PROJECT COMPLETION REPORT

Project Name: **Raccoon Island Breakwater Rehabilitation Project**

State Project No. **TE-48**

Report Date: **July 2018**

By: **Aptim Environmental & Infrastructure, Inc.**

1. Project Managers/Contracting Officer

CPRA Construction Project Manager:	Brian Babin, P.E.	Tel: (985) 447-0956
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APTIM Construction Observers:	Chris Paul, E.I. John Darnall	Tel: (225) 932-2767 Tel: (225) 987-6879

2. Project Funding and Sponsors

This project was constructed by the State of Louisiana Coastal Protection and Restoration Authority (CPRA). The Natural Resources Conservation Service (NRCS) was a co-implementing trustee on the original TE-48 Construction contract. Operations and Maintenance (O&M) design and construction activities were funded under the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). The Raccoon Island Shoreline Protection/Marsh Creation Project (TE-48) was approved on Project Priority List 11 (PPL 11).

3. Location and Description of the Project

The Raccoon Island Breakwater Rehabilitation Project is located in Terrebonne Parish, Louisiana, and is the westernmost island in the Isles Dernieres barrier island chain. The project area is approximately 21 miles southwest of Cocodrie, Louisiana and is situated south of Caillou Bay. This project consists of the placement of armor stone on existing breakwaters on the seaward (southern) and eastern sides of the island in order to protect the island from further erosion. The project site location is shown in Figure 1 below.

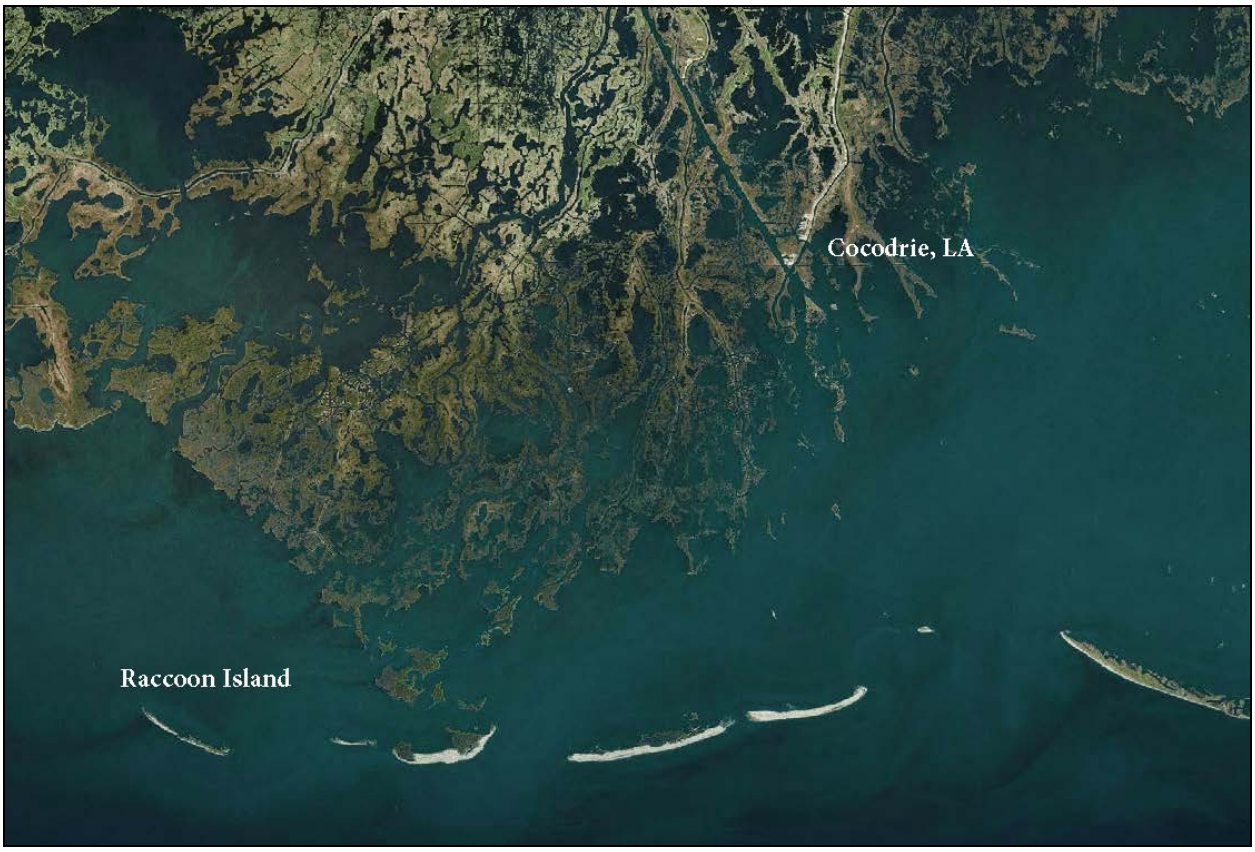

Figure 1: Project Site Location (Image from Microsoft Corporation Earthstar Geographics SIO, 2018)

