# APPENDIX K

# NATIONAL HISTORIC PRESERVATION ACT COORDINATION
# BRAZOS ISLAND HARBOR
# CHANNEL IMPROVEMENT PROJECT
# CAMERON COUNTY, TEXAS

U.S. Army Corps of Engineers, Galveston District
2000 Fort Point Road
Galveston, Texas 77550

July 2014

**TEXAS HISTORICAL COMMISSION**
*real places telling real stories*

March 1, 2012

Carolyn Murphy
Chief, Environmental Section
U.S. Army Corps of Engineers
P.O. Box 1229 (PE-PR)
Galveston, Texas 77553-1229

Re: Project review under Section 106 of the National Historic Preservation Act of 1966 and the Antiquities Code of Texas
Draft Report Review, *Remote-Sensing Survey for the Brazos Island Ship Channel Improvement Project, Cameron County, Texas*, TAC Permit No. 6011
COE-VD

Dear Ms. Murphy:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed federal undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission. As the state agency responsible for administering the Antiquities Code of Texas, these comments also provide recommendations on compliance with state antiquities laws and regulations.

The review staff, led by State Marine Archeologist Amy A. Borgens has reviewed the information regarding this project. Additional information was required for magnetometer targets M3, M5, M6, and M10 in order to complete the review of the draft report. The SEARCH Principle Investigator provided additional data, including figures, which greatly clarified the recommendations proposed within the draft report; the inquiry and response are included as Appendix A. The final report will include the new material presented by the authors. We concur that anomalies M1-M4 and M6 are not representative of historic shipwreck sites and that anomalies M5 and M7-M9 are historic in nature but are not significant to warrant additional investigation. We concur that anomaly M10 is potentially associated with the 1864 railroad constructed by General Francis Herron. Both SEARCH and the USACE have indicated that the project impacts should terminate at a distance of 27 meters from M10 and have asked to reduce the 50-m avoidance buffer required by the THC. The 25-m avoidance requested by the USACE (letter dated 13 January 2012) is acceptable. As long as M10 can be avoided by 25 m, the proposed project may proceed without further archeological investigations unless unexpected cultural material is encountered. Further investigation will be required if M10 cannot be avoided by the 25-m buffer. We look forward to the final report.

Thank you for your cooperation in this federal and state review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Amy Borgens at 512-463-9505.**

Sincerely,

for
**Mark Wolfe**
**State Historic Preservation Officer**

**MW/ab**

APPENDIX A
Additional Information Provided for Review

## Amy Borgens

**From:** Jeff Enright <jeff@searchinc.com>
**Sent:** Thursday, February 23, 2012 10:27 AM
**To:** Amy Borgens
**Cc:** Jerry Androy
**Subject:** RE: Brazos Island Harbor Improvement Project
**Attachments:** SHPO_Review_Images.zip

Amy,

Thank you for your thorough review of the draft report in question. Your analysis and questions regarding our conclusions are insightful and the answers to these inquiries definitely will improve the quality of the report. Please see our responses to your questions below. We will incorporate this discussion into the report for the final version. Our goal is to provide the Texas Historical Commission (THC) and the U.S. Army Corps of Engineers, Galveston District (USACE) with as much available data regarding these magnetic anomalies and their unique environmental setting in order to make sound cultural resource management decisions, as well our professional opinion based upon SEARCH's combined years conducting remote-sensing survey and data analyses for archaeological purposes.

We await your decision regarding the magnetic anomalies in question following your review of our answers, and subsequent consultation with Mr. Jerry Androy, Staff Archaeologist for the USACE. If after consultation it is thought best to carry out archaeological diver investigations of these anomalies, SEARCH is more than willing to conduct this work at the request of the THC and USACE.

Thank you,
Jeff

Jeff Enright, M.A., RPA
Maritime Principal Investigator
GIS Specialist

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Archaeology - Architectural History & History - Maritime Archaeology

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**From:** Amy Borgens [mailto:Amy.Borgens@thc.state.tx.us]
**Sent:** Sunday, February 19, 2012 7:34 PM
**To:** Jeff Enright
**Cc:** Jerry Androy
**Subject:** Brazos Island Harbor Improvement Project

Jeff,

Thank you for a well-written report. I would, however, like to ask a few questions regarding some of the recommendations before I finish the review. More information needs to be provided for some of these

anomalies and the information provided in response to these questions will likely need to be added to the report content.

