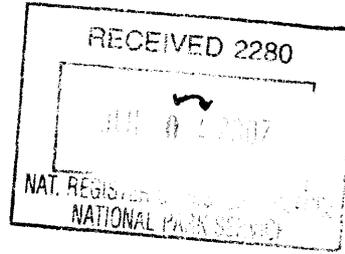


**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Registration Form**



1. Name of Property

historic name Paso del Indio Site

other names/site number VB-4

2. Location

street & number N/A not for publication

city or town Vega Baja vicinity

state Puerto Rico code PR county Vega Baja code 145 zip code 00693

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register Criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)

Aida Belen Rivera Ruiz
Signature of certifying official/Title

3 July 2007
Date

Puerto Rico State Historic Preservation Office
State or Federal agency or Tribal government

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

Signature of certifying official/Title

Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby certify that this property is:

- entered in the National Register
 See continuation sheet.
- determined eligible for the National Register
 See continuation sheet.
- determined not eligible for the National Register
- removed from the National Register
- other (explain):

for Erika K. Martin Sabert 7/25/07
Signature of the Keeper Date of Action

5. Classification

Ownership of Property

- private
- public-local
- public-State
- public-Federal

Category of Property

- building(s)
- district
- site
- structure
- object

Number of Resources within Property

(Do not include previously listed resources in the count.)

Contributing

0
1
0
0
0

Noncontributing

0	buildings
0	sites
0	structures
0	objects
0	Total

Name of related multiple property listing

N/A

Number of contributing resources previously listed in the National Register

N/A

6. Function or Use

Historic Functions

Domestic _____

Current Functions

Landscape _____

7. Description

Architectural Classification

N/A _____

Materials

foundation _____
walls _____
roof _____
other _____

Narrative Description

(See Continuation Sheets)

8. Statement of Significance

Applicable National Register Criteria

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

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

Criteria Considerations

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

Property is:

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

Areas of Significance

(See Continuation Sheets)

Archaeology – Prehistoric

Paso del Indio Site
Vega Baja, Puerto Rico

Period of Significance

Archaic (2500 BC - 200 BC)

Saladoid (AD 400 - 600)

Early Ostionoid (Pre-Taino) (AD 600 - 1200)

Late Ostionoid (Taino) (AD 1200 -1500)

Significant Dates

N/A

Significant Person

N/A

Cultural Affiliation

Archaic, Saladoid, Early Ostionoid (Pre – Taino), Late Ostionoid (Taino)

Architect/Builder

N/A

Narrative Statement of Significance

(See Continuation Sheets)

9. Major Bibliographical References

Bibliography

(See continuation sheets)

Previous documentation on file (NPS):

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

Primary Location of Additional Data:

- State Historic Preservation Office
- Other State agency – Puerto Rico Highway and Transportation Authority (PRHTA)
- Federal agency
- Local government
- University
- Other

Name of repository: _____

10. Geographical Data

Acreage of Property 8.524

UTM References - See continuation sheets and USGS Map.

Zone	Easting	Northing
19	776567.07	2039861.86

Verbal Boundary Description

The site is bounded on the East by the Río Indio, the West by steep limestone hills, the limits to the North extend approximately 100 meters north of the Paso del Indio Bridge 9 (along PR22).

Paso del Indio Site
 Vega Baja, Puerto Rico

Boundary Justification

The boundary of the nominated property (Figure 2, Section 10) corresponds to the site limits as established by the archaeological investigations carried within 1993-1995. It must be noted that the Paso del Indio site has not been fully excavated and that the boundary delimitations are based on borings (split-spoon cores) conducted to explore horizontal site extent; the excavation of units pertains only to areas to be directly impacted by the bridge's footings (as seen in Figure 3, Section 10).

11. Form Prepared By

name/title Mark R. Barnes, Ph. D. Senior Archeologist

organization Cultural Resources Division, NPS date December 15, 2005 (Second Draft)
February 2006 (Final)

street & number 100 Alabama Street, SW telephone 407-562-3173

city or town Atlanta state Georgia zip code 30303

The present nomination was derived in part from a draft National Register nomination developed by:

Carlos Solis Senior Archaeologist LAW Engineering & Environmental Services 112 Townpark Drive Kennesaw, Georgia 30144-5599	Mark R. Barnes, Ph.D. Senior Archaeologist Cultural Resources Division National Park Service, SERO 100 Alabama Street, NW Atlanta, Georgia 30303
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Technical Assistance in the preparation of the present National Register nomination was provided by:

Jeffrey L. Walker, Ph.D. Archeologist Caribbean National Forest HC1, Box 13490 Río Grande, Puerto Rico 00745 Telephone: (787) 888-5660	Miguel Bonini and Yasha Rodríguez, Ph.D. State Archeologist/Archeologist State Historic Preservation Office P.O. Box 9066581 San Juan, Puerto Rico 00906-6581 (787) 721-3737
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Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items

(Check with the SHPO or FPO for any additional items)

Property Owner

name Puerto Rico Department of Transportation and Public Woks

street & number PO Box 41269 Minillas Station telephone 787-725-1620

city or town San Juan state PR zip code 00940

name Puerto Rico Land Authority

street & number PO Box 9745 telephone 787-722-3934

city or town San Juan state PR zip code 00908-9745

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 7 Page 1

Paso del Indio Site
Vega Baja, Puerto Rico

NARRATIVE DESCRIPTION

Introduction: The Paso del Indio archaeological site is located on the west bank of the Río Indio, in the Río Indio River Valley, near the geographical intersection of the Coastal Plain and the Cordillera Central of Puerto Rico (figure 1). The site, located along the north-central coast of the island is approximately 4 miles from the Atlantic Ocean and approximately 1 mile north of the confluence of the Río Cibuco and Río Indio. The Paso del Indio site is the largest and deepest stratified (approximately 5 m in depth) multi-component prehistoric occupation site discovered to date in Puerto Rico, and possibly all Caribbean islands. Archaeological investigations have identified more than 30 discrete cultural stratigraphic layers, separated by episodes of flood deposited sediment layers. More than 40 radiocarbon dates demonstrate the site was occupied from the Archaic Period (2580 BC) to the early Historic Period (AD 1655). Analysis has determined the most intensive occupation of the site occurred during the Elenan Ostionoid cultural period (AD 900-1200) (Walker 2005:55).