The Isles Dernieres barrier island chain has experienced severe shoreline recession and some of the highest erosion rates of any coastal region in the world due to the combined effects of sea level rise, subsidence, storm activity, and inadequate sediment supply. Shoreline retreat has been observed both on the bayward and seaward sides of the island. Raccoon Island provides habitat for both colonial and shorebird colonies as well as a diverse population of aquatic species.

Several construction projects have been implemented since 1997 in an effort to reduce and/or prevent additional shoreline retreat of the Raccoon Island rookery. In 1997, a total of eight (8) segmented rock breakwaters were installed in an attempt to reduce and/or prevent additional shoreline retreat as part of CWPRRA project TE-29. In 2007, eight (8) additional rock breakwaters were installed to the west of the breakwaters constructed in 1997 as Phase A of the CWPPRA TE-48 project. The terminal groin at the eastern end of the island was also extended to reduce sediment transport eastward. Phase B of the TE-48 construction project was completed in 2013 and consisted of constructing containment dikes to contain marsh fill material hydraulically dredged from the Gulf. Approximately 58 acres of marsh habitat were restored during this project.

While the sixteen breakwater structures were effective in reducing erosion on the seaward side of the eastern part of the island, the breakwaters have settled over time. This project will restore the

efficacy of the existing construction features from the TE-48 project and will help to reduce sediment erosion on the eastern and seaward sides of the island.

4. Final As-Built Features

The contractor, Patriot Construction, Inc., was paid for the placement of 14,758 tons of armor stone on breakwaters 0 through 7, and 2,590 tons of armor stone on the terminal groin. Patriot Construction placed a total of 17,393 tons of armor stone on the breakwaters and the terminal groin and was paid for the placement of 17,348 tons. Tonnages were calculated based on barge displacement surveys. A summary of the tonnage of armor stone installed per breakwater (Table 1) is shown below. Table 2 shows the design template and the volume filled by the Contractor.

Table 1
Summary of Armor Stone Installed

Item	Quantity Installed	Unit
Breakwater #0 Rehabilitation – Armor Stone	878	TONS
Breakwater #1 Rehabilitation – Armor Stone	1,465	TONS
Breakwater #2 Rehabilitation – Armor Stone	1,262	TONS
Breakwater #3 Rehabilitation – Armor Stone	2,830	TONS
Breakwater #4 Rehabilitation – Armor Stone	1,349	TONS
Breakwater #5 Rehabilitation – Armor Stone	2,620	TONS
Breakwater #6 Rehabilitation – Armor Stone	1,402	TONS
Breakwater #7 Rehabilitation – Armor Stone	2,952	TONS
Terminal Groin – Armor Stone	2,635	TONS
Total Armor Stone Installed	17,393	TONS

Note: The design template for the terminal groin was modified during construction via Change Order 002. Tonnages shown in Table 1 were calculated based on barge displacement surveys.

Table 2
Design v. Post-Construction Volume Placed

Item	Design Volume (Ft^3)	As-built Volume (Ft^3)
Breakwater #0	15,438	14,968
Breakwater #1	15,028	15,027
Breakwater #2	15,737	13,482
Breakwater #3	49,599	52,899
Breakwater #4	29,241	26,100
Breakwater #5	23,739	23,285
Breakwater #6	20,222	15,559
Breakwater #7	37,134	29,159
Terminal Groin – Armor Stone	4,392	41,526

Note: Design and Post-Construction volume as shown in Table 2 assumes 0% voids.

The permits and design required a breakwater crest elevation of +4.5 feet, NAVD88 with a tolerance of ±0.5 feet. The constructed breakwaters exceeded the breakwater crest elevation in several locations on all of the breakwaters. Table 3 shows that while the maximum elevation of many of the breakwaters was above the upper tolerance, the average elevation of seven of the eight breakwaters and the terminal groin was within the template plus tolerance elevation. The average breakwater crest elevation of one of the breakwaters, BW-0, was 0.14 feet above the upper tolerance.