**Magnetometer Anomaly M3**. Can there be a better explanation as to why this anomaly has not been recommended for ground-truthing? The sonar image does not provide evidence that this submerged area is associated with shoreline stabilization. Nor is there discussion of a shoreline stabilization project at this location. The association of this anomaly with shoreline stabilization seems speculative especially as the sonar target (isolated rocks) is largely outside of the magnetometer target. It does not preclude the existence of a buried wreck.

***[Jeff Enright]***

***Our intention was not to identify a particular shoreline stabilization project by name; rather the report refers to the current rock stabilization that is extant. Also, we did not intend to insinuate that the isolated rocks were the source of the anomaly, but merely were mentioning that the sonar record revealed nothing other than the rocks. We will clarify both these points. Attached are a couple Google Earth images of this spit of land at [redacted] showing before and after views of the stabilization (M3_1962.jpg and M3_2011.jpg). We have been unable to determine the date when this rock was deposited; however, based upon aerial imagery we believe it occurred subsequent to the EH&A survey, which did not extend this far out from the channel. We also believe that this stabilization likely includes ferrous material (e.g., iron rebar within the concrete blocks). Because M3 is in close proximity to the extant shoreline stabilization material, our connection with this construction is a hypothesis put forward to offer a potential anomaly source. It is plausible to hypothesize that the source of M3 was deposited during this construction activity. Because the extant shoreline stabilization on this spit of land is so near the channel top of slope, it also is plausible to hypothesize that construction related material slipped down the channel slope, as the peak amplitudes of M3 are located on the channel slope in 20-30 feet of water, with the center in 28 feet (see attached image M3_Bathy.jpg).***

***In my experience interpreting magnetic data for archaeological purposes, Anomaly M3 is not indicative of a shipwreck source. It is complex and its areal extent is relatively large; however, increased complexity and size are not defining characteristics with regards to shipwreck anomalies. Considering all its characteristics collectively, M3 does not fit the model of a shipwreck magnetic signature as we currently understand it.***

***All this being said, our analysis of Anomaly M3 certainly is open to alternate interpretation and competing hypotheses. Ultimately the decision of whether or not to further investigate M3 resides with the THC and USACE. If our present analysis of M3 lacks sufficient strength to clear it as a potential submerged cultural resource, SEARCH will absolutely investigate it further at the request of the THC and USACE.***

**Magnetometer Anomaly M5**. Anomaly M5 was only partially recorded by the present survey. According to the report, page 40, the rest of the anomaly extends into the channel. The portion of the anomaly that is in the channel was detected by the EH&A survey (Bond et al. 1990) and is the portion investigated by EH&A divers. Though the EH&A dive investigation only identified metal plates, based on comparisons between the SEARCH and EH&A magnetometer targets, did the dive investigation cover any of the anomaly detected in the present survey? Is it possible the anomaly detected by the current survey represents a separate wreck site or is an uninvestigated portion of a shipwreck that produced the metal plates (41CF132)? Based on figure 20, it is improbable that SO88 and SO102 are the source of the magnetometer anomaly as they are at least 50 m from the general area around the center point of the dipole. So far the discussion of this anomaly does not provide enough evidence to preclude it from further examination – especially at its location just inside the jetty.

Is the terminus post quem date of 1953 related to the wreck date of THC No. 841, *Little Chris*? Please explain why target M5 cannot be a historic wreck that predates 1953.

***[Jeff Enright]***

***Clearly our description of Anomaly M5 (41CF132) has led to some confusion and requires rewriting. SEARCH's survey recorded the northern extent of the anomaly (i.e. the portion within the channel) and the statement on page 40, "The anomaly extends approximately 12 m (39 ft) beyond the toe of the channel (i.e. into the channel proper)," is offered as a description for its location. We believe that a portion of the negative lobe of M5 (41CF132) was not recorded during our survey and is located to the south, towards the jetty. We will clarify this.***