Environmental Setting: The Paso del Indio site lies on the flood plain of the west bank of the Río Indio and is bordered to the east and west by the steep slopes of karst haystack hills (*mogotes*) that make up the valley's walls at the site location. The area of the lower Río Indio, where Paso del Indio is located

... is hemmed in on either side by steep limestone hills known as *mogotes*, rising 50 to 100 m above the river valley, and is deeply incised, narrow, and slow meandering with sandbars and steep-sided banks over 5 m high. Up river, the valley is narrow and tightly restricted by limestone topography, and the river is swifter-moving with gravel bars and a broader channel. Just 4 km upstream from the site, the Río Indio cuts through formations with volcanic rocks, which can be found in the river gravels. The river tends to rise rapidly after heavy rains, and on several occasions it jumped its banks and flooded the excavation units nearest its course. The sediments encountered during the excavation testify that this pattern of flooding was the norm throughout much of the Paso del Indio site occupation [Walker 2005:56].

Prior to excavation, in the 1990s, the area could be described as abandoned pastureland. Before that the area was planted in sugar cane for much of the twentieth century. This farming activity produced a plow zone disturbance layer from the surface to a depth of about 30 to 40 cm, but did not affect the buried prehistoric deposits. It is believed the "original vegetation on the flood plain was probably dense forest, which presumably was cleared in prehistoric times for planting crops and building dwellings" (Walker 2005:56).

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 7 Page 2

Paso del Indio Site
Vega Baja, Puerto Rico

The location of the Paso del Indio site on the flood plain of the Río Indio meant that it was subject to intense flood episodes that resulted in significant deposition events. These flooding episodes would have renewed the fertility of the soil making the area desirable for planting food crops, and the attendant deposition of gravels and rocks from the upper reaches of the Río Indio on the nearby sandbars would have provided the occupants with a ready source of raw material for stone tool making. At the same time, the Atlantic Ocean was only a short canoe trip from the site, where maritime resources could also be obtained (Walker 2005:56). Repeated flooding episodes and deposition of sediment, in prehistory, served to encapsulate approximately 30 discrete Archaic, Saladoid, Early Ostionoid (Pre-Taino), and Late Ostionoid (Taino) prehistoric occupations at the site, creating the largest and most deeply stratified site yet discovered in Puerto Rico.

Previous Archaeological Investigations: The Paso del Indio site was first recorded in 1979, on the basis of scattered surface remains and given the designation VB-4, meaning this was the fourth site identified in the municipality of Vega Baja, however, a determination of significance was not made at that time by the Puerto Rico State Historic Preservation Office. The buried nature of this site may have accounted for it not being identified by Jesus Figueroa Lugo (1988) "during his Phase IA survey of the route for PR 22, a four-lane toll road between San Juan and Arecibo" (Walker 2005:56-57).

Where the new PR 22 toll road was to cross the Río Indio Valley, the Puerto Rico Highway and Transportation Authority (PRHTA) proposed the construction of a series of massive concrete pilasters to support an elevated highway. The footings for each of these pilasters would require a series of excavations some 20 meters wide by 45 meters in length, and several meters in depth. In early 1993, during excavation for one of the highway support footings, Carlos Ayes Suárez alerted PRHTA that this work had impacted a large buried archaeological site.

The Puerto Rico Highway and Transportation Authority (PRHTA) responded quickly and in May of 1993 initiated Phase II site evaluation using soil borings to determine the horizontal and vertical limits of the site, followed by limited Phase III data recovery excavations and monitoring, all directed by Osvaldo García Goyco and Adalberto Maurás Casillas (1993a) [Walker 2005:57].

Following consultation between the Puerto Rico Highway and Transportation Authority (PRHTA), the Puerto Rico State Historic Preservation Office (PRSHPO), and the US Army Corps of Engineers (USACE), a Memorandum of Agreement (MOA) was formulated and signed by the PRSHPO and USACE as signatory parties, in mid-1994. PRHTA and the Consejo para la Protección del Patrimonio Arqueológico Terrestre de Puerto Rico signed as Concurring Parties; the Advisory Council on Historic Preservation signed as accepting the MOA to mitigate adverse impact to the areas to be directly impacted by construction activities through a plan for data recovery.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 7 Page 3

Paso del Indio Site
Vega Baja, Puerto Rico

During the rest of 1993, while this consultation was being undertaken, an intensive deep testing project for the Río Indio Valley was being conducted to determine the physical parameters of the Paso del Indio site (García Goyco & Maurás Casillas 1993b).

In total, 450 soil borings were drilled at 10-m intervals, most of them to between 3 to 4 m deep. This proved to be essential in developing the data recovery plan for the site. A standard commercial soil-coring rig was used. Split spoon cores were extracted, analyzed, and recorded onsite. These soil logs were used to plot the absence, presence, and type of cultural material, enabling the horizontal extent of the site to be determined. García and Maurás were able to plot the depths and presumed cultural affiliations of three different components at the site. They also dug three rectangular units (2 by 12 m, 2 by 7 m, and 2 by 3 m, all less than 3 m deep) in the vicinities of Pilasters 5, 6, and 7 ...[Walker 2005:57].

From this soil boring work, the archeologists were able to identify three buried cultural components, dating from the prehistoric ceramic periods.

The deepest material they located with the soil borings and initial excavations were classified as "Igneri" [or Saladoid]; in horizontal area, this component measured about 225 by 125 meters. Above this was the "Pre-Taino" [or Early Ostionoid] component, far larger, with an estimated area of 450 by 200 meters. The uppermost "Taino" [or Late Ostionoid] component had the same approximate size as the pre-Taino. Spatially, the ceramic-age occupations did not shift significantly over time which is remarkable considering that the village was probably abandoned on several occasions during the millennia under consideration [Walker 2005:57-58].

At this time, however, the soil borings were not deep enough to locate the much earlier pre-ceramic, or Archaic period buried occupation strata at the Paso del Indio site (Walker 2005:57). The soil boring project and excavations in the area of Pilaster 7 demonstrated that the prehistory occupation of the Río Indio Valley was restricted to the west side of the Río Indio, and that the footings for only four Pilasters (Nos. 5, 6, 7, and 8) would effect the site. The data recovery plan was therefore developed to target the area of the footings for these four pilasters (fig. 1).

The data recovery plan having been established from the previous work at the Paso del Indio site, excavation then proceeded in the following manner from 1993 to 1995.

