/A N/A |
| 72. APPROACH ROADWAY |
| 72.1 Alignment: 6 |
| 72.2 Slab or Pavement Condition: N Material: Other |
| Cracking: No Spalling: None Scaling: None Uneven: No |
| Rough: No Settlement: No Movement: Approach slab-backwall: No Breaking up: No |
| Excessive deformation: No |
| Safety: Hazardous: No |
| Drainage: Inadequate: No |
| Movement: Pavement-approach slab: No |
| Embankment: Condition: N Functioning: Yes Erosion: No |
| Construction: Flimsy: No Integrity impaired: No |
| 72.3 Undesirable Impact: No |
| 72.4 Joints: No Type: None Inadequate: N/A Satisfactory Alignment: N/A |
| 72.5 Guardrail Type: None Material: N/A Functioning: N/A |
| Condition: N Alignment Horizontal: N/A Vertical: N/A |
| Joints Functioning: N/A Safety Securely Attached: N/A Pedestrian Hazards: N/A |
| Comments: |
| |
| |
| 90. INSPECTION DATE: Abril-16-2014 |
| 93. CRITICAL FEATURE INSPECTION DATE |
| Fracture Critical: |
| Underwater: |
| Other Special Inspection: |
| 102. DIRECTION OF TRAFFIC: Highway traffic not carried |
| |
| 107. DECK STRUCTURE TYPE: Concrete Cast-in-Place |
| 108. WEARING SURFACE/PROTECTIVE SYSTEM |
| Type wearing surface: Concrete |
| Type Membrane: None |
| |
| 111. PIER OR ABUTMENT PROTECTION (FOR NAVIGATION): N/A 113. SCOUR CRITICAL BRIDGES: N |
| 116. MINUMUM NAVIGATION VERTICAL CLEARANCE: |
| AUXILIARY ITEMS |
| |
| Signs: Type: Route Orientation Material: Alum. Condition: 7 |
| Type: N/A |
| BR-2336 |

RATING ITEM 58 TO 60:

N: Not applicable

- 9: Excellent Condition
- 8: Very Good Condition: no problem noted.
- 7: Good Condition: some minor problems.
- 6: Satisfactory Condition: structural element show some minor deterioration.
- 5: Fair Condition: all primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.

4: Poor condition: advanced section loss, deterioration, spalling, or scour.

3: Serious condition: loss of section, deterioration, spalling, or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.

2: Critical condition: advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.

1: "Imminent" failure condition: major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed

0: Failed condition: out of service: beyond corrective action.

RATING ITEM 61:

N: Not applicable. Use when bridge is not over a waterway (channel)

9: There are no noticeable noteworthy deficiencies which affect the condition of the channel

8: Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition.

7: Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift.

6: Bank is beginning to slump. River control devices and embankment protection have widespread minor damage. There is minor stream bed movement evident. Debris is restricting the channel slightly.

5: Bank protection is being eroded. River control devices and/or embankment have major damage. Trees and brush restrict the channel.

4: Bank and embankment protection is severely undermined. River control devices have severe damage. Large deposits of debris are in the channel.

3: Bank protection has failed. River control devices have been destroyed. Stream bed aggradations, degradation, or lateral

movement has changed the channel to now threaten the bridge and/or approach roadway.

2: The channel has changed to the extent the bridge is near a state of collapse.

1: Bridge closed because of channel failure. Corrective action may put back in light service.

0: Bridge closed because of channel failure. Replacement necessary.

RATING ITEM 62:

N: Not applicable. Use if structure is not a culvert.

9: No deficiencies.

8: No noticeable or noteworthy deficiencies which affect the condition of the culvert. Insignificant scrape marks caused by drift.

7: Shrinkage cracks, light scaling, and insignificant spalling which does not expose reinforcing steel. Insignificant damage caused by drift with no misalignment and not requiring corrective action. Some minor scouring has occurred near curtain walls, wingwalls, or pipes. Metal culverts have a smooth symmetrical curvature with superficial corrosion and no pitting.

6: Deterioration or initial disintegration, minor chloride contamination, cracking with some leaching, or spalls on concrete or masonry walls and slabs. Local minor scouring at curtain walls, wingwalls, or pipes. Metal culverts have a smooth curvature, non-symmetrical shape, significant corrosion, or moderate pitting.

5: Moderate to major deterioration or disintegration, extensive cracking and leaching, or spalls on concrete or masonry walls and slabs. Minor settlement or misalignment. Noticeable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection in one section, significant corrosion, or deep pitting.

4: Large spalls, heavy scaling, wide cracks, considerable efflorescence, or opened construction joint permitting loss of backfill.

Considerable settlement or misalignment. Considerable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection throughout, extensive corrosion or deep pitting.

3: Any condition described in Code 4 but which is excessive in scope. Severe movement or differential settlement of the segments, or loss of fill. Holes may exist in walls or slabs. Integral wingwalls nearly severed from culvert. Severe scour or erosion at curtain walls, wingwalls, or pipes. Metal culverts have extreme distortion and deflection in one section, extensive corrosion, or deep pitting with scattered perforations.

2: Integral wingwalls collapsed severe settlement of roadway due to loss of fill. Section of culvert may have failed and can no longer support embankment. Complete undermining at curtain walls and pipes. Corrective action required to maintain traffic. Metal culverts have extreme distortion and deflection throughout with extensive perforations due to corrosion.

1: Bridge closed. Corrective action may put back in light service.

0: Bridge closed. Replacement necessary.

RATING ITEM 113:

N: Bridge not over waterway.

U: Bridge with "unknown" foundation that has not been evaluated for scour. Until risk can be determined, a plan of action should be developed and implemented to reduce the risk to users from a bridge failure during and immediately after a flood event (see HEC 23).

T: Bridge over "tidal" waters that has not been evaluated for scour, but considered low risk. Bridge will be monitored with regular inspection cycle and with appropriate underwater inspections until an evaluation is performed ("Unknown" foundations in "tidal" waters should be coded U.)

9: Bridge foundations (including piles) on dry land well above flood water elevations.

8: Bridge foundations determined to be stable for assessed or calculated scour conditions. Scour is determined to be above top of footing. (Example A) by assessment i.e., bridge foundation are on rock formations that have been determined to resist scour within the service life of the bridge), by calculation or by installation of properly designed countermeasures (see HEC 23).

7: Countermeasures have been installed to mitigate an existing problem with scour and to reduce the risk of bridge failure during a flood event. Instructions contained in a plan of action have been implemented to reduce the risk to users from a bridge failure during or immediately after a food event.

6: Scour calculation/evaluation has not been made. (Use only to describe case where bridge has not yet been evaluated for scour potential.)

5: Bridge foundations determined to be stable for assessed or calculated scour conditions. Scour is determined to be within the limits of footing or piles (Exam. B) By assessment i.e., bridge foundations are on rock formations that have been determined to resist scour within the service life of the bridge), by calculations or by installation of properly designed countermeasures (see HEC 23).

4: Bridge foundations determined to be stable for assessed or calculated scour conditions; field review indicates action is required to protect exposed foundation (see HEC 23).

3: Bridge is scour critical; bridge foundations determined to be unstable for assessed or calculated scour conditions: Scour within limits of footing or piles. (Example B) or Scour below spread-footing base or piles tips. (Example C)

2: Bridge is scour critical; field review indicates that extensive scour has occurred at bridge foundations, which are determined to be unstable by: (a comparison of calculated scour and observed scour during the bridge inspection) or (an engineering evaluation of the observed scour condition reported by the bridge inspector in Item 60)

1: Bridge is scour critical; field review indicates that failure of piers/abutments is imminent. Bridge is closed to traffic. Failure is imminent based on: (a comparison of calculated scour and observed scour during the bridge inspection) or (an engineering evaluation of the observed scour condition reported by the bridge inspector in Item 60).

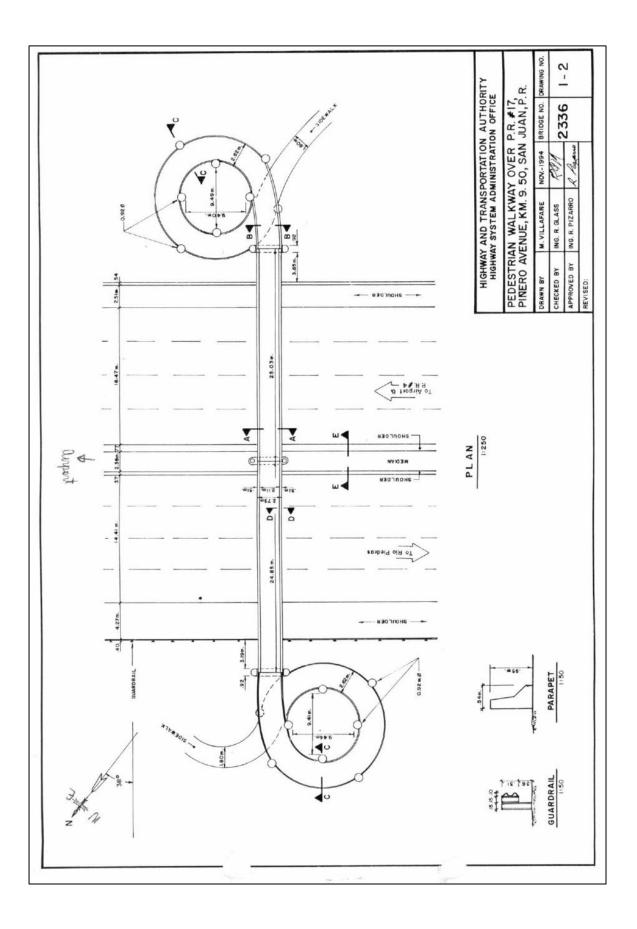
0: Bridge is scour critical. Bridge has failed and is closed to traffic.

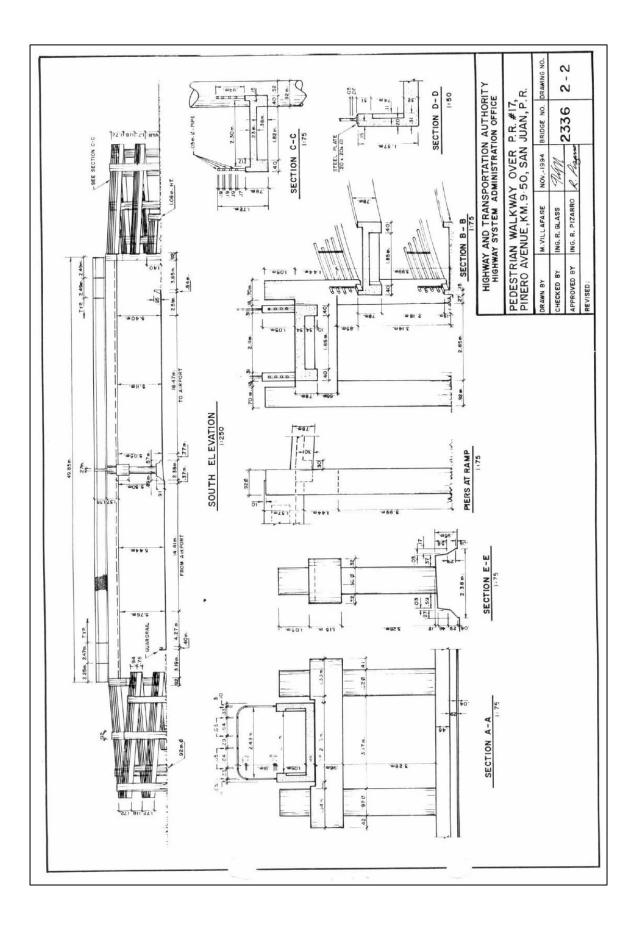
| | Core Elements | | | | | | | | | | | |
|--------------|----------------------|--------------|--------------|-------------------|-------|---------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|--|
| Elem. No. | Elements Description | P a g. | E n v. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity | |
| | | | 3 | | | | | | | | 0 | |
| | | | 3 | | | | | | | | 0 | |
| | | | 3 | | | | | | | | 0 | |
| | | | 3 | | | | | | | | 0 | |
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| | | | 3 | | | | | | | | 0 | |

| | Non Core Elements | | | | | | | | | | |
|--------------|----------------------|--------------|--------------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| Elem. No. | Elements Description | P a g. | E n v. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |

| | Smart Flags | | | | | | | | | | |
|--------------|----------------------|--------------|--------------|-------------------|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| Elem. No. | Elements Description | P a g. | E n v. | State Quantity | Units | Quantity Condition State 1 | Quantity Condition State 2 | Quantity Condition State 3 | Quantity Condition State 4 | Quantity Condition State 5 | Total State Quantity |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
| | | | 3 | | | | | | | | 0 |
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| | | | 3 | | | | | | | | 0 |
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| | | | 3 | | | | | | | | 0 |

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2336-Apr.-16-2014-009.jpg



2336-Apr.-16-2014-010.jpg



2336-Apr.-16-2014-012.jpg

Improving Transportation Infrastructure Resilience Against Hurricanes, Other Natural Disasters, and Weathering: Part II - Analysis of Pedestrian Bridges Failures Due to Hurricane Maria

Volume 2

FINAL REPORT August 2021

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1 Introduction

On September 20, 2017, Puerto Rico was impacted by Hurricane Maria, causing devastation across the island. After Hurricane Maria, Puerto Rico was left with its communication, electrical power, potable water, and transportation infrastructure severely affected. While for some sectors the restoration of services took days, in other areas it took several months. The damages caused by Hurricane Maria in Puerto Rico and the Virgin Islands was about \$90 billion, making it the third most expensive hurricane in the history of the United States (Pasch, Penny, & Berg, 2019). Utilities services were not the only ones affected. Among the irreparable damaged were structures such as houses, buildings, roads, and bridges.