***Attached is an image of a rough geo-referencing of the EH&A survey at this locale (M5_EH&A.jpg). You will notice that their survey recorded the positive lobe of the anomaly, which they designated "Anomaly X." Our survey recorded this lobe, as well as a portion of the negative lobe, the remainder of which resides outside of our survey area (as described above). We believe that EH&A archaeological divers investigated both the portion of this anomaly within the channel and the portion on the south jetty, as Hoyt and Gearhart (1992:129) identified the primary source for Anomaly X (41CF132) as "a group of large steel plates <u>wedged among the jetty rocks</u> [emphasis added] near the [redacted]." Additionally the THC Archaeological Site Form notes that the Environmental Setting of Site is "wreckage among jetty rocks," and Cultural Features are "steel plates wedged among jetty rocks-- approximately 5 metal plates--all on edge" (see Appendix B: 41CF132 Archaeological Site Form). Anomaly M5 correlates with Anomaly X, and EH&A thoroughly investigated the site. SEARCH does not believe that M5 (41CF132) represents a separate wreck site or an uninvestigated portion of the shipwreck noted by Hoyt and Gearhart (1992). Our chronology for the site formation is based upon the research and assessment done by Hoyt and Gearhart (1992:129), who provide the tentative dates of 1953 and 1970 (rather than include the entire argument here, I'll refer you to the second paragraph on page 129 of their report). Our assessment of NRHP eligibility status is based upon the THC assessment for Site 41CF132, which states that it has no potential for National Register of Historic Places listing (see Appendix B: 41CF132 Archaeological Site Form).***

***Our report does not suggest that S0088 or S0102 are the primary sources of Anomaly M5, but merely associated with the anomaly and contributing to its composition. We will clarify and expand our discussion of Anomaly M5 and include a concise statement for the identity of the sonar contacts and their effect upon the anomaly.***

**Magnetometer Anomaly M6**. The discussion of anomaly M6 on page 43 describes the location of the target as the bottom of the Brownsville Channel at a depth of 12 m. According to the description of the project area, the survey did not include the channel but was on either side of the existing toe. Did the close-order survey demonstrate it was in the channel? The location of M6 in Magnetic Contour Sheet 4 of 4 illustrates the approximate center of the dipole, often considered the source of the magnetometer target, is at the edge of the channel and not in the channel. This may just be a misunderstanding based on the scale of the contour image but can you verify the location of the center of the dipole? The anomaly is also close to a wreck icon (Figure 9). Please describe the wreck, give its distance from M6, and provide an idea of the accuracy of the wreck location. Also describe why it is not associated with the nearby wreck icon. It can be inferred from previous channel dredging projects that M6, if it is in the channel, is modern debris as it is deeper than historic water depths in an area that has already been dredged. If this is the reason M6 has not been recommended for avoidance or further investigation this needs to be clearly stated in the discussion on page 43. The description of anomaly M6 needs to be expanded to include its relationship (or lack thereof) to the wreck icon, a more specific assessment of the dipole source to the channel edge and depth, and why it is believed to post date the creation of the channel.

*[Jeff Enright]*

***The description of the survey design on page 27 states that the inner survey transects originated "at the toe of the channel," which is located at the bottom of the channel slope and inside the channel. Therefore, our inner transects were in fact inside the channel (see also Figure 10, page 29). We will add a statement that mentions a portion of the survey occurred within the channel proper.***

***The attached figure M6_Bathy.jpg illustrates the initial and close-order survey transects, as well as the bathymetry over Anomaly M6. This image should clarify the location of M6 primarily at the toe of the channel and beneath historic water depths. Therefore, the source of M6 likely was deposited subsequent to the most recent maintenance dredging of the channel. This would be more clear were a figure included depicting the channel toe and the bathymetry in relation to the anomaly; we will rectify this oversight.***

***The nearby wreck is the* Campesino*, a modern fishing vessel lost in 1983. The accuracy of her location is listed as 1 mile, which means she could correlate with M6. This is just an assumption, but if the* Campesino *is the source of M6, it would place her location within the channel limits and she likely would have been removed as an obstruction to navigation during subsequent maintenance dredging. Regardless, the* Campesino *likely is neither historic nor eligible for listing in the NRHP. We will expand our assessment of Anomaly M6 to include a discussion of the* Campesino *and why we do not believe she correlates to the anomaly, as well as why she is not eligible for listing in the NRHP.***