The main excavation comprised four bridge footings: Pilasters 5, 6, 7, and 8. [The archaeological excavations were purposely designed to cover precisely the area these bridge footings would impact.] The soil boring showed that Pilaster 5 contained little archaeological material, so it was excavated by machine and monitored during excavation. Earlier in 1993 the construction excavation of Pilasters 3 and 4 to the west were also monitored. The monitoring confirmed that Pilasters 3, 4, and 5, did not contain substantial

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 7 Page 4

Paso del Indio Site
Vega Baja, Puerto Rico

archaeological deposits, indicating that these areas were marginal to all prehistoric occupation of the site.

Pilasters 6 and 7 showed the highest densities of cultural material in the soli borings, and these were identified for a combination of hand excavation and controlled machine stripping of noncultural layers. The uppermost layers of these excavation blocks were stripped mechanically; when numerous features became apparent excavations continued by hand. All 10 units in the northern Pilaster 6, an approximately 18 by 10 meter area, were excavated by hand. In southern Pilaster 6, part was impacted by prior construction activity part was excavated by hand, and part by machine.

The Pilaster 7 excavation block was a roughly 40 by 3 meter strip along the western side of the construction-impact area. The western side of the construction excavation was the eastern side of the archaeological excavation block. This entire exposed eastern profile was drawn "in reverse," before the archaeological excavation started, and this exposed profile was used to guide the stratigraphic excavations ...

Pilaster 8 with its lower artifact density was slated for monitored controlled mechanical excavation. This was implemented, but again, the presence of many archaeological features that were not discernable in the soil boring resulted in considerable hand excavation. The eastern side of Pilaster 8 turned out to be recent river deposits that sloped at about a 45 degree angle into the riverbed. The over 40-meter-long western side of the block, however, provided the oldest dates and some of the most interesting stratigraphy in the entire site. During excavation of Pilaster 8, several deep aceramic features, which had not been detected in previous stages of testing and excavation, were discovered. Some of these deeply buried deposits were thought to be Archaic in age, which has since been confirmed by radiocarbon dates [Walker 2005:60-61].

More than thirty soil strata recorded, consisting of sterile alluvial deposits alternating with occupational surfaces with associated features and artifacts. The Period II, III, and IV Ceramic Age components contained numerous burials. The provenance for most of the burials was attributed to the Ostionoid (Period III) from which over 100 burials were exhumed. A number of these internments included grave furniture such as, ceramic, lithic, and shell artifacts, selected skeletal remains (crania) of other individuals, and secondary internments. House patterns from all of the ceramic age components were recorded as well as stoned paved areas, some of which may represent the remnants of village open plazas and possibly ball court(s) (*bateyes*).

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 7 Page 5

Paso del Indio Site
Vega Baja, Puerto Rico

The archaeological investigations demonstrate that approximately 30 well preserved, stratified prehistoric village and camps that span all major culture periods known for the Island of Puerto Rico, are found at this site. The culture periods represented and the occupation types are:

1. Archaic (Period I) - Campsite (1000 BC - 200 BC)
2. Saladoid (Period II) - Farmstead (AD 400-600)
3. Early Ostionoid (Pre-Taino) (Period III) - Village (AD 600-1200)
4. Late Ostionoid (Taino) (Period IV) - Village (AD 1200-1500)

In addition to the prehistoric components of the site noted above, artifactual evidence for a disturbed historic (Spanish colonial period) component, dating to the late nineteenth and early twentieth centuries was also found. However, the cultural material for this component was found to be restricted to plow zone contexts, and therefore, is not considered significant.

Analysis of the excavations and artifacts from the Paso del Indio site is more than half completed. Information reported from this analysis is discussed in the significance section of this nomination.

Site Integrity: The fluvial processes previously described have helped preserve intact approximately 30 prehistoric living surfaces of several former village and camp sites, some of which are deeply buried, up to five meters in depth. The archaeological investigations conducted as mitigation for the highway project have demonstrated the Paso del Indio site contains evidence of Archaic Age (Period I) and all the Ceramic Age (Periods II, III, and IV) prehistoric horizons currently known for Puerto Rico. In particular, the Ceramic age stratified layers contain numerous intact features, such as pits, postmolds (some systematically aligned), burials, artifact caches, and stone paved areas. The integrity of the stratified buried deposits at this site offers an unparalleled archaeological context in Puerto Rican archeology.

Archaeological investigations and highway construction are believed to have removed approximately 5% of the site, based on a coring project conducted prior to data recovery, to determine the boundaries of the buried components of the site. A one meter thick protective layer of crushed calcareous rock and soil was laid on top of the site's ground surface, after the excavations were completed, to prevent looting and other activities, such as erosion, that could impact the site. This, it was hoped, will aid to preserve the remainder of the site for future research.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 6

Paso del Indio Site
Vega Baja, Puerto Rico

NARRATIVE STATEMENT OF SIGNIFICANCE

State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.

Summary Statement of Significance: The Paso del Indio site is significant for understanding the archaeology of the Greater and Lesser Antilles because it contains approximately 30 well preserved, discrete archaeological strata representing each of the four major prehistoric cultural periods known for these regions. To date, analysis of the recovered cultural material has provided information on the following topics: geomorphology, prehistoric settlement patterns, human remains, lithic artifacts, archaeobotanical and faunal remains, and dating.

The Paso del Indio site is considered significant under National Register Criterion d, as it has yielded and is likely to yield information of scientific importance for a number of topics pertinent to the prehistory of the Island of Puerto Rico specifically, and the Caribbean in general.

Overview of Cultural Components at the Paso del Indio site

Period I. Archaic Component (2500 BC): The Archaic component at Paso del Indio was identified during monitoring activities for the excavation of bridge support footings for Pilaster 8. At about 5.5 m below the surface, an aceramic deposit was unearthed. It consisted of a thermally altered area interpreted to represent the remains of hearths, which contained rock and shell artifacts. An edge grinder, a multi-platform chert core and a fine-grained basalt precursor were associated with this cultural component. The edge grinder is particularly important as it has been documented in Puerto Rico only in the Coroso Archaic Complex (Alegría et al 1955; Rouse and Alegría 1990) and in the earliest manifestation of the Hacienda Grande component (Walker 1990). Therefore, the presence of this type of implement at this site serves as an indicator either of an isolated Archaic component or a frontier between the Late Archaic and the earliest ceramic bearers that occupied the area (Rodríguez Ramos 2005:4-10).