This research project focuses on a pedestrian bridge that used to be located at kilometer 4.1 of the Román Baldorioty de Castro Expressway in San Juan, Puerto Rico. After Hurricane Maria, it was observed that the bridge experienced permanent lateral deflections. Based on preliminary observations, it was theorized that the plastic lateral deflection was the result of the pressure generated by the strong winds on guide signs that were installed on the bridge at some point after the bridge was constructed.

The objective of this project is to assess if the presence of the signs played a key role in the resulting inelastic lateral deflections. To that end, the bridge's general information (geometry and material properties) was obtained in order to develop a structural model of the bridge. This model was subjected to lateral loads consistent with those of the winds cause by Hurricane Maria. Two cases were considered in the analysis of the model: with and without the presence of the guide signs that were present on the bridge during the hurricane. When the results of both cases were compared, it was determined that the signs were an important factor in the lateral deflection of the bridge. There were also other factors observed that may have contributed to the large lateral deflections. Conclusions and recommendations on the impacts of placing signs on pedestrian bridges are presented, together with suggestions that can be considered as preventive measures.

2 Literature Review

To develop the case study, relevant background information was collected, focusing on bridge types and characteristics, bridge modeling, wind loads modelling, steel material behavior (plastic deformations, corrosion), bridge inspection and condition assessment procedures, and bridge design. In this chapter, the topics mentioned were synthesized into two sections. The first section covers the issues of failures and how to identify them, while the second section focuses on pedestrian bridge design.

2.1 Structural Failures on Steel Members

A structure can react in different ways, depending on its current conditions. Therefore, this section covers topics relevant to the structural failure of steel bridges (plastic deformations and corrosion in structural members) and bridge inspection procedures to help identify these and other failures.

2.1.1 Plastic Deformation

When materials are exposed to loads, they suffer deformations. Most of these deformations are in the elastic range and the material returns to its original form when unloaded, but this is not always the case. Materials can also deform in the plastic range, in which the material does not return to its original form when unloaded. In this section, basic concepts of mechanics of materials are reviewed to further explained the subject of plastic deformations.

Stress is a measure of how a force applied to a body is distributed over a particular area. In the case of an axially loaded bar, normal stress is computed with the following equation:

$$\sigma = \frac{P}{A} \tag{1}$$

where:

- σ = normal stress
- P = axial load
- A = cross sectional area of the bar

Typically, a positive sign is used for tensile loads, while a negative sign is used for compressive loads. When using the United States Customary System (USCS), stress is most typically measured in pounds per square inch (psi).

When a body experiences stress, it will generally cause deformations. For an axially loaded bar, a positive normal stress will cause the member to stretch in its longitudinal direction. If the normal stress is negative, the bar will contract in its longitudinal direction. This deformation in the material is known as normal strain and it can be computed using the following formula:

$$\varepsilon = \frac{\delta}{L} \tag{2}$$

where:

 $\varepsilon = normal strain$

 δ = change in length of the bar

L =length of the bar before it is deformed by being loaded

The interaction between stress and strain in an axially loaded bar can be analyzed to understand the behavior of the material. This interaction is best represented with the stress vs. strain diagram. In the diagram, the vertical axis represents the normal stress of the bar, while the horizontal axis represents the normal strain of the bar. Figure 2.1 is an illustration of a typical stress vs. strain diagram for steel. The first section of the diagram is known as the linear elastic region. In the linear region, the material will suffer a deformation as the stress is applied, but once the stress is removed, the material will return to its original shape with no permanent deformations. In this section, the stress is proportional to the strain. The slope of the line in this linear elastic region is known as the modulus of elasticity of the material, and has the same stress units, since the strain is dimensionless.

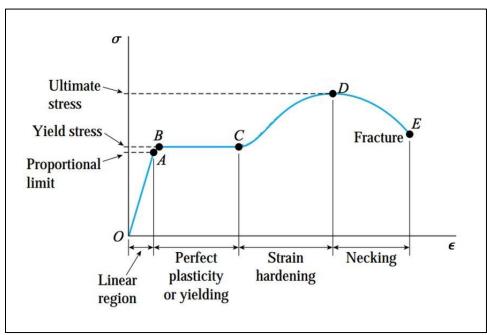


Figure 2.1: Stress vs. Strain Diagram (Gere & Goodno, 2008)

If the stress is continued to be increased, it will reach the proportional limit, and then the material enters the next region which is known as the perfect plasticity or yielding region. In this region, the material's deformation stops being proportional to the stress. The deformation rate increases until reaching the yield point, where the slope becomes practically zero and the material continues its deformation without any increase in stress. Once the material reaches this region, if the stress is removed, the material does not return to its original shape, therefore a permanent deformation is created.

The following region in the stress vs. strain diagram is known as the strain hardening zone, where the material undergoes changes in its structure, resulting in increased strength resistance. This increase in resistance continues until the ultimate stress point is reached, where the material loses the ability to resist further load. During this process, a necking in the material is observed while it continues to deform until finally reaching the point of fracture.

In terms of the response of a bar element to lateral loads, the idealized elasticperfectly plastic model for the material stress-strain behavior can be used, in conjunction with the Bernoulli-Navier hypothesis of beam behavior, to obtain the member plastic moment M_p . As presented in the Figure 2.2, M_p is the moment required to produce full plasticization of the cross section, that is to say, all the cross-section points are working at yielding stress.

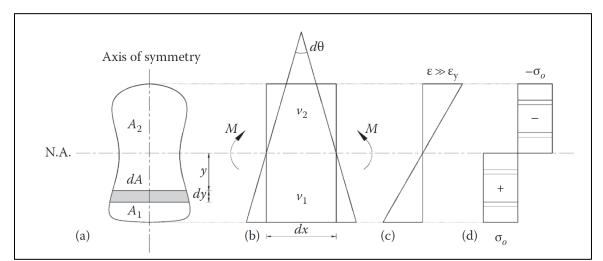


Figure 2.2: Section Plastic Moment: (a) Cross Section; (b) Segment; (c) Strain Distribution; and (d) Stress Distribution (Chen & El-Metwally, 2011)

In this model of concentrated plasticity, it is considered that, once this condition is reached, a plastic hinge is developed at the location of the cross section where M_p is acting, and that the element reached its maximum moment capacity, and the structure could start experiencing large plastic displacements and/or exhibiting failure mechanisms behavior due the plastic hinge formation.

This plastic moment M_p is the maximum moment capacity considered in steel design (that may be reduced due to lateral torsional buckling). It is included as the nominal moment capacity M_n in the interaction equations used for combined actions in beamcolumn members analysis. Thus, the use of this design equations is an indirect way of observing if such full plasticization condition, due to high strength demands imposed by the loading, is close to be reached in a particular member.

2.1.2 Corrosion in Structural Elements

Corrosion is the destructive attack of metal caused by it reacting to its environment (Roberge, 1999). Corrosion may cause failures to any steel structure to which an adequate maintenance has not been given. These failures may turn into costly damages and may threaten the safety of the public. Corrosion can be present in different environments. For example, steel can experience corrosion while being in direct contact with the atmosphere, with fresh water, with seawater, with soils, with reinforced concrete or with biofilms (Roberge, 1999). This section describes atmospheric corrosion, how it affects the structures, how to identify it, and how to control it.

Atmospheric corrosion occurs when a corrosive material is exposed to air and its contaminants (Roberge, 1999). For this electrochemical corrosion to take place in the atmosphere, the presence of an electrolyte is required, which, having free ions, is a good

electrical conductor and allows balancing between the anode and cathode reactions. An anode is an electrode that is positively charged, and a cathode is an electrode that is negatively charged. During the balancing of the reactions the metal loses electrodes in the balancing of the reactions, starting the corrosion process.

According to the damage it produces, corrosion can be classified into three groups (Roberge, 1999):

- Group 1 Identifiable by visual inspection
- Group 2 Identifiable with special inspection tools
- Group 3 Identifiable by microscopic examination

Figure 2.3 presents these three groups, with examples of different types of damages that may occur in each category.

Group 1 consists of uniform corrosion, pitting, crevice corrosion, and galvanic corrosion. Uniform corrosion is characterized by being uniformly distributed on the surface of the material and the material starts thinning until it reaches failure. Pitting is characterized by being in a specific area where cavities form on the surface. This type of corrosion is more difficult to identify; therefore, it is more dangerous than uniform corrosion. Crevice corrosion, in the same way, is a corrosion characterized by being in a specific area. This type of corrosion is formed when there is a stationary solution creating a microenvironment favorable to corrosion. Examples of areas where crevice corrosion can occur are in gaskets, washers, insulating material, surface deposits, loose coatings, threads, and clamps. Finally, the galvanic corrosion occurs when two metals are put in contact with an electrolyte in between. The metal with the noblest corrosion potential then becomes the cathode, while the less noble material is consumed in the anodic solution (Roberge, 1999).

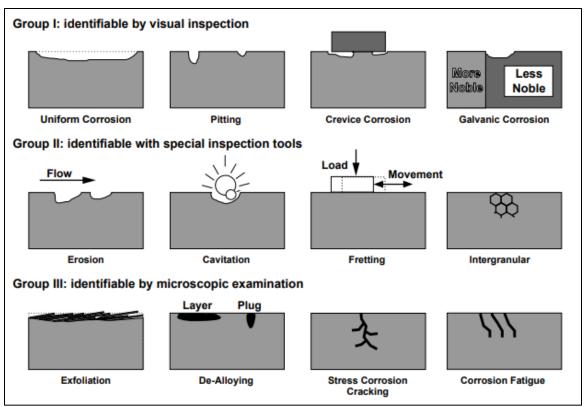


Figure 2.3: Principal Forms of Corrosion (Roberge, 1999)

The modes of failure of Groups 2 and 3 are not discussed here since they are out of the scope of this research because they cannot be identified visually and require additional methods of examination.

To avoid corrosion, it is essential that good prevention methods are carried out. For the prevention of corrosion there are five methods (Roberge, 1999):

- Switch to a more suitable material.
- Modify the material's environment.
- Use protective coatings.
- Apply cathodic or anodic protection.
- Design modifications to the system or component.

However, it is important to remember that the best protection against corrosion is to take it into consideration during the design process. Designs should take into consideration low points where the water accumulates, provide good ventilation and drainage, avoid absorbent materials, provide a good preparation of surface before installing any protective material, and implement a plan of inspection and maintenance.

2.1.3 Bridge Inspection

To facilitate bridge inspection, the *Manual for Bridge Element Inspection* (AASHTO, 2013) can be used as a reference. This manual includes a list of the elements that can be found in bridges with the different types of defects that they may experience. These elements should be evaluated during inspections to determine the condition of the bridge. This manual was used in this research as a reference to make a list of the items to be inspected in order to identify the areas where the bridge defects were located.

The manual divides the elements found in a bridge into two categories. The first is the National Bridges Elements (NBE). This category includes all the structural elements that make up a bridge and are the main elements that support the loads, e.g., columns, beams, trusses, among others. The second is the category Bridge Management Elements (BME). This category focuses on joints, surfaces with wear, and protective layers of materials.

To determine the condition of a bridge, AASHTO (2013) identifies different defects that the components of the NBE and MBE categories may have. For example, a beam can have signs of cracking, corrosion, and loose connections, among others. To evaluate a component being inspected, all the conditions found are rated using a scale of 1 to 4, where 1 represents good and 4 represents severe condition. All these defects are to be evaluated during the field inspection. AASHTO (2013) defines the defects and indicates how to rate their severity. Examples of these are shown in Table 2-1 and Table 2-2.

| Defect Name (Number) | Used to Report | Materials |
|--|---|---------------------------------|
| Crack (Wearing Surface) (3220) | Cracking in wearing surface elements. | Wearing Surfaces |
| Effectiveness (Wearing Surface) (3230) | Loss of effectiveness in the protection provided to the deck by the wearing surface elements. | Wearing Surfaces |
| Chalking (Steel Protective Coatings) (3410) | Chalking in metal protective coatings. | Steel/Metal Protective Coatings |
| Peeling/Bubbling/Cracking (Steel Protective Coatings) (3420) | Peeling, bubbling, or cracking in metal protective coatings. | Steel/Metal Protective Coatings |

| Table 2-1: Exa | ample of Defec | t Definitions | (AASHTO, 2013) |
|----------------|----------------|---------------|----------------|

| Table 2-2: | Evample | of Defect | Rating | (AASHTO | 2013) |
|-------------------|----------|-----------|--------|----------|-------|
| 1 auto 4-4. | L'Admule | UI DUICU | Naune | AADILLO. | 40137 |

| | | Condition States | | | | | | | |
|---|--|--|---|------------------------------------|--|--|--|--|--|
| | 1 | 2 | 3 | 4 | | | | | |
| Defects | GOOD | FAIR | POOR | SEVERE | | | | | |
| Delamination/Spall/ Patched Area/Pothole (Wearing Surfaces) (3210) | None. | Delaminated. Spall less than 1 in. deep or less than 6 in. diameter. Patched area that is sound. Partial depth pothole. | Spall 1 in. deep or greater or 6 in. diameter or greater. Patched area that is unsound or showing distress. Full depth pothole. | The wearing | | | | | |
| Crack (Wearing Surface) (3220) | Width less than 0.012 in. or spacing greater than 3.0 ft. | Width 0.012–0.05 in. or spacing of 1.0– 3.0 ft. | Width of more than 0.05 in. or spacing of less than 1.0 ft. | surface is no longer effective. | | | | | |
| Effectiveness (Wearing Surface) (3230) | Fully effective. No evidence of leakage or further deterioration of the protected element. | Substantially effective. Deterioration of the protected element has slowed. | Limited effectiveness. Deterioration of the protected element has progressed. | | | | | | |

To carry out the inspection, it is necessary to define all the components of the bridge and their quantities. For this is important to have available the drawings of the bridge, or an initial field visit may be required to quantify the different elements. Once all the elements and their quantities are defined, it can be proceeded to identify all the faults found in the bridge components by a site inspection.