**Magnetometer Anomaly M10.** The discussion of M10 does not clearly demonstrate that the source of the anomaly is related to the 1864 railroad. Figure 31 shows that M10 is approximately 60 m from the nearest rail locale and more than 100 m from the railroad route. What evidence is used to suggest the sonar target is a railroad feature? Is the identification of the sonar target as possible disarticulated railroad features based on their similarity to figure 27? Is the identification of the sonar targets in figure 27 as railroad tracks an assumption based on the EH&A investigation – how was this determined? How does it compare to sonar imagery from the 1992 EH&A report? This report showed a sonar target for anomaly T [M8] but clearly states that railroad tracks were not identified in the sonar data (page 92-93)? The 1992 EH&A sonar does not seem to record a visible feature at anomaly V [M9, SO97]. Is SO97 definitively associated with the EH&A targets or is it something that has been deposited after the EH&A investigation? This should be mentioned in the discussion of both sonar targets. The report needs to provide more evidence to suggest this anomaly is related to the historic railroad.

*[Jeff Enright]*

***It is apparent that we need to clarify this section and the associated map. What is depicted in Figure 31 is not the full extent of the railroad but merely an estimation of the line based upon the rail locations identified by EH&A (Hoyt and Gearhart 1992:96-98). In other words, according to Hoyt and Gearhart (1992:95, cited on page 47 of the report) the railroad would have extended beyond either end of the line illustrated in Figure 31, page 49. Our hypothesis for M10 follows the thought process presented in Hoyt and Gearhart. The "end of the rails in the direction of the dike [northwest] has not been verified" (Hoyt and Gearhart 1992:95). If a hypothetical line is extended to the northwest – towards the unverified "end of the rails" – it crosses close to the M10 locale, an area not surveyed by EH&A (see attached images M10_Extended_Railroad.jpg and M10_EH&A_Mag.jpg; we will include these images in the final version of the report). Therefore, it is plausible that M10 may be associated with the railroad identified by EH&A.***

***The sonar image on page 92 (Hoyt and Gearhart 1992) that you refer to is described on page 91: "barely visible on the strip chart, at the westernmost corner of the piling grid [labeled 'vicinity of Anomaly T'], is a linear object about 8 m long which may be one of the railroad rails known to be in this corner of the piling***

***grid." Is the following statement on page 93 the one to which you are referring? "Close examination of survey tracks known to cross existing railroad rails has failed to produce a positive indication of those tracks (Figure 31)." The way I am understanding this particular statement is a description of the success, or lack thereof, of the sub-bottom profiler to resolve the rails. I am not finding a statement that railroad tracks were not identified in the sonar data. Subsequent diver investigations identified 3 lengths of exposed rail at Anomaly T (presently M8), and 5 lengths of exposed rail at Anomaly V (presently M9) (Hoyt et al. 1991:80-82). The identification for the source of sonar target S0097 (Figure 27), which correlates with EH&A Anomaly V, is not an assumption but rather based upon physical verification. The sonar image for Anomaly T provided by EH&A (Figure 30, page 92) unfortunately is too low quality to make any sort of comparison, and no sonar image is provided for Anomaly V. Sonar images collected in our survey, however, merit comparison. We can compare the image of M10 (Figure 32) to the image of M9 (Figure 27), which has been diver verified as rails, and note the similarities. We are only able to speculate on sonar target S0096 as we have no comparison from EH&A's survey. Upon initial examination of our sonar image (Figure 29, page 47), S0096 appears to be a length of cable; however, it could just as likely be the "twisted rail" described by EH&A divers (Hoyt et al. 1991:80). This is an alternate identification we will include in the final report.***

***In summary, several key pieces of circumstantial evidence for the identity of M10 exist:***

- ***the location of Anomaly M10 in line with the diver verified railroad route and the linear magnetic anomaly recorded over the railroad by EH&A (M10_Extended_Railroad.jpg and M10_EH&A_Mag.jpg)***
- ***the fact that EH&A did not survey this area, nor were they able to locate the "end of the rails"***
- ***the similarities between the M10 sonar image and the M9 sonar image, which has been diver verified as rails***
- ***the location of 2 additional diver verified rails to the north of M10 (see Figure 31, page 49and attached image M10_Extended_Railroad.jpg)***

***We agree that the analysis of Anomaly M10 in the draft report is insufficient and we will certainly rewrite it for the final, being sure to include the above discussion.***