A carbon sample extracted from this component was submitted for C14 analysis which produced a radiometric determination of 2580 BC. This date is considerably older than was generally documented for the Archaic in Puerto Rico (Rouse 1992). Recent archaeological work on the north and south coasts of Puerto Rico has provided dates that push the initial peopling of Puerto Rico back by at least 2000 years earlier than previously suspected. One of these sites is Angostura (Ayes 1988), located along the Manatí River, which lies to the west of the Paso del Indio site. From Angostura,

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 7

Paso del Indio Site
Vega Baja, Puerto Rico

dates as old as 5960 BC have been obtained making it the oldest pre-ceramic context in Puerto Rico and the Northern Lesser Antilles. The C14 dates of 4840 and 3985 BP obtained by archaeologist Miguel Rodríguez for the Maruca site, in Ponce, Puerto Rico push back the previously accepted dates for the Archaic period of Puerto Rico. The apparent antiquity of the Archaic component at the Paso del Indio site makes it significant in understanding of the initial peopling of this island and the Antilles.

Period II. Saladoid Component (AD 400-600): The Saladoid component at the Paso del Indio site was documented to extend over an area measuring approximately 100m by 250m (Law Environmental-Caribe 1998). The archaeological evidence indicates that this occupation consisted of a permanent settlement as evidenced by the presence of domestic structures, hearths, burials and other features. The ceramic assemblage indicates that the site was established sometime during the late Saladoid.

Recent archaeological research in various parts of the island of Puerto Rico (Solís Magaña and Rodríguez 1997, Law Environmental-Caribe 1998) has produced evidence that the settlement of the interior mountainous region began during the latter parts of Period II. The larger Saladoid sites along coastal environments continued to be occupied; however, smaller settlements began to be established near the intersection of the mountains and the Coastal Plains (Piedmont). Available data indicates that this change in preferred settlement location was also accompanied by some changes in subsistence strategies. Indeed, current information indicates that the subsistence strategies were directed towards the exploitation of resources in the Piedmont ecotone, but still complemented with marine resources. The new settlements were generally small, but of a permanent character as evidenced by the presence of domestic structures, burials, midden deposits and activity areas. García Goyco (Law Environmental-Caribe 1998) suggests that the colonization of the interior may have, in part, been engendered by the depletion of agriculturally suitable soils along the coastal areas. In contrast, the interior valleys provided abundant suitable soils. Eventually, these settlements are considered to have developed into the basic unit of production within the larger Saladoid economic and social organization.

The initial Saladoid settlement of the Paso del Indio site is considered to have occurred during Late Period II as evidenced by the presence of Cuevas Style ceramics. The settlers may have originated from the coastal village of Maisabel, a prehistoric site which is located approximately 7 kilometers downstream from the Paso del Indio site. Postmold patterns indicate that the inhabitants lived in large communal houses analogous to the *maloca* from northeastern South America. Peter Siegel (1992) recorded similar structures for the Maisabel site.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 8

Paso del Indio Site
Vega Baja, Puerto Rico

The Saladoid occupation at the Paso del Indio site was found to contain the remains of domestic structures, hearths, midden areas, possible craft activity areas, and other features. The artifact assemblage from this component primarily included ceramic, lithic, and shell artifacts. The ceramics from this component have been assigned to the Cuevas Style of the Saladoid Ceramic Series. The lithic artifacts include a wide range of materials representing the reduction sequences of tool manufacture, formal tool types, and utilized implements. Abundant griddle (*burenes*) fragments were recovered indicating the inhabitant's diet included bread made from *casabe* (yuca). The Saladoid component has also yielded evidence for fishing, small game hunting and horticulture. Human burials were also identified from this component.

Period III. Early Ostionoid (Pre-Taino) Component (AD 600-1200) The Early Ostionoid (Pre-Taino) component at the site of Paso del Indio is the largest in extent and appears to represent the longest occupation. The site area during this period is estimated to have measured 200 by 450 meters.

The Early Ostionoid (Pre-Taino) component consists of a village size settlement which was occupied from approximately AD 600 to 1200. The repeated flood episodes during the history of the Early Ostionoid (Pre-Taino) occupation appears to have caused the periodic, temporary abandonment of the village followed by its resettlement. The soil deposition events associated with the flood episodes resulted in the burial of a number of the occupational surfaces, providing a unique site condition which enhances its research potential. The Early Ostionoid (Pre-Taino) component at Paso del Indio contains archaeological contexts associated with domestic activities, craft specialization, public spaces, and human burials.

In comparison to the Saladoid and Late Ostionoid (Taino) cultures, less research has been afforded to the Early Ostionoid (pre-Taino) manifestations in Puerto Rico and the Greater Antilles. The Paso del Indio site provides an invaluable resource to study the development of the Early Ostionoid (Pre-Taino) culture whose origin is still debatable. Currently, scholars are attempting to determine whether the transition from the Saladoid to the Late Ostionoid is the result of a cultural evolution within Puerto Rico, heralding the emergence of chiefly polities, or the result of an intrusion of new peoples and cultures

Analysis has provided evidence for a significant shift of residence patterns during the course of Period III. In contrast to the large communal houses which appear to have predominated during the Saladoid occupation, the Early Ostionoid (Pre-Taino) component provides evidence for the habitation of smaller structures (*bohíos*) characteristic of those for nuclear households. This trend continues into the Late Ostionoid (Taíno) Period.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 9

Paso del Indio Site
Vega Baja, Puerto Rico

Preliminary analysis of the faunal remains indicates that the Period III inhabitants intensified the use of terrestrial and riverine resources, but still complimented their diet with marine resources. Horticultural pursuits are likely to have been intensified. In addition to the cultivation of cassava, house gardens appear to have provided a host of fruits, medicinal and other plant resources as evidenced by recently acquired macro-botanical data from the nearby farmstead of La Trocha which is located approximately 200 meters downstream from Paso del Indio (Solís Magaña and Rodríguez 1997).

The paleodemographic data of the Río Indio Valley for Period III indicates the settlement pattern also included lower order settlements, possibly hamlets, farmsteads, or field shacks (J. Walker, personal communication, 2005). These data also indicate that the dispersed settlements continued to be occupied during the subsequent Late Ostionoid (Taíno) Period (Solís Magaña and Rodríguez 1999).

Over one hundred of the one hundred forty-three human burials recovered from the Paso del Indio site were assigned an Early Ostionoid (Pre-Taino) provenance. Many of the interments contained a wide range of grave offerings, including primary male burials "holding" crania in their hands.