2.2 Design and Modeling of Pedestrian Bridges

The topic of pedestrian bridge design was researched in order to have the necessary knowledge to perform adequate modeling of this type of structure. This section discusses modular bridges, the design loads of pedestrian bridges, the installation of signs on these structures, and modeling a bridge using a finite element program.

2.2.1 Modular Bridges

Modular bridges are bridges that are designed to be prefabricated and easy to install on site. These bridges are designed with prefabricated concrete or steel, in controlled environments. These bridges can be installed temporarily or permanently. One of the most famous bridges of this type is the Bailey Modular Bridge.

The Bailey Bridge was designed by the British engineer Donald Coleman Bailey during the Second World War. The safe, quick, and efficient way to assemble the bridge gave it the recognition of being the preferred bridge for military use. Once the Second World War ended, other adaptations for urban and rural use for the bridge were found. Currently, there are improved versions of the bridge like the Acrow Bridge in USA and the Mabey Bridge in Great Britain.

The Bailey bridge consists of two principal beams composed of trusses. Perpendicularly to the two main beams there are also transverse beams which reinforce the bridge. The deck rests on the upper part of the transverse beams. For additional horizontal reinforcement, diagonal bars are installed between the two main beams. In the same way, other reinforcing bars are installed between the transverse beams and the trusses to keep the trusses in vertical position. A main beam could consist of one, two or three trusses that are mounted side by side. One can also add additional truss floors to increase the reach or load capacity. Figure 2.4 shows an example of the Bailey bridge.

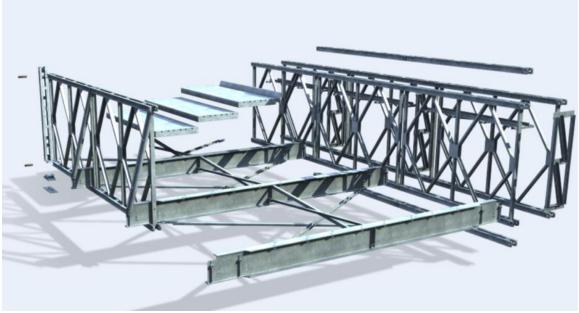


Figure 2.4: Bailey Bridge Model by Mabey (Mabey Bridge, 2019)

2.2.2 Pedestrian Bridge Design

For the design of pedestrian bridges, AASHTO developed the *LRFD Guide Specifications for the Design of Pedestrian Bridges* (AASHTO, 2009). The guide summarizes the design process for pedestrian bridges by citing other design books from AASHTO, the American Welding Society, the American Steel Construction Institute, and others.

Chapter 3 of this guide indicates the loads on the deck of the pedestrian bridge. The first load that is identified is the pedestrian live load of 90 psf. This load is distributed evenly over the length of the pedestrian bridge, and the contemplated load must be for a bridge width equal to or greater than 2 ft.

The guide continues with the vehicular load that must be contemplated in the design of a pedestrian bridges when access to vehicles is not blocked with a permanent structure, such as concrete pedestals, or that the width of the bridge does not allow access of a vehicle. For this project's case study, the vehicular live load is not contemplated since the bridge does not have access for vehicles, not is it wide enough.

The next live load that is identified in the guide is the patch load for equestrian traffic. This patch load has a magnitude of 1,000 pounds distributed over a 4-in by 4-in square.

The next loads discussed in the guide are the ones related to wind. For wind loads, the guide refers directly to the *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals* (AASHTO, 2015), in particular to articles 3.8 and 3.9, which covers wind loads and their effects on structures. These two sections will be discussed in the next section.

Likewise, for wind loads, the guide refers to section 3.8.2 of the *LRFD Bridge Design Specifications* (AASHTO, 2020) which indicates that the design of a pedestrian bridge must contemplate the vertical wind load on a quarter of the bridge on the windward side. The vertical load to be contemplated is 200 psf multiplied by the width of the bridge.

Table 2-3 presents the combination of loads specified in the *LRFD Bridge Design* Specifications (AASHTO, 2020), where:

DD = negative surface friction

DC = dead load of structural components and non-structural accessories

DW = dead load of wear surfaces and utilities

EH = horizontal earth pressure load

EL = cumulative effects of blocked force resulting from the construction process, including secondary forces of post-tensioning

ES = additional ground load

- EV = vertical pressure of dead load of landfill
- *BR* = vehicle braking force
- *CE* = vehicular centrifugal force
- CR = creep
- FR = friction
- *IM* = vehicle dynamic load tolerance
- LL = vehicular live load
- LS = surcharge for live load
- PL = pedestrian live load
- SH = contraction
- TU = uniform temperature
- WA = water load and current pressure
- *WL* = wind live load
- WS = wind load in the structure

Regarding Table 2-3, the combinations Strength II, Strength IV and Strength V do not apply according to the *Manual for Bridge Element Inspection* (AASHTO, 2013).

Table 2-3: Load Combinations and Load Factors (AASHTO, 2020)

| T a 1 | DC DD DW EH | LL IM CE | | | | | TU |
|------------------------------|----------------------|----------------|------|------|-----|------|-----------|
| Load | EV | BR | | | | | TU |
| Combination | ES | PL | | | | | CR |
| Limit State | EL | LS | WA | WS | WL | FR | SH |
| STRENGTH I (unless noted) | γ_p | 1.75 | 1.00 | — | _ | 1.00 | 0.50/1.20 |
| STRENGTH II | γ_p | 1.35 | 1.00 | — | | 1.00 | 0.50/1.20 |
| STRENGTH III | γ_p | _ | 1.00 | 1.40 | — | 1.00 | 0.50/1.20 |
| STRENGTH IV | γ_p | | 1.00 | — | — | 1.00 | 0.50/1.20 |
| STRENGTH V | γ_p | 1.35 | 1.00 | 0.40 | 1.0 | 1.00 | 0.50/1.20 |
| EXTREME EVENT I | γ_p | γEQ | 1.00 | _ | _ | 1.00 | — |
| EXTREME EVENT II | γ_p | 0.50 | 1.00 | — | — | 1.00 | — |
| SERVICE I | 1.00 | 1.00 | 1.00 | 0.30 | 1.0 | 1.00 | 1.00/1.20 |
| SERVICE II | 1.00 | 1.30 | 1.00 | | | 1.00 | 1.00/1.20 |
| SERVICE III | 1.00 | 0.80 | 1.00 | — | — | 1.00 | 1.00/1.20 |
| SERVICE IV | 1.00 | _ | 1.00 | 0.70 | — | 1.00 | 1.00/1.20 |

2.2.3 Installation of Road Signs

For the installation of road signage in existing structures, a specific design must be developed for the structure that will hold the sign in place. For this purpose, AASHTO developed specifications for structures supporting signs, traffic signals and luminaires (AASHTO, 2015). As mentioned in the previous section, these specifications must be used for the calculation of wind loads on pedestrian bridges, even if the bridge is not supporting signs, traffic signals or luminaries. These specifications consider dead loads (*DL*), ice loads, wind loads (*W*) and fatigue loads. The combinations for these loads are presented in Table 2-4.

| Group Load | Load Combination ^a | Percentage of Allowable Stress ^b |
|------------|---------------------------------|--|
| Ι | DL | 100 |
| II | DL + W | 133 |
| III | $DL + Ice + \frac{1}{2}(W)^{c}$ | 133 |
| IV | Fatigue | d |

 Table 2-4: Load Combinations for Structures Supporting Signs (AASHTO, 2015)

Regarding wind loads, the design wind pressure is calculated as follows:

$$P_z = 0.00256K_z K_d G V^2 C_d$$
(3)

where:

 P_z = design wind pressure in pounds per square feet (psf)

 K_z = height and exposure factor

 K_d = directionality factor

G =gust effect factor

V = basic wind speed, expressed as a 3-s gust wind speed, at 33 ft above the ground in open terrain, in miles per hours (mph)

 C_d = drag coefficient

Equation (3) is based on the formulation developed for and presented in the ASCE/SEI 7 Standard. The AASHTO specifications indicate how to calculate or determine the different parameters of Equation (3).

2.2.4 Bridge Modeling

There are several finite element programs that may be used to model bridges. Among the programs with commercial licenses are Abaqus, ANSYS, LUSAS, Midas, CSiBridge, and SAP2000. These programs include tutorials that help the user to understand how to perform the modeling of bridges.

However, at the time of modeling, a limiting factor is the availability and accessibility of the program. For this reason, open-source programs are also an option. There are different open-source programs to perform non-linear analyzes such as Elmer and OpenSEES. For the current project, due to its robustness and availability, SAP2000 v21 was selected to perform the comparative analysis of the bridge response to wind loads.

3 Methodology

A brief description of the steps followed to develop this research project is presented in this chapter. Also, some additional considerations to the methodology are mentioned.

3.1 General Procedure

The following list briefly describes the process followed in this project to achieve the research objective:

- 1. Perform a literature review on the type of bridges to be analyzed.
- Collect background information and available data on the specific bridge to be studied.
- Develop an inspection list using the *Manual for Bridge Element Inspection* (AASHTO, 2013).
- 4. Perform a field visual inspection of the bridge in the field to determine the condition of the elements of the bridge and confirm that there are no existing failures that influenced the bridge deformation. This inspection was carried out using the list that was made in step 3.
- 5. Obtain the geometry of the bridge performing a detail survey. A total station and a drone survey (that obtains high-quality, orthorectified images) were used.
- 6. Select a finite element program for the structural analysis. The program selected was SAP2000 v21.
- With the field data that was obtained, develop a finite element model using the program that was chosen in step 6.

- 8. Model the bridge without the signage and observe the behavior of the pedestrian bridge to see if it fails when the wind pressures, equivalent to those produced by Hurricane Maria, are applied.
- 9. Model the bridge with the signage and observe the behavior of the pedestrian bridge to see if it fails when the wind pressures, equivalent to those produced by Hurricane Maria, are applied.
- 10. Compare the behaviors of the bridge obtained in steps 8 and 9. With the comparison of these results, assess if the signs presence was the main reason for the inelastic deformation that had occurred.
- 11. Offer recommendations regarding the installation of signs on modular pedestrian bridges.

3.2 Additional Considerations

The condition observed in the pedestrian bridge during the inspection (such as the large amount of corrosion in several elements) and other findings (such as bridge support details, and signs support details) that may have played a role in the lateral deflections are also described in the results analysis and conclusions.

This research will help future assessments to be carried out on different bridges around Puerto Rico to which road signs were added without the proper reinforcement of the original structure.

4 Bridge Information and Previous Studies

During this research phase, the Puerto Rico Highway and Transportation Authority (PRHTA) of the Puerto Rico Department of Transportation and Public Works (PRDOT) was visited to obtain all the available information on the bridge being studied. It was found that the bridge is identified as Pedestrian Bridge (PB) 1137 and that it was constructed in 1968, The following sections include information about its location, and the recovered drawings and inspection reports.

4.1 Location

PB 1137 was located at kilometer 4.1 of the Roman Baldorioty de Castro Expressway, San Juan, Puerto Rico. The bridge connected the Norte Shopping Center and the Luis Lloréns Torres public housing complex located north of the expressway with the Villa Palmeras sector south of the expressway.

Figure 4.1 presents an aerial view of the area. In the figure, the area north of the expressway, that includes the Norte Shopping Center and the Luis Lloréns Torres complex, are shaded blue. The area south of the expressway that includes the sector Villa Palmeras is shaded yellow. The bridge has been shaded red and finally the expressway is marked with a green line.

Figure 4.2 presents a view of the bridge from March 2016, while Figure 4.3 presents a view of the bridge after the damages produced by Hurricane Maria. Notice that at some point between March 2016 and the passage of Hurricane Maria in September 2017, a sign on the bridge was replaced with multiple signs. At the time of the field visit, all the signs had been removed.



Figure 4.1: Aerial View of the Bridge Location (Source: Google Maps)



Figure 4.2: Image of the Bridge from March 2016 (Source: Google Maps)



Figure 4.3: Image of the Bridge from September 2018 (Provided by PRHTA)

4.2 Drawings Recovered from Puerto Rico Department of Transportation

During the visits that were performed to the Department of Transportation, copies of two different set of drawings were obtained. The first set of drawings obtained was from 1976, and the second set of drawings acquired was from 2001. The 2001drawings are presented in Appendix A. Since the bridge was built in 1968, based on the inspection reports, both sets of drawings are as-builts.

The set of drawings from 2001 includes one drawing for the existing condition, one drawing for the proposed layout and one drawing for the sections and details. Since one of the drawings is a proposed layout, is understood that this set of drawings was for a remodeling of the bridge. Even though this set of drawings is for a remodeling of the bridge, the existing condition drawing is still different from the existing condition drawing of 1976. Meaning that between 1976 and 2001 there might had been another bridge remodeling for which information was not obtained.