***Again, this is a hypothesis open to alternate interpretation, and ultimately a decision for the THC and USACE. If you feel diver investigation is still warranted, SEARCH will investigate M10 further at the request of the THC and USACE.***

**Summary**

On page 51 of the recommendations it is stated that all but one anomaly, M10, has been identified as known sources or modern debris. I do not think this evidence has been provided for any of the above-listed magnetometer targets based on the current descriptions provided; these may simply need to be expanded by adding additional information to the report based on above-listed inquiries. Unless more evidence is provided to strengthen or clarify the identification for some of these anomalies, they may require ground-truthing. The location of many of these anomalies are in areas defined in historic maps as having breakers or shallow water depths which are frequently the cause of wrecking events.

***[Jeff Enright]***

***We will include the above discussions in the report and expand our analyses of these anomalies. If you still feel, however, that our conclusions and recommendations lack sufficient strength, SEARCH is prepared to investigate these anomalies further at the request of the THC and USACE.***

On a similar note, the avoidance margin for M10 should not be reduced from 50 m based only on a hypothesis it is a railroad feature when this has not been proven. The discussion in the recommendations on page 51 that describes why M10 is not a shipwreck should be moved or repeated in the analysis of M10. It is feasible to reduce the avoidance margin if the anomaly is not synonymous with a shipwreck target but I don't see enough evidence to claim this is a historic railroad feature. Based on the evidence provided in the report I believe the most that can be stated is that the anomaly is potentially associated with the 1864 railroad – it does not actually appear to be the 'unverified "end of the rails."'

***[Jeff Enright]***

***As stated previously, this is a hypothesis based upon the available circumstantial evidence, and as such, subject to competing hypotheses. We agree that we can only conclude that M10 <u>potentially</u> is associated with the 1864 railroad, and our report states this: "One site, Anomaly M10, may be associated with the Brazos Santiago Depot NRHP property (41CF4)" (page iii), and "Anomaly M10 potentially is a submerged cultural resource associated with the Brazos Santiago Depot (41CF4)" (page 51). Absolute proof of course will require diver investigation.***

***Although it is possible that the entire extent of Anomaly M10 has not been captured in our survey (it is located on an outside survey transect), we are able to analyze its characteristics as a potential shipwreck. It is clear that M10's northern hemisphere is dominated by a relatively intense, positive magnetic lobe. In my experience interpreting magnetic data for archaeological purposes, and comparison to the model of a shipwreck magnetic signature as we currently understand it, M10 is not indicative of a shipwreck source. This analysis, coupled with the above hypothesis and the description of the preservation potential of the rails provided in Hoyt and Gearhart (1992:131, cited on page 51 of the report), led to the suggestion that applying an avoidance zone typically reserved for potential shipwreck anomalies might not be necessary in this instance. Of course this merely is a recommendation. If the USACE design plan requires latitude with the avoidance zone and the THC feels it best to verify the source of M10, SEARCH is prepared to conduct such an investigation at the request of the THC and USACE.***

In addition,

According to the Texas Administrate Code, the magnetometer contour figures are to illustrate the magnetometer anomalies and the actual, not planned, survey transects. I do not see the actual transects or close-order transects illustrated.

The Texas Administrate Code also requires a figure that shows both the planned survey transects and actual transects together in a figure. This image has not been included.

The overall sonar coverage figure needs to be produced at a larger scale.

In the legend for the Magnetic Contours, the lines that represent 5 nT (positive and negative) are not visible in the printed report.

***[Jeff Enright]***

***These comments will be addressed completely in the final report.***

In the Introduction at the bottom of page 1, it is stated that the peak of maritime history (activity is a more accurate term) in the region was the 17th and 18th centuries. Shouldn't this be 19th and 20th centuries as it is stated on page 25? The latter centuries are accurate for maritime traffic and frequency of wreck events.

***[Jeff Enright]***

***This will be remedied in the final report.***

Thank you Jeff for your patience with these inquiries. I look forward to hearing from you.

***[Jeff Enright]***

***Not a problem. I welcome your comments in an effort to produce a professional report that adequately addresses the Section 106 concerns of the project and protects the potential submerged cultural resources in the State of Texas.***

Amy

**Amy A. Borgens, MA**

State Marine Archeologist

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