Period IV. Late Ostionoid (Taino) Component (AD 1200-1500) The last prehistoric occupation at the Paso del Indio site was found to have been a village settlement attributable to the Late Ostionoid (Taino) culture on the basis of ceramic styles, religious icons, presence of a ball court or plaza, and paraphernalia attributed to the ball game (see Walker article and spell out specific artifacts). Because the Late Ostionoid (Taíno) component was somewhat offset from the principal area of construction, only a portion of this component was investigated. The archaeological investigations of this component provided evidence of extensive archaeological deposits such as middens. Features and burials remain in a good state of preservation.

Discussion of Analyzed Material Culture

To date, the analysis of the cultural material compiled from the archaeological excavations at Paso del Indio has been completed, including the work of several specialists. The following is a preliminary synopsis of cultural material and site formation process data.

Geomorphology - During the period of the archaeological investigations (1993 to 1995) Jeffrey Clark undertook a detailed study of the stratigraphic profiles from the investigations as a means of guiding investigations and developing a relative sequence of chronology for the site for future analysis. This

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 10

Paso del Indio Site
Vega Baja, Puerto Rico

work, beginning in 1993, consisted of the study of sediments from soil columns, provided baseline data for all subsequent excavations at the site, and first identified soil deposition episodes in the archaeological record (Clark et al. 2003). At the same time, that Clark was able to identify a series of soil deposition episodes at Paso del Indio, he was able to also identify episodes of erosion caused by the same events, which allowed researchers to "cross-reference the stratigraphic profile drawings of the three main excavation blocks" even when "the numbered soil layers did not necessarily coincide precisely from one block to next" to produce a stratigraphic interpretation for the various parts of the site (Walker 2005:65).

According to Jeff Walker, final analysis of the stratigraphic record at Paso del Indio has the possibility to examine the effects of natural disasters on prehistoric cultures.

Clark confirms that periodic floods constituted the major depositional process at the site, and that the frequency and intensity of floods varied during different periods of occupation. He states that the flooding probably did not endanger lives, but he does feel that during those periods when flooding was more frequent it probably caused substantial damage to residences, loss of property, severe disruption of village life, and interruptions to subsistence activities such as agriculture. From the evidence, it is not possible to tell whether these floods were the result of very intense rains, or associated with hurricanes. However, at Paso del Indio we have multiple opportunities to analyze the effects that catastrophic floods had on prehistoric village life [2005:65].

House Patterns - Post Molds - Literally hundreds of post molds were located during the excavation phase of the Paso del Indio project. Their locations, according to their positions, within the different stratigraphic layers are currently being entered into a GIS database. For those stratigraphic layers presently completed, it is possible to distinguish several prehistoric dwellings and smaller structures. It is anticipated that when this project database is completed it will allow archeologists to "make inferences about interior and exterior use-areas and the position of dwellings in relation to other major site features such as the stone pavements, to estimate household size, and to explore the manner in which these factors behave over time" (Walker 2005:65-66).

Living Floors - To date a number of living surfaces, or floors, have been identified from within post mold patterns, indicative of interior living surfaces. Analysis is currently ongoing to attempt to determine activity areas within these interior living surfaces. A number of hearths have been identified and analyzed to determine use and intra-site location. Some hearths have been located outside of structures, delineated by post mold patterns (Walker 2005:66-67).

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 11

Paso del Indio Site
Vega Baja, Puerto Rico

One notable example is a small burned area with a group of fire-cracked rocks from deep in Pilaster 8. This discrete feature is not associated with post molds or other features and is interpreted as an outdoor hearth on the bank of the river. Charcoal from an Archaic-age hearth in Pilaster 8 provides one of the earliest [radiocarbon] dates for the site [Walker 2005:67].

Site Features - Rock Pavements and Ditches - One rock pavement was located in the northern part of Pilaster 7, in Stratum 8, and appears to date to the end of the Early Ostionoid (Pre-Taino) occupation of the Paso del Indio site (AD 600-1200). García Goyco and Maurás Casillas (1993b) believed this might be part of a prehistoric ball court, "but no second rock feature parallel to it was found in the part of the site they excavated, so this is still an unproven hypothesis" (Walker 2005:67). A second rock pavement feature was located slightly deeper in Pilaster 6, also dating to the Late Ostionoid (Taino) occupation period.

... this feature contained a significant amount of cultural material, including pots sherds that were wedged vertically between the rocks, indicating this pavement was intentionally constructed, and not simply a layer of discarded rocks and sherds. In association with this second pavement was a shallow ditch that apparently served to drain water from this low-lying part of the site. These two features are associated with what appears to be a house floor and may be related to the structures' roof run-off and drip-line. The interpretation is that the ditch and pavement were concerted efforts to remedy a muddy area in front of the dwelling where roof run-off water puddled up [Walker 2005:67].

Human Burials - Osteology - Edwin Crespo (2000, 2001) has studied the 152 human burials (138 were recovered and 14 were located in profiles, but left in situ) found at the Paso del Indio site. Recent analysis of the location of the human burials within the stratigraphic layers would indicate that most if not all of the burials are from the Early Ostionoid (Pre-Taino) occupation of the site (AD 600-1200) (Walker 2005:69).

Crespo considered all the 138 burials to represent a single population. Of this group, he determined that 66 were adults and 72 were subadult infants and juveniles. He determined that 32 of the adults were male and 30 were female; sex determination was not possible for the 72 subadults or for four adults in poor states of preservation [Walker 2005:69].

Based on the number of subadult infant burials to juveniles and adults, Crespo "determined there was an approximate 30 percent rate of infant mortality in the Paso del Indio population, stating that this percentage is about normal for Precolumbian ..." populations (Walker 2005:69). In addition, Crespo found from a sample of 42 individual crania, 26 instances of tabular oblique frontal-occipital

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 12

Paso del Indio Site
Vega Baja, Puerto Rico

cranial deformation, or about 62 percent of the population, regardless of sex or age had crania deformation. The fact that so many crania had evidence of this type of crania deformation it would appear that this practice was linked to status or affinity social factors (Walker 2005:69).

Undoubtedly, the most significant pathology found by Crespo

... is the occurrence of syphilis (treponematosi) in one female aged between 20 and 25 years at her death. She was found with a complete late Ostiones-style pot. According to Crespo this is the first irrefutable case prehistoric syphilis in the Antilles [Walker 2005:70].