Comparing the existing layout of the 1976 drawings with the one from the 2001 drawings, the bridge was extended from 52.140 meters to 59.585 meters. Additionally, the proposed layout modifications of the 2001 drawing were confirmed to be completed during the site inspections.

4.3 Previous Inspections from Puerto Rico Department of Transportation

During the visits that were done to the Puerto Rico Department of Transportation, copies of different inspection reports of the bridge were obtained. The inspection reports date from 1972 to the most recent of May 2017, just a few months before Hurricane Maria made landfall in Puerto Rico. A total of 13 reports were obtained. There are two major gaps of inspection reports, either because the reports were not saved or because the report was never prepared. These gaps are from 1975 to 1986 and from 2001 to 2014. Outside of these major gaps, the time between reports ranged from one to three years.

The inspection reports have the structural information of the bridge and the evaluation of the condition of three mayor areas: the deck, the superstructure, and the substructure. The evaluation is based on a 0 to 9 scale system, where 9 represents the best evaluation and 0 represents the poorest evaluation. In addition to the condition evaluation, the inspection also consisted in appraising the structural condition of the structure with the same point system. The inspection reports end with recommendations based on the findings. Table 4-1 summarizes the findings of reports that where recovered. In this table, Item 58 represents the deck, Item 59 represents the superstructure, Item 60 represents the substructure and Item 67 represents the structural condition.

| Table 4-1: Summary of Previous Inspection Reports Vecar 59 50 60 67 | | | | | | | |
|---|----|----|----|----|--|--|--|
| Year | 58 | 59 | 60 | 67 | Remarks (as included in the reports) | | |
| 1972 | 7 | 7 | 8 | 7 | Rehabilitation should include replacing missing bolts and safety pins | | |
| | | | | | and also painting | | |
| 1975 | 8 | 7 | 7 | 7 | Rehabilitation should include: (a) Removal of rust from structural steel by means of wire brush or any other acceptable method and the protection of it with paint; (b) The replacement of any structural element if necessary | | |
| 1986 | 7 | 7 | 7 | 7 | Rehabilitation consists of Maintenance, sand blasting and painting | | |
| 1987 | 6 | 6 | 7 | 7 | Rehabilitation consists of repairing light corrosion at steel plate. The structure was painted recently. Fine cracking, small spalling and light corrosion at footing and columns respectfully. | | |
| 1989 | 6 | 6 | 6 | 6 | Rehabilitation consists of repairing ponding, holes, and rust stains at deck steel plates. Severe corrosion at angles. Moderate corrosion at some structural members. Moderate Corrosion at columns. Fine crack, small spalling, and light scaling at footings. Stair railings are broken due to moderate corrosion. | | |
| 1991 | 5 | 5 | 5 | 5 | Severe Corrosion | | |
| 1993 | 6 | 6 | 6 | 6 | This bridge was rehabilitated last year (1992), and no improvement is needed | | |
| 1994 | 5 | 5 | 6 | 5 | Rehabilitation consists of repairing severe corrosion and light section loss at wearing surface due to ponding. Fine cracks, small spallings and light scaling at columns footings. Ponding at stairs and rest area. | | |
| 1996 | 5 | 5 | 6 | 5 | Rehabilitation consists of repairing light corrosion and light section loss. Bridge was painted | | |
| 1999 | 5 | 5 | 6 | 5 | Rehabilitation consists of repairing severe corrosion and light section loss at wearing surface due to ponding. Fine cracks, small spallings and light scaling at columns footings. Ponding at stairs and rest area. | | |
| 2001 | 5 | 5 | 6 | 5 | Rehabilitation consists of repairing severe corrosion and light section loss at wearing surface due to ponding. Fine cracks, small spallings and light scaling at columns footings. Ponding at stairs and rest area. | | |
| 2014 | 5 | 5 | 6 | / | Light to moderate corrosion and some holes by corrosion at steel plates. Lateral components of bracings show light to moderate corrosion and section loss. Moderate section loss by corrosion at upper chords. | | |
| 2017 | 4 | 5 | 5 | / | There is moderate and severe corrosion on the deck surface, including several large perforations. The deck surface of the structure is in poor condition. Several of the lateral components of the "bracing" have light, moderate and severe corrosion, and loss of section. Some sections in the upper chord have moderate loss due to corrosion. Steel columns in good condition, light corrosion | | |

From Table 4-1 it may be appreciated that the substructure was, in the most cases,

considered in a better condition that the deck and the superstructure. It is also appreciated

that, as the years passed, the condition of the structure for the three major areas kept on deteriorating. In the recommendations, in 1987 and 1993, the inspection reports mentioned that the bridge was recently rehabilitated. Nonetheless, with the exception of the report of 1993, all the other reports mentioned that corrosion was present, and that it needed to be repaired.

The corrosion emphasis grew per report and, starting with the report of 1994, the section loss due to corrosion was evident. The final report had the deck condition set as 4 and the superstructure and substructure set as 5, which meant that the bridge was in poor condition.

5 Visual Inspection and Condition Evaluation

In this chapter, the performed visual inspections are described and the corresponding findings are discussed. For the condition evaluation, the lateral deformation of the bridge was not considered.

5.1 Site Visits

As part of the inspection of the bridge, different site visits were conducted. On the first visit it was observed that the bridge was closed to pedestrians because of its poor structural condition. An expanded metal mesh was welded against the steel frames of the bridge and a banner indicating the bridge was closed was installed, as shown in Figure 5.1 and Figure 5.2. During this visit, different photos of the bridge were taken and the dimensions of the elements that were accessible were measured. In addition, a Total Station (shown in Figure 5.3 and Figure 5.4) was used to take points along the bridge to delineate the bridge's lateral displacement. When the points taken were traced in AutoCAD, no significant deflection was observed, thus not enough points during the measuring process were collected to capture the deformation. Since the deflection was not captured with the Total Station, it was decided that another method had to be used.

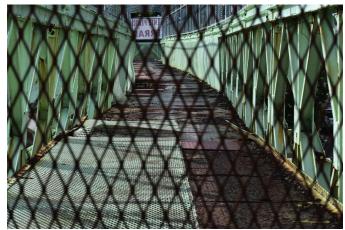


Figure 5.1: Metal Mesh Used to Close Pedestrian Bridge



Figure 5.2: Sign Indicating Pedestrian Bridge is Closed



Figure 5.3: Total Station



Figure 5.4: Total Station Positioned to Measure Bridge

During the second inspection, a DJI PHANTOM drone (as shown in Figure 5.5) was used to take aerial photos. The photos taken during this visit (an example is shown in Figure 5.6) were of low quality probably because the drone flight was done rapidly because of security concerns. It was decided that another flight was needed.



Figure 5.5: Drone Operation at Beginning of Flight



Figure 5.6: Aerial Photograph of the Pedestrian Bridge

For the third site visit, the Administration of the Public Housing Residency was visited, and permission was asked to enter the area and to stay several hours. Security was offered during the site inspection. During this final site visit, another drone flight was made, and a series of high quality and high-definition photographs were taken. Also, closer images were taken so that the structural elements could be analyzed for their condition assessment directly from the photos. Every picture taken up-close included two to three truss panels. An example of this is presented in Figure 5.7. More photos taken of the bridge are presented in Appendix B.



Figure 5.7: Up-close Photo of the Bridge

The series of aerial photos that were taken were orthorectified, meaning that the photos were geometrically corrected so that the scale of the photo is uniform. After this procedure, the photos that were taken were assembled to form a map and real measurements were obtained from the aerial photos.

5.2 Form creation for bridge condition evaluation

Using as a basis the *Manual for Bridge Element Inspection* (AASHTO, 2013), a checklist form was created with the elements that could be found in the pedestrian bridge that was being evaluated. The inspection manual also includes different failures that may occur per structural elements, and they were also taken into consideration.

The elements that were to be inspected were determined from Chapter 2 of the manual. The first element that was determined to be inspected was obtained from Table 2.1.1 of the manual, reprinted in this report as Table 5-1. From this table, the steel deck was the only element that was determined to be inspected. In the manual, this element has the identification number 30 and is measured in square feet.

| Element | Units | Decks | Slab | Other |
|--|-----------------------|-------|------|-------|
| Reinforced Concrete Deck/Slab | area, ft ² | 12 | 38 | |
| Prestressed Concrete Deck | area, ft ² | 13 | | |
| Prestressed Concrete Top Flange | area, ft ² | 15 | | |
| Reinforced Concrete Top Flange | area, ft ² | 16 | | |
| Steel Deck—Open Grid | area, ft ² | 28 | | |
| Steel Deck—Concrete Filled Grid | area, ft ² | 29 | | |
| Steel Deck—Corrugated/ Orthotropic/Etc. | area, ft ² | 30 | | |
| Timber Deck/Slab | area, ft ² | 31 | 54 | |
| Other Material Deck/Slab | area, ft ² | 60 | 65 | |

Table 5-1: Decks and Slabs (AASHTO, 2013)

The second, third and fourth elements that were determined were obtained from Table 2.1.3 of the manual, reprinted in this report as Table 5-2. From this table, the trusses, the floor beams, and the pins were determined. In the manual the truss and the floor beams are measured by length and their identifications numbers are 120 and 152, respectively. The

pins identification number is 161 and they are quantified by the total number of units the bridge contains.

| | | | Prestressed | Reinforced | | | |
|--|------------|-------|-------------|------------|--------|---------|-------|
| Element | Units | Steel | Concrete | Concrete | Timber | Masonry | Other |
| Girder/Beam | length, ft | 107 | 109 | 110 | 111 | | 112 |
| Closed Web/Box Girder | length, ft | 102 | 104 | 105 | | | 106 |
| Stringer | length, ft | 113 | 115 | 116 | 117 | | 118 |
| Truss | length, ft | 120 | | | 135 | | 136 |
| Arch | length, ft | 141 | 143 | 144 | 146 | 145 | 142 |
| Floor Beam | length, ft | 152 | 154 | 155 | 156 | | 157 |
| Cable—Primary | length, ft | 147 | | | | | |
| Cable—Secondary | each | 148 | | | | | 149 |
| Gusset Plate | each | 162 | | | | | |
| Pin, Pin and Hanger Assembly, or Both | each | 161 | | | | | |

Table 5-2: Superstructure (AASHTO, 2013)

The fifth and sixth elements that were determined to be inspected were obtained from Table 2.1.5 of the manual, reprinted in this report as Table 5-3. From this table the columns and the column tower were determined to be inspected. The columns identification number is 202 and the number of units quantify it. The column tower identification number is 207 and they are measured by height.

| Table 5-3: Substructure | (AASHTO, 2013) |
|-------------------------|----------------|
|-------------------------|----------------|

| Element | Units | Steel | Prestressed Concrete | Reinforced Concrete | Timber | Masonry | Other |
|------------------------|------------|-------|-------------------------|------------------------|--------|---------|-------|
| Columns | each | 202 | 204 | 205 | 206 | | 203 |
| Column Tower (Trestle) | length, ft | 207 | | | 208 | | |
| Pier Wall | length, ft | | | 210 | 212 | 213 | 211 |
| Abutment | length, ft | 219 | | 215 | 216 | 217 | 218 |
| Pile | each | 225 | 226 | 227 | 228 | | 229 |
| Pier Cap | length, ft | 231 | 233 | 234 | 235 | | 236 |
| Pile Cap/Footing | length, ft | | | 220 | | | |

Finally, the seventh and eighth elements that were determined were obtained from Table 2.2.3 of the manual, reprinted here as Table 5-4. From this table, the wearing surfaces and steel protective coating were determined to be inspected. In the manual these elements have the identification numbers 510 and 515, respectively, and are measured in square feet.

| Element | Units | Element Number |
|--|-----------------------|-------------------|
| Wearing Surfaces | area, ft ² | 510 |
| Steel Protective Coating | area, ft ² | 515 |
| Concrete Reinforcing Steel Protective System | area, ft ² | 520 |
| Concrete Protective Coating | area, ft ² | 521 |

Table 5-4: Wearing Surfaces and Protective Coatings (AASHTO, 2013)

After determining the elements that were to be inspected, Chapter 3 of the manual was used to choose the conditions for which each element would be evaluated. The conditions chosen, with their corresponding identification numbers, where the following: corrosion (1000), connection (1020), distortion (1900), damage (7000), chalking (3410) and effectiveness (3440). These conditions are evaluated in a point system going from 1 to 4, where 1 is good and 4 is severe. An example of this evaluation may be seen in Table 5-5, which illustrates the different defects and how they are categorized. Note that this scale is different from the one used in previous inspections reports presented in the section 4.3, where the evaluation is done from 0 to 9 where, 0 is bad and 9 is very good.

With all the elements and conditions established, a table based on the Table B3.3 of the manual was developed.

Table 5-6 includes all the elements that were decided to be evaluated.