Dietary Patterns - An emerging field of scientific archaeological research is the study of stable isotopes of carbon and nitrogen found in the bones of prehistoric remains. According to Anne V. Stokes,

Stable isotope analysis allows us to measure the relative contribution of food group to diet. This is possible because animals incorporate the stable isotopes of carbon (C) and nitrogen (N) into their bodies in different relative amounts that reflect the isotopic compositions of their foods [which in turn are passed on to their human consumers]. By analyzing the bone collagen and apatite carbonate [found in human remains], a picture of prehistoric diet emerges [2005:186].

The estimates of these two isotopes, found in the bones of human remains, can provide an independent aspect to the reconstruction of past diets, in addition to the recovery of faunal and floral remains from archaeological contexts (Stokes 2005:185). Such an analysis might also suggest changes in past diets of prehistoric populations in the absence of faunal and floral remains.

From an analysis of the remains of eleven individuals, which appear to date to the Early Ostionoid (Pre-Taino) period (AD 600-1200), recovered from the Paso del Indio site, Stokes found the population generally derived most of their protein from a terrestrial diet of plants, such as maize, with only a portion of their protein from marine sources, such as shell fish (2005:198).

Funerary Practices - The relatively large numbers of recovered human burials, within stratified temporal contexts, has allowed researchers to examine funerary practices on a larger population of prehistoric peoples than ever recovered from other Puerto Rican archaeological sites. The analysis of this aspect of the study of Paso del Indio is still ongoing.

So far, a few distinct patterns have emerged on the treatment of the dead. The majority of the burials at the site are fully articulated and flexed, with the individuals arranged in a fetal position when they died,

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 13

Paso del Indio Site
Vega Baja, Puerto Rico

possibly wrapped in hammocks or other bindings. There are numerous secondary burials, including several instances where bones from one individual were placed with the complete and fully articulated burial of a second individual. Secondary burials, often arranged in what appear to have been bundles, were disarticulated post-cranial bones, some with crania, and some without. A few instances might have been multiple burials [Walker 2005:70].

Specific funerary practices relative to specific individuals include:

1. Two female burials were recovered with infants lodged in their birth canal, indicating they died in childbirth. This is the first time death during childbirth has been noted in the archaeological record of the Caribbean (Walker 2005:70-71).
2. Three mature adult males were recovered "with the skull of another adult male held in their hands or cradled in their arms" (Walker 2005:73). The cultural inference is that these burials are evidence of ancestor worship, in which the skull of a family ancestor is interred with an individual who treasured his ancestor's remains during his lifetime. Future DNA analysis may determine whether this postulation has merit, although such an analysis may infer the crania were trophies of an enemy, should a DNA connection not be established (Walker 2005:74).

Lithic Artifacts - Lithic artifacts (2,907) were found in abundance in all of the stratigraphic cultural layers and from all four prehistoric cultural periods, and were analyzed by Reniel Rodríguez Ramos (2005:1-54) According to Jeff Walker,

A full range of utilitarian and ceremonial stone artifacts was recovered from the site, including attractive items for personal adornment; a variety of large and small three-pointer stones [zemis]; a stone-collar fragment; as well as thousands of flakes, cores, hammerstones, choppers, celts, adzes, and classic edge grinders. Artifacts were fashioned from both locally available and foreign stone, for example flint from Antigua and possibly some from Hispaniola was identified, with other material coming from possibly even farther away [2005:75].

Rodríguez Ramos' main interest in the study of the lithic assemblage from Paso del Indio was to examine the change in lithic technology from the Saladoid (AD 400-600) through the Early Ostionoid (Pre-Taino) (AD 600-1200) cultural periods. In general, the Saladoid period at Paso del Indio exhibited a strong connection with the Cedrosan Saladoid component found on Puerto Rico, and characterized by "the manufacture of the plano-convex adze as its most diagnostic lithic constituent, while flake production procedures are amply dominated by the application of bipolar force over the objective pieces, which are most commonly fine-grained isotropic materials" imported

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 14

Paso del Indio Site
Vega Baja, Puerto Rico

from the Lesser Antilles islands (Rodríguez Ramos 2005:50).

Following the end of the Saladoid cultural period, Rodríguez Ramos noted a dramatic alteration in the lithic material in the succeeding Ostionoid period, ca. AD 700, from the Paso del Indio site.

Around that time, flaked, use-modified, and ground utilitarian lithic materials began to be produced following different reduction templates from those observed in Saladoid societies for around a thousand years in Puerto Rico, indicating the advent of distinct traditions of stone working. Some of these changes include the greater emphasis on freehand flake production following parallel reduction formats, the incorporation of basic rocks among the raw materials that were used for core-flake reduction, the relative decay in the interaction spheres that promoted the import of raw materials from the Lesser Antilles concomitant with the intraisland emphasis on flint obtainment, the replacement of the plano-convex adze with the petaloid adze, the incidence of the stone bowl, the production of necked specimens, the presence of the conical mano, the reincorporation of the distinctive edge grinder that has never been found in Cuevas deposits, the presence of a vast array of grain and/or tuber processing tools, and the retroduction of the net weights [Rodríguez Ramos 2005:51].

Analysis of lithic materials recovered from the Paso del Indio site has been completed. Still in process is the laboratory analysis of such diverse subjects, as geological interpretation, computer analysis of prehistoric features, and human remains research. Separate studies of the lithic, ceramic, and shell artifacts, archaeobotanical and faunal remains, and paleoethnobiological data are done or nearing completion. However, even at this stage of analysis, the Paso del Indio site investigations have made some significant contributions to the study of the prehistoric Caribbean. According to Jeff Walker,

The research to date has resulted in an extensive published and unpublished record about the Paso del Indio site. It is the first time remote sensing such as GPR has been used on a Puerto Rican archaeological site. It leads the way in using geomorphology to interpret archaeological stratigraphy and flood sequences. It presents vast amounts of raw data on burials, some very tantalizing initial interpretation of funerary practices, and evidence that ancestor worship was practiced prehistorically through the manipulation of human remains. The large number of radiocarbon dates—including two from the Archaic age—is invaluable for refined stratigraphic interpretations. The project has introduced GIS as an analytical tool capable of data manipulation and interpretation [2005:86].