Table 5-5: Condition State Definitions for Steel Deck (AASHTO, 2013)

| | Condition States | | | | | | | | |
|----------------------|---|--|--|---|--|--|--|--|--|
| | 1 | 2 | 3 | 4 | | | | | |
| Defects | GOOD | FAIR | POOR | SEVERE | | | | | |
| Corrosion (1000) | None. | Freckled rust. Corrosion of the steel has initiated. | Section loss is evident or pack rust is present but does not warrant structural review. | The condition warrants a structural review to | | | | | |
| Cracking (1010) | None. | Crack that has self- arrested or has been arrested with effective arrest holes, doubling plates, or similar. | Identified crack that is not arrested but does not warrant structural review. | determine the effect on strength or serviceability of the element or bridge: OR a | | | | | |
| Connection (1020) | Connection is in place and functioning as intended. | Loose fasteners or pack rust without distortion is present but the connection is in place and functioning as intended. | Missing bolts, rivets, or fasteners; broken welds; or pack rust with distortion but does not warrant a structural review. | bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge. | | | | | |
| Damage (7000) | Not applicable. | The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry. | The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry. | | | | | | |

Table 5-6: Element Quantity and Condition State Summary

| Element Type | Area | Element Number | Element Description | Unit of Measure | Total Quantity | Condition State 1 | Condition State 2 | Condition State 3 | Condition State 4 | Defect # |
|-------------------|---------------------------------|-------------------|--------------------------|--------------------|-------------------|----------------------|----------------------|----------------------|----------------------|----------|
| | | 30 | Steel Deck | area, ft^2 | | | | | | |
| | Decks and Slabs | 1000 | Corrosion | area, ft^2 | | | | | | |
| | | 1020 | Connection | area, ft^2 | | | | | | |
| | | 120 | Truss | length, ft | | | | | | |
| | | 1000 | Corrosion | length, ft | | | | | | |
| | | 1020 | Connection | length, ft | | | | | | |
| | | 1900 | Distortion | length, ft | | | | | | |
| | | 7000 | Damage | length, ft | | | | | | |
| National Bridge | Superstructure | 152 | Floor Beam | length, ft | | | | | | |
| Elements (NBS) | | 1000 | Carrosion | length, ft | | | | | | |
| crements (nos) | | 1020 | Connection | length, ft | | | | | | |
| | | | Pin | each | | | | | | |
| | | 1000 | Corrosion | each | | | | | | |
| | | 1020 | Connection | each | | | | | | |
| | | 202 | Columns | each | | | | | | |
| | | 1020 | Connection | each | | | | | | |
| | Substructure | 207 | Column Tower | length, ft | | | | | | |
| | | 1000 | Carrosion | length, ft | | | | | | |
| | | 1020 | Connection | length, ft | | | | | | |
| | | 510 | Wearing Surfaces | area, ft^2 | | | | | | |
| Bridge Management | Wearing Surfaces and Protective | 515 | Steel Protective Coating | area, ft^2 | | | | | | |
| Elements (BMS) | Coatings | 3410 | Chalking | area, ft^2 | | | | | | |
| | | 3440 | Effectiveness | area, ft^2 | | | | | | |

5.3 Assessment

To complete the form presented on

Table 5-6, all the elements had to be quantified and visually given a value condition from 1 to 4. To determine the quantity of the elements, the following computations were made:

- Deck
 - The deck is composed of steel plates.
 - Steel Deck (Element 30): Quantity 204 ft (in length) x 5.5 ft (in width) = 1,122 ft²
- Superstructure
 - The superstructure is composed of trusses, floor beams and pins.
 - Truss (Element 120) Quantity: 9 ft (in length) x 2 truss (per span) x
 20 (spans) = 360 ft
 - Floor Beam (Element 152) Quantity: 9 ft (in length) x 1 beam (per span) x 20 (spans) = 180 ft
 - Pins (Element 161) Quantity: 8 (pins per span) x 20 (spans) = 160 pins
- Substructure
 - The substructure is composed of columns and columns towers.
 - Columns (Element 202) Quantity: 4 in total
 - Column Towers (Element 207) Quantity: 2 in total
- Protective Coating
 - The surface of the structure is completely painted.

Steel Protective Coating (Element 515) Quantity: (Calculated from 0

"as-built" drawings presented in Appendix A) = $8,490 \text{ ft}^2$

To determine the area of the structure, Table 5-7 was created. 0

| | | | | | -7: Surface Are | | | Total | Total | Total | |
|--------|-------------------------------|-----|----------|--------------|-----------------------------|--------|-----------------|------------------|---------------|---------------|--------------------|
| Group | Element | Qty | Sections | Total Qty | From Drawir Nominal Size | Length | Surface [in] | Total Surface | Total Area | Total Area | Total [sq. ft.] |
| | | | | | | [in] | | [in] | [sq. in.] | [sq. ft.] | |
| | Longitudinal Channel Top 1 | 2 | 40 | 80 | 4" x 2" x 1/4" | 116 | 8 | 16 | 1856 | 12.89 | 1031.11 |
| | Longitudinal Channel Top 2 | 2 | 40 | 80 | 4" x 2" x 1/4" | 116 | 8 | 16 | 1856 | 12.89 | 1031.11 |
| | Longitudinal Channel Bottom 1 | 2 | 40 | 80 | 4" x 2" x 1/4" | 116 | 8 | 16 | 1856 | 12.89 | 1031.11 |
| | Longitudinal Channel Bottom 2 | 2 | 40 | 80 | 4" x 2" x 1/4" | 116 | 8 | 16 | 1856 | 12.89 | 1031.11 |
| Truss | Vertical Channel | 3 | 40 | 120 | 3" x 1" x 1/8" | 57 | 5 | 10 | 570 | 3.96 | 475.00 |
| Panel | Diagonal Channel | 2 | 40 | 80 | 3" x 1-1/2" x 1/8" | 41 | 6 | 12 | 492 | 3.42 | 273.33 |
| Faller | Diagonal Channel | 2 | 40 | 80 | 3" x 1-1/2" x 1/8" | 41 | 6 | 12 | 492 | 3.42 | 273.33 |
| | Diagonal Channel | 2 | 40 | 80 | 3" x 1-1/2" x 1/8" | 41 | 6 | 12 | 492 | 3.42 | 273.33 |
| | Diagonal Channel | 2 | 40 | 80 | 3" x 1-1/2" x 1/8" | 41 | 6 | 12 | 492 | 3.42 | 273.33 |
| | Reinforcing Plate | 1 | 40 | 40 | 9" x 9" | 9 | 9 | 18 | 162 | 1.13 | 45.00 |
| | Reinforcing Plate | 2 | 40 | 80 | 9" X 4-1/2" | 4.5 | 9 | 18 | 81 | 0.56 | 45.00 |
| | Transverse Beam | 1 | 20 | 20 | 10" x 5" x 5/16" | 108 | 20 | 40 | 4320 | 30.00 | 600.00 |
| | Diagonal Bracing Channel | 2 | 20 | 40 | 3" x 1-1/2" x 1/8" | 51.5 | 6 | 12 | 618 | 4.29 | 171.67 |
| Floor | Transverse Bracing Channel | 4 | 20 | 80 | 4" x 1-1/2" x 1/8" | 75 | 7 | 14 | 1050 | 7.29 | 583.33 |
| 11001 | Longitudinal Channel | 4 | 20 | 80 | 4" x 1-1/2" x 1/4" | 116 | 7 | 14 | 1624 | 11.28 | 902.22 |
| | Transverse Angle Bracing | 2 | 20 | 40 | 3" x 3" x 1/8" | 75 | 6 | 12 | 900 | 6.25 | 250.00 |
| | Longitudinal Angle Bracing | 2 | 20 | 40 | 3" x 3" x 1/8" | 60 | 6 | 12 | 720 | 5.00 | 200.00 |
| | | | | | | | | | | Total | 8490.00 |

Table 5 7. Surface As

With the quantities established, the bridge was evaluated. The results from the evaluation are presented in Table 5-8. Following is a discussion of how these results were obtained.

| Table 5-8: Element Quantity and Condition State Summary Evaluate | | | | | | | | | | |
|--|----------------|-------------------|--------------------------|--------------------|-------------------|----------------------|----------------------|----------------------|----------------------|----------|
| Element Type | Area | Element Number | Element Description | Unit of Measure | Total Quantity | Condition State 1 | Condition State 2 | Condition State 3 | Condition State 4 | Defect # |
| | Decks and | 30 | Steel Deck | area, ft^2 | 1,122 | | | | | 4 |
| | Slabs | 1000 | Corrosion | area, ft^2 | 1,122 | | | | 1,122 | 4 |
| | 51855 | 1020 | Connection | area, ft^2 | 1,122 | | | | 1,122 | 4 |
| | | 120 | Truss | length, ft | 360 | | | | | 4 |
| | | 1000 | Corrosion | length, ft | 360 | | | 198 | 162 | 3,4 |
| | | 1020 | Connection | length, ft | 360 | | 198 | 162 | | 2,3 |
| | | 1900 | Distortion | length, ft | 360 | 148 | | | 212 | 1,4 |
| National | | 7000 | Damage | length, ft | 360 | 360 | | | | 1 |
| Bridge | Superstructure | 152 | Floor Beam | length, ft | 180 | | | | | 2 |
| Elements | | 1000 | Corrosion | length, ft | 180 | 117 | 63 | | | 1,2 |
| (NBS) | | 1020 | Connection | length, ft | 180 | 144 | 36 | | | 1,2 |
| (| | 161 | Pin | each | 160 | | | | | 1 |
| | | 1000 | Corrosion | each | 160 | 160 | | | | 1 |
| | | 1020 | Connection | each | 160 | 160 | | | | 1 |
| | | | Columns | each | 4 | | | | | 1 |
| | | 1020 | Connection | each | 4 | 4 | | | | 1 |
| | Substructure | 207 | Column Tower | length, ft | 27 | | | | | 4 |
| | | 1000 | Corrosion | length, ft | 27 | | 27 | | | 2 |
| | | 1020 | Connection | length, ft | 27 | | | | 27 | 4 |
| Bridge | Wearing | 510 | Wearing Surfaces | area, ft^2 | 8,490 | | | | | N/A |
| Management | Surfaces and | 515 | Steel Protective Coating | area, ft^2 | 8,490 | | | | | 3 |
| Elements | Protective | 3410 | Chalking | area, ft^2 | 8,490 | | 8,490 | | | 2 |
| (BMS) | Coatings | 3440 | Effectiveness | area, ft^2 | 8,490 | | | 8,490 | | 3 |

Table 5 8. Floment Or antity and Condition State Sum w Evoluot

To evaluate the pedestrian bridge, it is important to understand the points system. This is summarized as follows (AASHTO, 2013):

- 1 Good No observation is made.
- 2 Fair Corrosion has initiated, loose fasteners, distortion not requiring mitigation, the surface is substantially effective.
- 3 Poor Section loss is evident, missing elements, distortion that requires mitigation, the surface has limited effectiveness.
- 4 Severe The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge.

Based on this points system, the following overall condition was given to the structure:

Deck - Condition State 4 - It was evaluated in this condition due to the corrosion along the complete deck, causing some holes. Also due to corrosion, some bracing elements had fallen off. Falling elements are a major threat to safety since the bridge is located above a principal roadway of Puerto Rico. Figure 5.8 shows that corrosion had already eaten up part of the steel deck surface (as appreciated by the sunlight passing through the deck) and that diagonal bracings have fallen off. The type of diagonal bracing that is missing in Figure 5.8, can be somewhat appreciated in Figure 5.9, which itself shows an incomplete set of diagonals.



Figure 5.8: Loss of Decking due to Corrosion and Missing Bracing Elements



Figure 5.9: Missing Bracing Elements

• Superstructure - Condition State 4 - Even though the superstructure consists of three different items (the truss, the floor beam, and the pins), the overall condition given to this item was 4 due to the evident corrosion along the truss elements, including section loss. Since the truss was determined in condition

state 4, the whole superstructure was determined as this state. This determination was based on if a truss element fails, it will compromise the integrity of the whole structure. In Figure 5.10, Figure 5.11 and Figure 5.12 the uniform corrosion along the truss may be seen. Going even further, in Figure 5.11 and Figure 5.12 some areas have holes in the channel of the truss due to the corrosion. Because of this level of corrosion, the channels were given a condition state 4. In Figure 5.13 and Figure 5.14 a uniform corrosion may be seen on top of the beam and crevice corrosion may be seen where the beam is in contact with the channel. It is evident that corrosion is present, but since the bridge was closed at the time of the inspection, a closer observation was not possible. From afar, section loss of the beams was not evident, so they were evaluated as condition state 2.



Figure 5.10: Corrosion in Truss Element (Example 1)



Figure 5.11: Corrosion in Truss Element (Example 2)



Figure 5.12: Corrosion in Truss Element (Example 3)



Figure 5.13: Corrosion in Floor Beams (Example 1)



Figure 5.14: Corrosion in Floor Beams (Example 2)

• Substructure - Condition State 4 - The substructure consists of the columns and the column tower. Even though the columns were found in good condition, the column towers were missing connections. Due to the missing connections the overall condition given to the substructure was 4, as in the case of the superstructure. In Figure 5.15 and Figure 5.16 a loose connection and a section loss due to corrosion are presented, respectively.



Figure 5.15: Loose Connection at Column Tower



Figure 5.16: Section Loss due to Corrosion at Column Tower

• Wearing Surfaces - Condition State 3 - This item was evaluated in the condition state 3 because of the limited effectiveness the paint has, due to the evident corrosion in the structure, as it may be appreciated in Figure 5.17.



Figure 5.17: Painting Effectiveness in Corrosion

Appendix E of the element inspection manual indicates different actions that may be taken given a state condition, as follows:

- 1 Good Do nothing; Protect.
- 2 Fair Do nothing; Protect; Repair.
- 3 Poor Do nothing; Protect; Repair; Rehabilitate; Replace.
- 4 Severe Do nothing; Protect; Repair; Rehabilitate; Replace.

Based on these indications, it was determined that for the deck, replacement would be the best action due to the section loss of the steel deck, the pedestrian safety could not be assured. On the other hand, it is evident that the superstructure merits a structural review. Once a structural review has been carried out, if the pedestrian bridge may still be used, repair or replacement of the compromised sections would be required. For the substructure, repair and rehabilitation would be needed. Finally, for the wearing surfaces, it would be necessary to repair by removing the corrosion and rehabilitation by application of a new layer of protective coating.

5.4 Comparing Results

With the evaluation of the bridge condition completed, the values obtained were compared with those presented in the latest inspection report recovered from the Department of Transportation of Puerto Rico dated May 2017. To be able to carry the comparison, a relationship needed to be established between the 1-to-4-point system used in this report with the 0-to-9 scale used in PRDOT inspection reports. The relationship established between the two systems is presented in Table 5-9. For example, it was determined that a Good Condition corresponding to the number 1 on the 1-to-4 scale corresponds to a value on 7 to 9 in the 0-to-9 scale.

| Condition | Current Inspection | PRDOT Inspection |
|-----------|--------------------|------------------|
| Good | 1 | 9 - 7 |
| Fair | 2 | 6 - 5 |
| Poor | 3 | 4 - 3 |
| Severe | 4 | 2 - 0 |

 Table 5-9: Equivalency Between Current and PRDOT Condition State Criteria

Having established the relationship between the different rating systems, Table 5-10 presents a comparison between the assessment of the May 2017 inspection report by PRDOT and the evaluation carried out for this project in 2018. It can be seen that for the 2017 inspection the condition state given to the bridge was poor, while for this project the condition state was determined to be sever. It is apparent that the degradation of the bridge due to corrosion was accelerating, and although the current evaluation could have been too strict, it is evident that immediate action was required for the bridge.

| Inspection | Deck | Superstructure | Substructure |
|--------------------|------------|----------------|--------------|
| 2017 (Previous) | 4 (Poor) | 5 (Fair) | 5 (Fair) |
| 2018 (Current) | 4 (Severe) | 4 (Severe) | 4 (Severe) |

Table 5-10: Condition State Comparison

6 Assessment of Bridge Deflected Geometry

The surveying of the bridge was performed with a DJI Phantom Drone, as mentioned in Chapter 5. The following two sections will describe how the surveying of the bridge was done using the drone.

6.1 Procedure

The use of drones for surveying has become more practical due to the advancement in image processing and GIS/Mapping software. Aerial mapping is now done with the use of drones and the orthorectified images obtained gives accurate surveying dimensions. For the surveying of the pedestrian bridge, a DJI Phantom Drone was used (see Figure 6.1). Using the software PIX4D, first the area in which the mapping will be done must be selected. The selection is done directly from the smart device that is used to fly the drone. Once the area is selected, the photo mapping starts.



Figure 6.1: DJI Phantom Drone (Source: DJI)

During the mapping, the drone flew over the pedestrian bridge taking pictures of the bridge every few feet. Approximately 100 pictures were taken overall. These pictures were then processed with PIX4D software. The software overlayed the pictures taken, creating a map of the area. Then, the same software orthorectifies their dimension creating an

accurately dimensioned map. Figure 6.2 illustrates the result of the orthorectified-mapping image obtained from PIX4D.



Figure 6.2: Areal Mapping of the Pedestrian Bridge

6.2 Outcomes

With the image obtained from the aerial mapping, measurements of the bridge may be obtained. First, the image was compared to the aerial image that was retrieved from Google Maps. In Figure 6.3, the image from Google Maps is compared to the one obtained from the survey. A red line was overlaid on both images to make the lateral deformation of the bridge after Hurricane Maria more noticeable. To accurately determine the lateral deformation of the bridge, the image obtained from the survey was imported to AutoCAD.



Figure 6.3: 2016 (Google Earth) and 2018 (Drone Survey) Bridge Geometry Comparison

Using Google Earth, the dimension of the bridge was verified, as illustrated in Figure 6.4. The length obtained from Google Earth was 202 ft. Considering that the bridge has a length equivalent to 20 truss panels, and every truss panel measures approximately 10 ft, the distance obtained from Google Earth is considered accurate. The distance of 10 feet of the truss panel was verified in the field, and it is also the same length indicated in an old manual for the Bailey Bridge (U.S. War Department, 1943). With the surveyed image imported to AutoCAD, it was scaled to measure the same distance measured using Google Earth. As illustrated in Figure 6.5, the length of the pedestrian bridge was scaled to measure 2,424 inches (202 feet).



Figure 6.4: Google Earth Dimension Verification

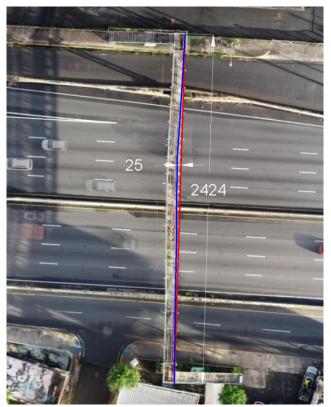


Figure 6.5: Bridge Dimension

In addition to the bridge length, the deflection was also measured. For this, two colored lines were drawn in AutoCAD and the distance between them was measured (as presented in Figure 6.5 and Figure 6.6). The first line drawn was the red line, which runs straight from north to south of the bridge. The second line drawn was the blue line, which follows the contour of the bridge. Then an offset was given to the red line so that it touched the tangent of the blue line. In the intersection of the tangent point, the distance between the original red line and the blue line measured 25 inches, as illustrated in Figure 6.6. With this dimension, it is understood that the bridge had an approximate lateral deflection of 25 inches in its most critical point. In addition, looking closely, it can be appreciated that this point corresponds to the location of the second to last structural beam that supported the signs.



Figure 6.6: Bridge Maximum Plastic Deflection (in inches)

7 Laboratory Testing of Bridge Fragments

Due to its condition, the pedestrian bridge was demolished. This permitted the collection of fragments of the bridge to be tested for determining material strength. This chapter presents information on how the bridge was demolished, how the fragments were recovered and tested, and what were the results of the tests.

7.1 Bridge Demolition and Sample Procurement

The bridge was constructed to cross over the expressway Roman Baldorioty de Castro, one of the main roads of the San Juan Metropolitan Area. This meant that, for the bridge demolition, the expressway had to be closed and traffic redirected. The Puerto Rico Department of Transportation granted permission for the demolition, and it was scheduled to start on March 10, 2019, at midnight, and to last 12 hours.

The demolition started as scheduled. For the demolition, the bridge was moored with two cranes. Figure 7.1 illustrates the rigging of the bridge. The bridge consisted of three spans from which the middle span was the first section to be moored. After the middle span was secured with the cranes, using a man lift that section was cut out with oxyacetylene. After the middle section was completely cut out (as shown in Figure 7.2), it was lowered to the street. Once it was laying in the street it was cut into smaller sections and loaded to a flatbed for final transportation to its disposal facility, as shown in Figure 7.3. This procedure was repeated with the other sections.

After the bridge had been removed and transported to a yard (see Figure 7.4), the company in charge of the demolition was contacted. A formal letter from the Polytechnic University of Puerto Rico (see Appendix C) was submitted to the demolition contractor requesting bridge fragments to be tested to determine mechanical properties of the bridge

elements. After several months of negotiations, on April 26, 2019, the contractor handed the fragments presented in Figure 7.5.



Figure 7.1: Bridge Rigging



Figure 7.2: Bridge Being Removed



Figure 7.3: Transportation of Demolished Bridge



Figure 7.4: Demolished Bridge at Junkyard (April 26, 2019)



Figure 7.5: Bridge Fragments Recovered

7.2 Applicable ASTM Standard

The standard applied to the testing of the recovered bridge fragments was ASTM E8 – *Standard Test Methods for Tension Testing of Metallic Materials* (2016). The purpose of following this ASTM is to perform tension tests to determine the yield strength of the fragments of the bridge that were recovered.

When conducting the tension test, it is important the specimen is held in a position where the load is transmitted axially through the whole cross-sectional area. For this, special care must be taken during the gripping of the specimen in the testing machine. Once the specimen is ready to start the load test, special attention also must be made for the speed of testing. The speed shall not be greater than that at which the lectures can be accurately recorded. When determining yield properties, the speed of testing shall be between 10,000 and 100,000 psi/min.

The specimens used in the tension tests must have the appropriate dimensions. For this project, the specimens were prepared following the ASTM requirements for a Rectangular Tension Test Specimen, as presented in Figure 7.6. The dimensions established from the figure are the following:

- Gauge Length (G): 2.000 ± 0.005 in
- Width (W): $1\frac{1}{2} + 1/8$ in
- Thickness (T): Thickness of material
- Radius of fillet, min (R): $\frac{1}{2}$ in
- Overall length, min (L): 8 in
- Reduced section (A); $2^{1/4}$ in
- Length of Grip Section (B): 2 in
- Width of Grip Section (C): 2 in

Once the specimen has been cut, gauge marks have to be placed on it to determine the elongation. This marks may be painted, scribed, or drawn.

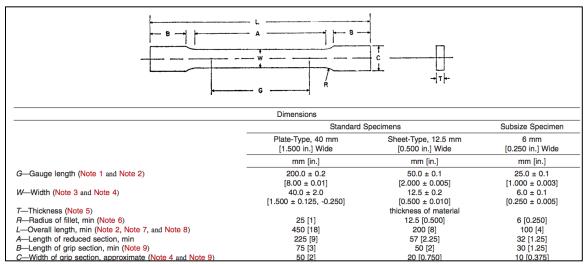


Figure 7.6: Dimensions of Rectangular Tension Test Specimens (ASTM E8, 2016)

7.3 Specimen Preparation and Test Procedure

The recovered fragments of the pedestrian bridge were taken to a metal workshop where a water-jet cutter (shown in Figure 7.7) was used to cut out the specimens to be tested. The specimens were specifically cut out from a C3x5 section used as a diagonal. The water-jet cutter was used so that the properties of the material were not altered by heat. Since deformations and heating by welding, or cutting may affect the properties of the material, special attention was taken to avoid areas of the channel that could have been affected during the demolition of the bridge.



Figure 7.7: Water-jet Cutter

Figure 7.8 illustrates four specimens that were ready to be tested. Prior to testing, the specimens were measured to assure that they had the dimensions required by the ASTM standard, as shown in Figure 7.9 and Figure 7.10.



Figure 7.8: Testing Specimens

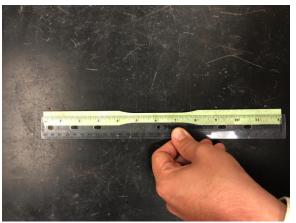


Figure 7.9: Specimen Cut Verification (1 of 2)



Figure 7.10: Specimen Cut Verification (2 of 2)

To determine the cross-sectional area in which the load for the tensile stress would be applied a Mitutoyo Digital Caliper was used. Using the caliper, three different measurements were taken for the thickness and the width of the specimen as illustrated in Figure 7.11 and Figure 7.12. Then the average of these measurements was calculated and used to compute the cross-sectional area of the specimen.



Figure 7.11: Measurement of Specimen Thickness



Figure 7.12: Measurement of Specimen Width

The tensile tests on the specimens were conducted at Construction Materials Laboratory of the Polytechnic University of Puerto Rico, San Juan Campus. The apparatus that was used to conduct the tests was an Instron 300DX shown in Figure 7.13. A total of six specimens were tested and the results will be discussed in the following section.



Figure 7.13: Tensile Testing Apparatus

7.4 Results

Initially, only two specimens were tested for equipment verification, procedures verification, grip adjustment, and calibration purposes. After these two run tests, the other four specimens were tested, and the results were within expected ranges for the material strength. Table 7-1 illustrates the measurements that were obtained from those four specimens with respect to their width and thickness. With their width and thickness their corresponding area was determined, and this information was used with the tensile testing apparatus.

Table 7-1: Measurements of Specimens

| Sample | Width | Average Width | Thickness | Average Thickness | Area |
|--------|--------|------------------|-----------|----------------------|--------|
| | 0.4690 | | 0.1740 | | |
| 1 | 0.4690 | 0.4690 | 0.1745 | 0.1743 | 0.0818 |
| | 0.4690 | | 0.1745 | | |
| | 0.5020 | | 0.1665 | | |
| 2 | 0.5030 | 0.5033 | 0.1670 | 0.1670 | 0.0841 |
| | 0.5050 | | 0.1675 | | |
| | 0.5055 | | 0.1695 | | |
| 3 | 0.5045 | 0.5057 | 0.1680 | 0.1690 | 0.0855 |
| | 0.5070 | | 0.1695 | | |
| | 0.5040 | | 0.1740 | | |
| 4 | 0.5020 | 0.5030 | 0.1750 | 0.1728 | 0.0869 |
| | 0.503 | | 0.1695 | | |

Figure 7.14 presents the stress vs. strain diagrams that were obtained from the tension tests. Table 7-2 illustrates the results obtained from each curve. From these results, an average yield strength of 56.58 ksi, was obtained, as presented in Table 7-3. Given the results of the testing tests, it is suspected that the steel used for the construction of the bridge was A572. Still, the average yield stress of 56.6 ksi was used when modeling the bridge to evaluate the impact of wind loads.