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 15

Paso del Indio Site
Vega Baja, Puerto Rico

Summary Statement

The Paso del Indio site, discovered in the midst of a major highway construction project, has proven to be the largest and deepest stratified multi-component prehistoric site found to date in the island of Puerto Rico. The site exhibits a series of stratified cultural layers encompassing thousands of years of distinct occupations, clearly differentiated by natural layers product of flood episodes and soil deposition. This singular circumstance has created a stratigraphic sequence some 5 meters deep, which comprises all four prehistoric cultural periods found on Puerto Rico. The cultural material recovered is rich and in very good state of preservation; it includes artifacts of stone, bone, and clay, as well as human remains, faunal, and other organics. As explained in the preceding pages, features were identified that can be associated to open spaces and also habitation units and burials, among others.

Archaeological investigation of the site using a variety of scientific techniques and a wide range of analysis on cultural and natural remains, are just beginning to make significant contributions to the study of Puerto Rican and Caribbean archaeology. These contributions will continue with the completion of the analysis of material recovered from investigations from the 1990s and any future investigations which may be conducted at the Paso del Indio site.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 9 Page 16

Paso del Indio Site
Vega Baja, Puerto Rico

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**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 9 Page 17

Paso del Indio Site
Vega Baja, Puerto Rico

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**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 9 Page 18

Paso del Indio Site
Vega Baja, Puerto Rico

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United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section 10 Page 19