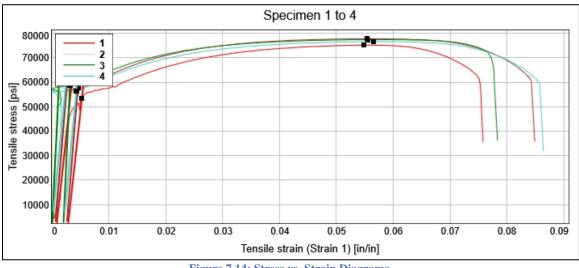


Figure 7.14: Stress vs. Strain Diagrams

Table 7-2: Tensile Tests Results

| | UTS [ksi] | Peak Load [lbf] | YTS [ksi] | Elongation after fracture [%] |
|---|--------------|--------------------|--------------|-------------------------------------|
| 1 | 75.22 | 6149 | 53.46 | 26.25 |
| 2 | 77.83 | 6537 | 57.85 | 26.02 |
| 3 | 77.47 | 6621 | 58.70 | 20.42 |
| 4 | 76.62 | 6660 | 56.30 | 24.12 |

Table 7-3: Yield Strength Average

| Curve | Yield Strength (ksi) | Average (ksi) |
|-------|-------------------------|------------------|
| 1 | 53.46 | |
| 2 | 57.85 | 56.58 |
| 3 | 58.70 | 50.50 |
| 4 | 56.30 | |

8 Bridge Analytical Model and Results

A model was developed to analyze the expected performance of pedestrian bridge PB-1137 when subjected to wind loads similar to those of Hurricane Maria. This chapter presents a description of the analytical model generated and the steps followed to that end. Afterwards, it presents the results obtained when the model was analyzed considering two cases: the bridge with no signs attached to it and the bridge with the signs it had attached when it underwent Hurricane Maria.

8.1 Analytical Model

Using the Bailey Bridge Drawings and the field inspection results, an element list table was created in Excel. With the element list table and the drawings, the total quantities of elements in the bridge were determined. A partial view of the table is presented in Table 8-1.

| | Table 8-1: Elements List Table | | | | | | |
|----------|--------------------------------|--------------------------------|-----|----------|-----------|--------------------|-------------|
| Group II | ID | Element | Qty | Sections | Total Qty | From Drawing | |
| | | Liement | | | Total Qty | Nominal Size | Length [in] |
| | LC1 | Longitudinal Channel | 1 | 21 | 21 | 4" x 2" x 1/4" | 116 |
| | LC2 | Longitudinal Channel | 1 | 21 | 21 | 4" x 2" x 1/4" | 116 |
| | LC3 | Longitudinal Channel | 1 | 21 | 21 | 4" x 2" x 1/4" | 116 |
| | LC4 | Longitudinal Channel | 1 | 21 | 21 | 4" x 2" x 1/4" | 116 |
| | VC1 | Vertical Channel | 3 | 21 | 63 | 3" x 1" x 1/8" | 57 |
| | DCP1 | Diagonal Channel Parralel | 2 | 21 | 42 | 3" x 1-1/2" x 1/8" | 41 |
| | DCP2 | Diagonal Channel Parralel | 2 | 21 | 42 | 3" x 1-1/2" x 1/8" | 41 |
| | DCP3 | Diagonal Channel Parralel | 2 | 21 | 42 | 3" x 1-1/2" x 1/8" | 41 |
| | DCP4 | Diagonal Channel Parralel | 2 | 21 | 42 | 3" x 1-1/2" x 1/8" | 41 |
| | RP1 | Reinforcing Plate | 1 | 21 | 21 | 9" x 9" | 9 |
| | RP2 | Reinforcing Plate | 2 | 21 | 42 | 9" X 4-1/2" | 4.5 |
| | TB1 | Transverse Beam | 1 | 21 | 21 | 10" x 5" x 5/16" | 108 |
| Floor | DCP5 | Diagonal Channel Perpendicular | 1 | 21 | 21 | 3" x 1-1/2" x 1/8" | 51.5 |
| | ТВС | Transverse Bracing Channel | 2 | 21 | 42 | 4" x 2" x 1/4" | 75 |
| | DBC1 | Diagonal Bracing Channel | 1 | 21 | 21 | 3" x 1-1/2" x 1/8" | 89.2 |
| | DBC2 | Diagonal Bracing Channel | 1 | 21 | 21 | 3" x 1-1/2" x 1/8" | 89.2 |

Table 8-1: Elements List Table

Using the element list table created with the drawings, another excel table was developed, identifying the location of every member using XYZ coordinates. A partial

view of this table in presented in Table 8-2. The locations identified in the table were used to develop a grid mesh in SAP2000 v21, the program adopted for the analysis.

| meters | inches | Description | 10 |
|--------|--------|---------------------------------|----|
| 0 | 0 | Truss Start | а |
| 0.05 | 2 | 1st Vertical Bar | b |
| 0.177 | 7 | Transverse Beam | с |
| 0.7375 | 29 | 1st Bracing Center | d |
| 1.019 | 40 | 1st Horizontal Frame Connection | e |
| 1.475 | 58 | 2nd Vertical Bar | f |
| 2.2125 | 87 | 2nd Bracing Center | g |
| 2.543 | 100 | 2nd Horizontal Frame Connection | h |
| 2.9 | 114 | 3rd Vertical Bar | i |
| 2.95 | 116 | Truss Finnish | j |

 Table 8-2: Elements Location Table

Description

Column Start

1st Bracing

2nd Bracing

3rd Bracing

Column Finnish

Truss Start

1st Channel

2nd Channel

Transverse Beam

Center of Truss

Transverse Beam Bracing

3rd Channel

4th Channel

inches

0

28

95

162

174

190

192

196

203

224

251

253

255

meters

0

0.71

2.41

4.11

4.41

4.82

4.87

4.97

5.147

5.6925

6.365

6.415

6.465

ID

1

2

3

4

5

6

7

8

9 10

11

12

13

| Z | | | |
|--------|--------|---------------------------|----|
| meters | inches | Description | ID |
| 0 | 0 | Transverse Beam Start | k |
| 0.45 | 18 | 1st Column | I |
| 0.55 | 22 | 1st Horizontal Bracing | m |
| 1.4119 | 56 | Half of Pedestrian Bridge | n |
| 2.2238 | 88 | 2nd Horizontal Bracing | 0 |
| 2.3738 | 93 | 2nd Column | р |
| 2.8238 | 111 | Transverse Beam Finnish | q |

To build the model, a grid mesh system was created, as presented in Figure 8.1. For this, the dimensions known of the bridge either by site inspection or obtained from drawings or from the War Department Technical Manual 5-277, were taken into consideration. The supports of the bridge extreme towers were modeled as pin supports (as per the detail shown in Figure 8.2 and Figure 8.3).

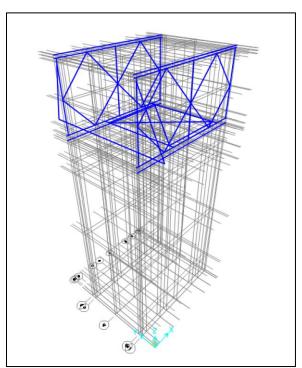


Figure 8.1: Grid Mesh Used to Develop the Analytical Model



Figure 8.2: Frame Connection of Pedestrian Bridge with Column (1 of 2)

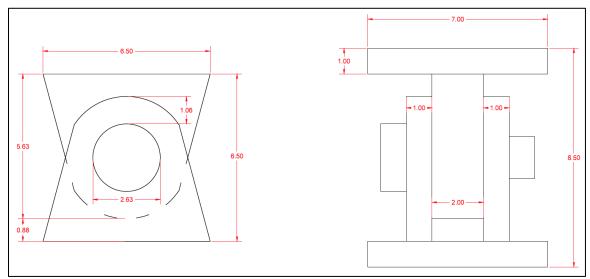


Figure 8.3: Frame Connection of Pedestrian Bridge with Column (2 of 2)

Figure 8.4 presents the simplified finite element model developed. The structural model adopted was a simplified bar element assembly, allowing 3D behavior. The model did not consider eccentricities, the effect of the bars used to support the security netting on top of the bridge, or the decking as a rigid diaphragm. All the bar elements have the shape obtained from the inspection and construction drawings. The main idea of the analysis was to propose a simple model and apply wind loads according to AASHTO specifications considering that the signs are not present, and then apply wind loads considering the presence of the signs. By comparing analysis results, it could be determined if the presence

of the signs produced a significant increase on members strength demand on the elements located in the area that experienced plastic lateral deflections, by comparing interaction equation results in both cases (without and with signs).

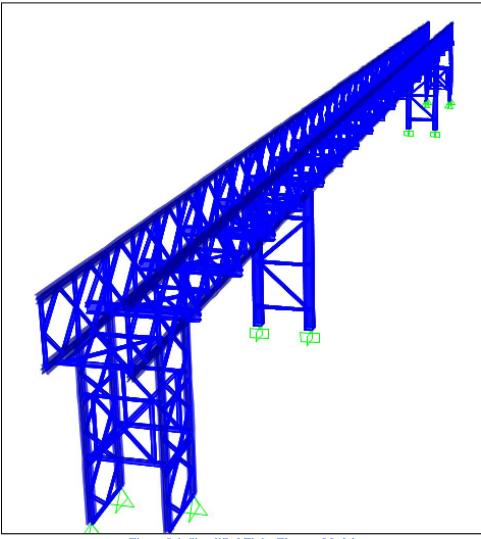


Figure 8.4: Simplified Finite Element Model

8.2 Analysis Without Signage

The first model analyzed was assuming no signage was installed in the pedestrian bridge, to determine the behavior of the bridge in its neutral state (previous to the installation of traffic signs). Regarding wind loads, the *LRFD Guide Specification for the Design of Pedestrian Bridges* (AASHTO, 2009) refers to the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals* for the calculation of wind loads. Therefore, wind loads were calculated according to the *LRFD Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals*, 1st edition (2015), with interim revisions of 2017 to 2020.

Considering a wind gust speed of 135 mph, the computations presented in Figure 8.5 summarize the computations to obtain the pressure over truss elements, which resulted in 106.4 psf.

| Loads on truss elements | |
|--|--|
| Basic wind speed (mph): $V := 135$ | This value was arbitrarily selected. |
| Height and exposure factor: $Kz := 1.0$ | AASHTO Signs Specifications suggests establishes that a Kz = 1.0 may conservatively be assumed for structures with a height of less than 33 ft. |
| Directionality factor: Kd := 1.0 | This factor accounts for "the reduced probability that the design event wind direction aligns with the most aerodynamically vulnerable direction of the structurethe owner may elect to use Kd = 1.0" |
| Gust effect factor: G := 1.14 | This is the minimum value established by the AASHTO Signs Specifications. Is also the value used in the example presented in the AASHTO Pedestrian Bridge Specifications. For a more exact value, the equations of ASCE/SEI7 have to be used. |
| Drag coefficient Cd := 2.0 | Value taken from AASHTO Sign Specfications, Table 3.8.7-1. Value is also used in the example presented in the AASHTO Pedestrian Bridge Specifications. |
| $Pz := 0.00256 \cdot Kz \cdot Kd \cdot V^2 \cdot G \cdot Cd$ | |
| laterally. For each m determine the corres to both trusses (wind | equare feet (psf) that has to be applied to the members of the truss ember, this load shall be multiplied by the projected width to ponding load in pounds per foot (lb/ft). This load should be applied ward and leeward), according to the example presented in the Bridge Specifications. |

Figure 8.5: Summary of Computations for Wind Pressure over Truss Elements

Figure 8.6 presents an image of the resulting lateral deflections due to wind action, while Figure 8.7 presents the results of the design check, showing that the interaction equation results in most of the elements in the plastic deflected area working at low stress demand.

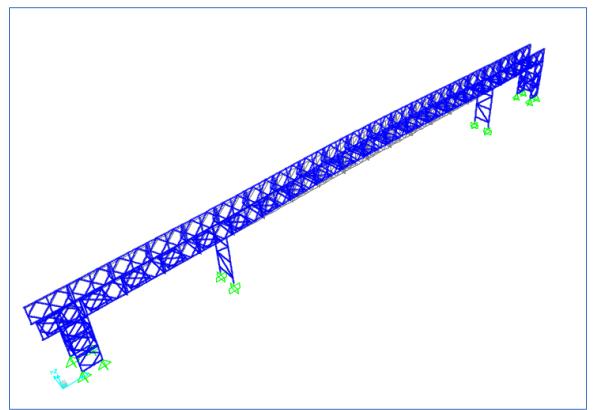


Figure 8.6: Lateral Deflections due to Wind - Without Signs

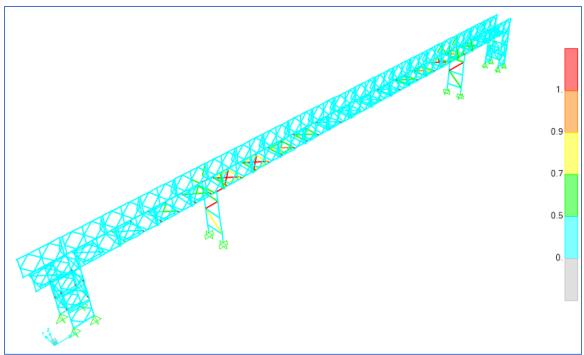


Figure 8.7: Interaction Equation (Strength Demand) Results - Without Signs

8.3 Analysis with Signage

The second model that was created was of the pedestrian bridge with the signage installed. With this model, the bridge can be analyzed to understand the implications that the signage brought to the bridge. Figure 8.8 illustrates the signage that was installed on the bridge at the time Hurricane Maria made landfall in Puerto Rico. Figure 8.9 through Figure 8.11 illustrate the structure that held the signage in place. From Figure 8.11 it was determined that the structure that held the signage in place had 5 vertical beams, and from Figure 8.10 it is evident that the beams were attached to the truss vertical channels with U-bolts in two points.



Figure 8.8: Signage Installed at the Pedestrian Bridge



Figure 8.9: Signage Support Structure (1 of 3)



Figure 8.10: Signage Support Structure (2 of 3)



Figure 8.11: Signage Support Structure (3 of 3)

Since the transportation signs had been removed previous to the moment of inspection, the dimensions of the signs were estimated from previous photos as 35-ft wide ad 10-ft in height. It was assumed that the distribution of loads to the supporting beams was by tributary areas, and that each beam, in turn, distributed half the load to each support. To evaluate an overall response, instead of a local response, these support loads were applied directly to the top and bottom chord in the connection of the vertical elements to the chord.

Figure 8.12 presents an image of the resulting lateral deflections due to wind action. It can be appreciated that the general behavior observed on the bridge, with the plastic deformation, is captured.

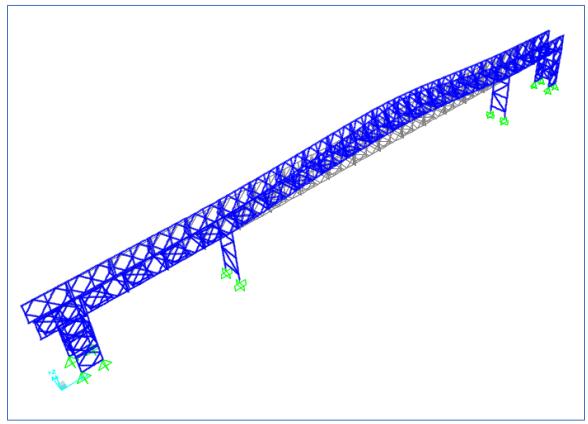


Figure 8.12: Lateral Deflections due to Wind - With Signs Included

Figure 8.13 displays the results of the design check, showing that the interaction equation results in most of the elements in the plastic deflected area working with a much higher stress demand that the previous analysis. This leads to the conclusion that the installation of the signs had an important role in the lateral inelastic deformations.

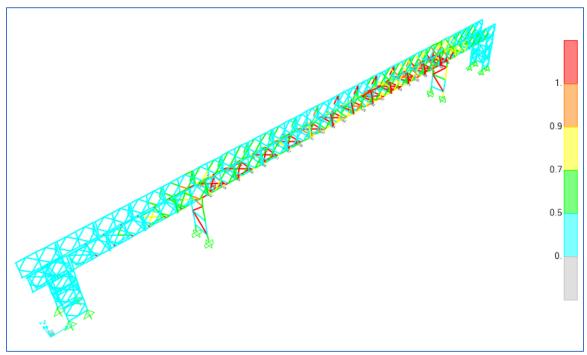


Figure 8.13: Interaction Equation (Strength Demand) Results - With Signs Included

8.4 Results analysis

The simplified FE analysis proposed demonstrated that large signs may impose significant overstress in bridge elements, and that the signs should have played a major role in the inelastic lateral deflections that the bridge experienced due to Hurricane Maria.

In addition to the presence of the signs, the resulting inelastic lateral deflections that actually occurred in the bridge may have been aggravated by: (a) the presence of many corroded elements and connections, (b) the detail of hinge support (explained below), and (c) the detail of sign connection to the truss (also explained below). Figure 8.14 displays that the hinge support plate appeared to have experienced lateral deflection, resulting in twisting of the upper beam. This situation may be probably due to eccentricity between the lateral load applied by chords on top of the beam and the hinge location. Figure 8.15 presents other view of this situation. This condition requires further study to assess a proper design and may be an extension of current project.



Figure 8.14: Eccentricity of Pin-Plate and Lateral Load



Figure 8.15: Twisted Pin-Plate and Supporting Beam

Due to their layout (see Figure 8.16), sign supports applied significant load to the top chord (with lateral bracing trough transverse beams and diagonals) that may be responsible of the resulting twisting of the truss panel displayed in Figure 8.17.



Figure 8.16: Location of the Signs Support



Figure 8.17: Twist of the Truss Panel

9 Conclusions and Recommendation

The main conclusions and recommendations of the project are the following:

- The visual inspection revealed advanced corrosion in almost all components of the bridge, that presented loss of section, loose connections, and some missing elements.
- The condition assessment based on the visual inspection resulted in a severe condition for all the components evaluated.
 - The bridge would have been probably dismantled despite the inelastic lateral deflections.
 - It was also a significantly old bridge (1968), 49 years old at the time of Hurricane Maria, probably near its expected service live.
- The simplified FE analysis performed demonstrated that large signs may impose significant overstress in bridge elements. This leads to the conclusion that the installation of the signs had an important role in the lateral inelastic deformations experienced by the bridge during Hurricane Maria.
- In addition to the presence of the transportation signs, the resulting inelastic lateral deflections that actually occurred in the bridge may have been aggravated by:
 - \circ The presence of corroded elements and connections.
 - The details of truss hinge support.
 - The details of sign connection to the bridge elements.
- Placing signs on existing bridges should be avoided without the proper:
 - Analysis to determine if reinforcement of the structure is required.

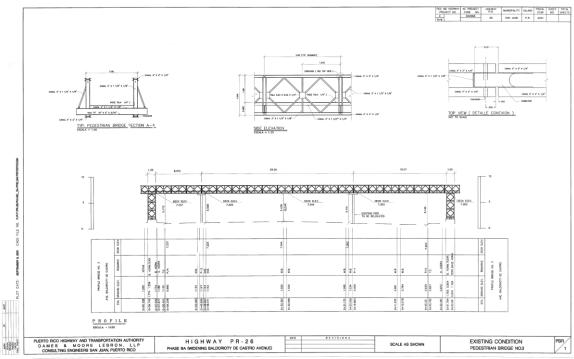
• Design (and maintenance) of the sign support.

The analysis and design should be performed according to current codes (treated as a retrofit), to assure resilience under current design loads and state of the practice.

References

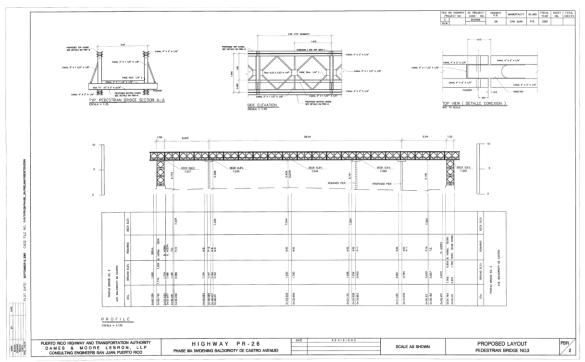
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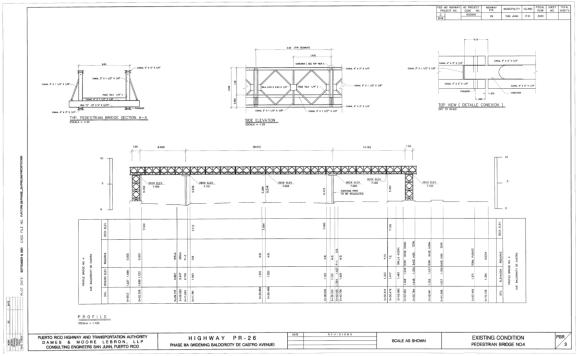


Appendix A – Bridge Drawings 2001











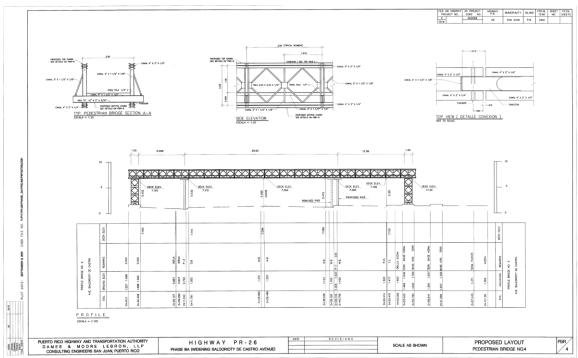


Figure A - 4: Bridge Drawings 2001 - Sheet 4

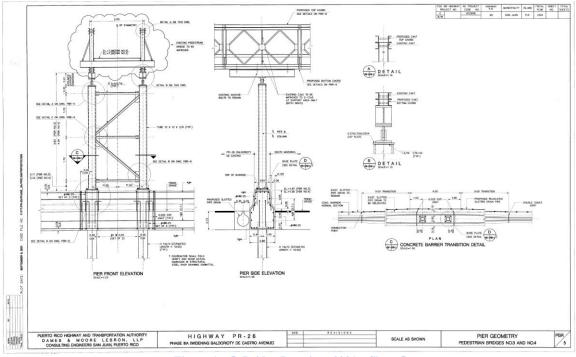


Figure A - 5: Bridge Drawings 2001 – Sheet 5

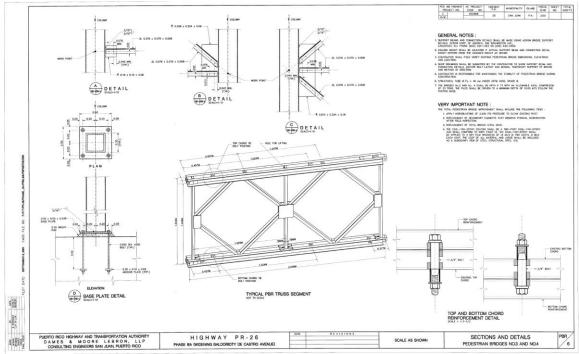


Figure A - 6: Bridge Drawings 2001 – Sheet 6

Appendix B - Collection of images of the bridge



Figure B - 1: East side panels from right to left 1, 2 & 3



Figure B - 2: East side panels from right to left 2, 3 & 4



Figure B - 3: East side panels from right to left 3, 4 & 5



Figure B - 4: East side panels from right to left 3, 4 & 5



Figure B - 5: East side panels from right to left 6, 7 & 8



Figure B - 6: East side panels from right to left 8, 9 & 10



Figure B - 7: East side panels from right to left 9, 10 & 11



Figure B - 8: East side panels from right to left 10, 11 & 12



Figure B - 9: East side panels from right to left 10, 11, 12 & 13



Figure B - 10: East side panels from right to left 11, 12, 13 & 14



Figure B - 11: East side panels from right to left 13, 14 & 15



Figure B - 12: East side panels from right to left 16, 17, 18 & 19



Figure B - 13: East side panels from right to left 17, 18, 19 & 20



Figure B - 14: West side panels from left to right 1, 2, 3 & 4



Figure B - 15: West side panels from left to right 2, 3, 4 & 5



Figure B - 16: West side panels from left to right 4, 5, 6 & 7



Figure B - 17: West side panels from left to right 6, 7, 8 & 9



Figure B - 18: West side panels from left to right 8, 9, 10 & 11



Figure B - 19: West side panels from left to right 10, 11, 12 & 13



Figure B - 20: West side panels from left to right 11, 12, 13 & 14



Figure B - 21: West side panels from left to right 13, 14, 15 & 16



Figure B - 22: West side panels from left to right 14, 15, 16, 17 & 18



Figure B - 23: West side panels from left to right 17, 18, 19 & 20



Figure B - 24: West side panels from left to right 17, 18, 19 & 20

Appendix C – Letter Requesting Bridge Samples



Escuela de Ingeniería, Agrimensura y Ciencias Geoespaciales 377 Ponce de León Ave. Hato Rey, PR 00918 (787) 622-8000 www.pupr.edu

22 de abril de 2019

A quien pueda interesar:

La Universidad Politécnica de Puerto Rico recinto de San Juan se encuentra realizando un proyecto de investigación sobre el efecto del huracán María en la infraestructura de trasportación. Se tomó como caso de estudio con el puente peatonal que se encontraba en el Km 4.1 del Expreso Román Baldorioty de Castro, San Juan, Puerto Rico. El mismo fue removido recientemente ya que representaba un peligro para los peatones y el expreso Román Baldorioty de Castro.

El caso de estudio surge luego del huracán María ya que se observó que el puente había sufrido deflexiones laterales permanentes. Se entiende que la deflexión es resultado de los fuertes vientos producidos por el huracán sobre un rotulo que se encuentra en el puente. El propósito general del caso de estudio es obtener los datos sobre la geometría y materiales del puente, para luego desarrollar modelos avanzados del mismo y poder obtener las velocidades del viento del Huracán María que provocaron las deflexiones, y corroborar si la presencia de los letreros fue determinante en la respuesta o no.

Como parte del caso del estudio nos interesa obtener piezas del puente para poder determinar, mediante pruebas de laboratorio, las propiedades mecánicas del material que se utilizó para construir el puente en la década del 60. Por este medio le solicitamos si es posible pasar por las facilidades de donde se encuentra el puente para remover algunas piezas las cuales nos ayudarán con el caso de estudio. Muchas gracias de ante mano por su colaboración; la misma será muy valiosa para PR y el entendimiento de los efectos del huracán María en la isla.

Cordialmente,

Gustavo E. Pacheco-Crosetti, PhD, PE Director, Transportation Infrastructure Research Center - TIRC Full Professor, Department of Civil Engineering, Environmental Engineering and Land Surveying Polytechnic University of Puerto Rico

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