Paso del Indio Site
Vega Baja, Puerto Rico

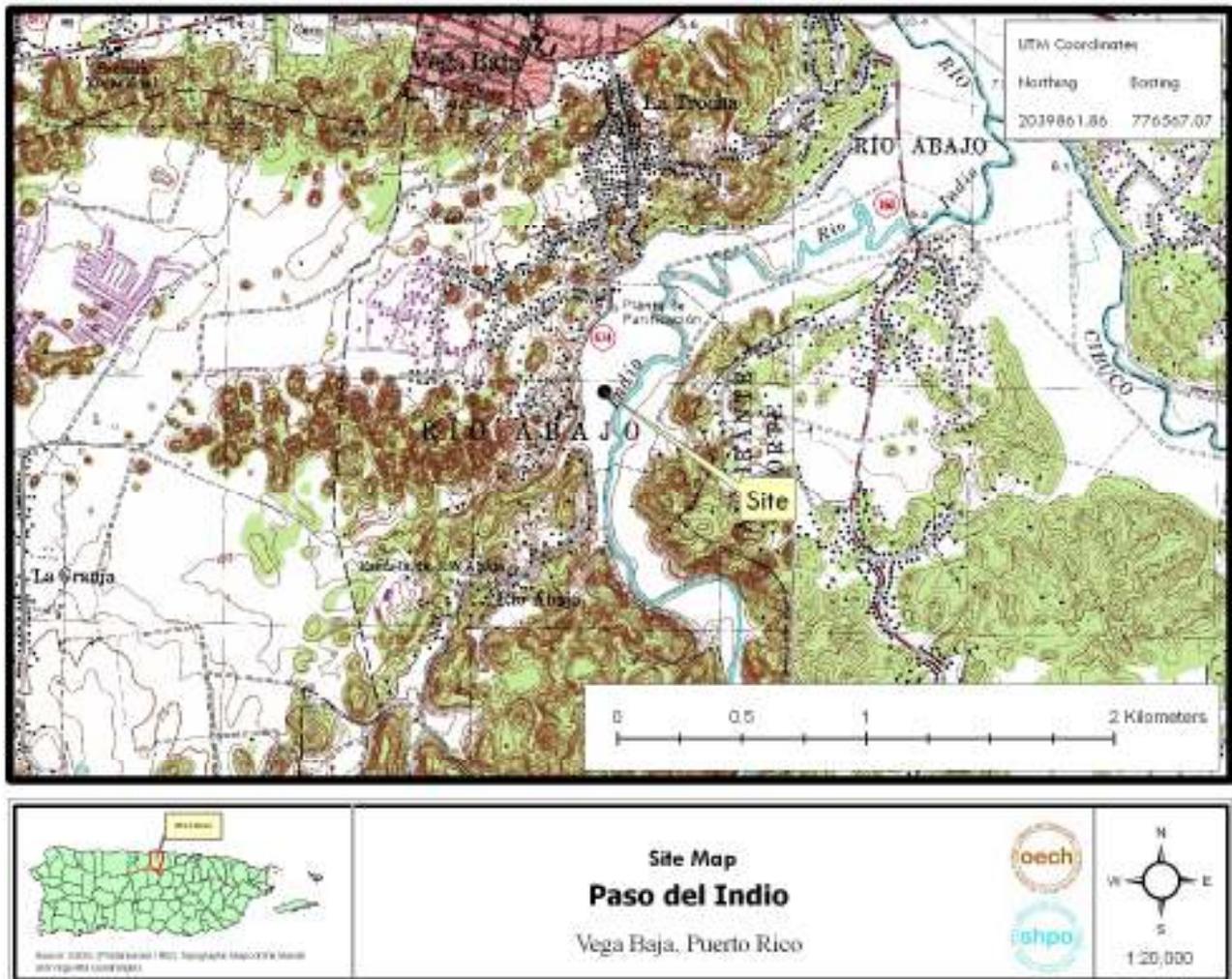


Figure 1 – Location of site in USGS map Manatí quadrangle

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 10 Page 20

Paso del Indio Site
Vega Baja, Puerto Rico

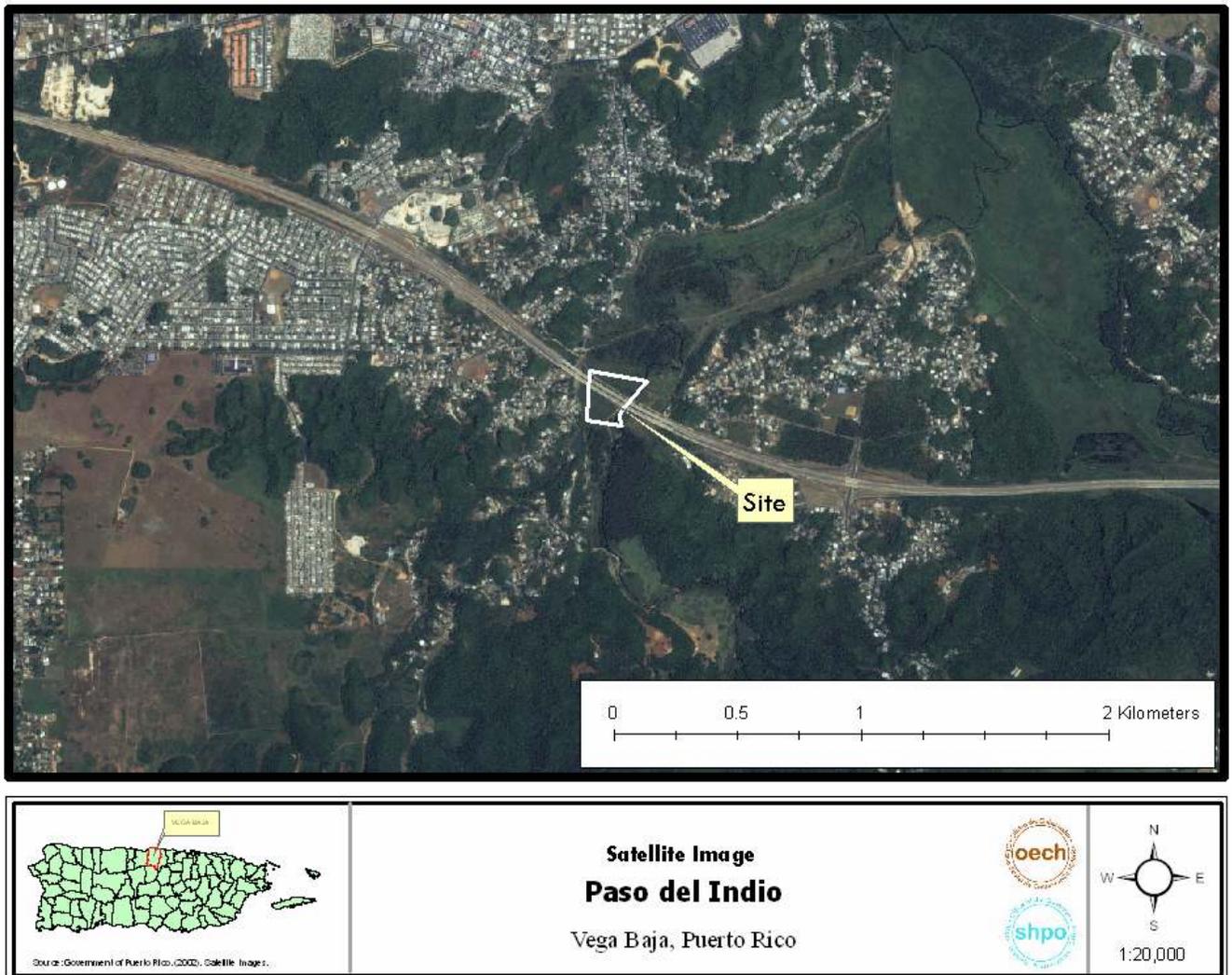


Figure 2 - Site Boundary

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 10 Page 21

Paso del Indio Site
Vega Baja, Puerto Rico

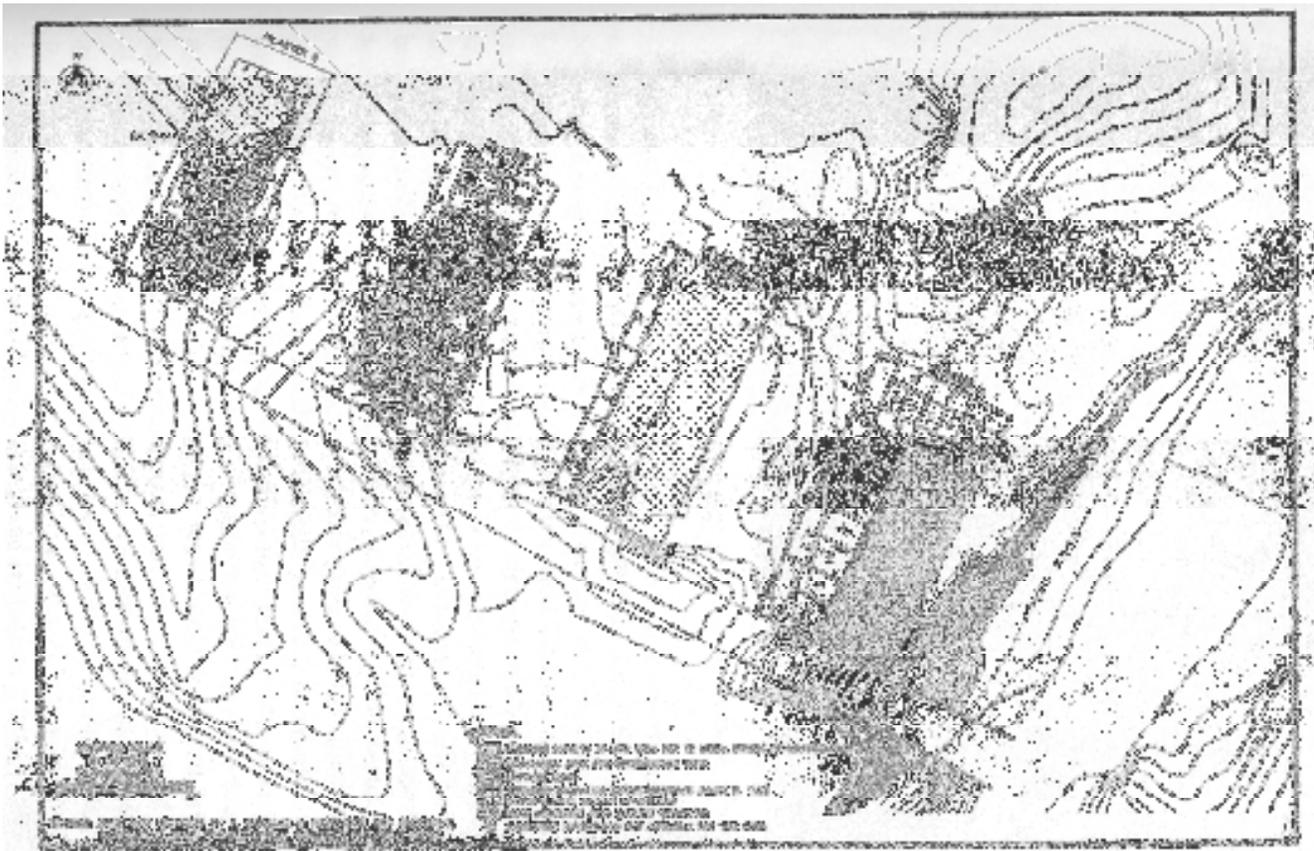


Figure 3 - Pilaster's (bridge's footings) Plan - area excavated in the bridge construction project