Table 3
Summary of Breakwater Crest Elevations

Breakwater	Minimum Elevation (ft NAVD88)	Maximum Elevation (ft NAVD88)	Average Elevation (ft NAVD88)
BW-0	3.51	5.84	5.14
BW-1	3.82	5.81	4.99
BW-2	3.74	6.14	4.42
BW-3	3.62	6.19	4.80
BW-4	3.81	6.06	4.89
BW-5	3.64	5.9	4.62
BW-6	3.75	6.58	4.59
BW-7	3.87	6.88	4.33
Terminal Groin	3.5	5.7	4.28

The average crest elevation was calculated using the average elevation of the cross sections (from as-built surveys conducted by Francis Fortier) and the centerline crest as-built surveys. All elevations are provided in feet, NAVD88.

A one-stone overlay was installed on six (6) of the eight (8) breakwaters constructed during the TE-29 shoreline protection project. A two stone overlay was placed on Breakwaters 3 and 4 as pre-construction data showed that these breakwaters had experienced higher rates of settlement. A total of 14,758 tons of armor stone were placed on breakwaters 0-7.

A one-stone overlay was also installed on the terminal groin on the eastern end of the island. Prior to placement of armor stone on the western end of the groin, construction crews removed existing overwashed sand and sediment from the existing groin. Armor stone placed in this area was relayed from the rock barges to a marsh buggy operating onshore. A total of 2,635 tons of armor stone were placed on the terminal groin.

The as-built drawings are included in Appendix A. These drawings detail the elevation and location of the breakwater rehabilitation as well as the locations and installed elevations of terminal groin rehabilitation.

5. Habitat Acreages

Restoration projects are evaluated for environmental benefits using quantitative projections of plan form performance. Performance is quantified using habitat acreage descriptions for the wetland value assessment (WVA). The range of various habitat elevations and associated descriptions are defined in Table 2. The habitat acreages were calculated for the pre-construction and post-construction conditions to assist in future WVA calculations.

Table 4
Habitat Acreage Descriptions

Habitat	Description
Dune	≥ +5 feet, NAVD88 The portions of the dune platform anticipated to be within the elevation range.
Gulf Supratidal	≥ +2 feet to < +5 feet, NAVD88 Includes primary retention / containment dikes for the period anticipated to remain in the elevation range. Generally includes a major portion of the marsh platform until the time dewatering and consolidation reduce the elevation to intertidal.
Gulf Intertidal	≥ 0 feet to < +2.0 feet, NAVD88 Existing beach platform
Gulf Subtidal	≥ -1.5 feet to < 0.0 feet, NAVD88 Shallow open water near tombolo behind breakwaters.

It is anticipated that this project will protect the seaward shoreline of the eastern end of Raccoon Island. Therefore, the acreage benefited includes the beach and beach dune areas behind the rehabilitated breakwaters. Acreages were calculated based on surveys conducted by T. Baker Smith in 2015 and based on recent field observations.

Table 5
Habitat Acreages

Habitat Type	Pre-Rehabilitation Acreage[1]	Post- Rehabilitation Acreage
Dune	4.5	4.5
Supratidal	9.3	9.3
Intertidal	20.9	20.9
Subtidal	8.1	8.1
Total:	42.8	42.8

Assumptions:

1. Acreage accounts for the beach/dune areas behind the breakwaters constructed during the TE-29 project.

Actual Benefited Acres: **42.8 acres of beach/dune**

6. Key Project Cost Elements

Table 6
Key Project Cost Elements

Project Element	Project Cost Estimate	Cost Incurred as of Construction Completion
Construction	$2,765,000.00	$1,687,587.25
Engineering & Design[1]	$53,784.00	$51,245.50
Observation / Contract Administration[1]	$208,794.00	$109,495.00
Total	$3,027,578.00	$1,848,327.75

1. These project element costs include the cost for the Raccoon Island Construction Feature Removal project. Engineering and Design includes bid process support services.

7. Items of Work Construction, Final Quantities, and Monetary Amounts

Table 7
Items of Work Construction, Final Quantities, and Monetary Amounts

Item	Description	Bid Quantity	Unit	Construction Estimate[1] Unit Price	Construction Estimate[1] Amount	Bid Unit Price	Bid Amount	Final Quantity	Final Amount	% Over/Under
	Base Bid (Groin, BW 0-4)									
1	Mobilization and Demobilization	1	LS	$432,751.00	$432,751.00	$65,000.00	$65,000.00	1	$65,000.00	-85.0%
2	Breakwater Rehabilitation Armor Stone	10,678	TON	$105.00	$1,121,231.00	$92.00	$982,376.00	10,678	$982,376.00	-12.4%
	Additive Alternate 1 (BW-5)									
3	Breakwater Rehabilitation Armor Stone	1,958	TON	$105.00	$205,641.00	$92.00	$180,136.00	1,958	$180,136.00	-12.4%
	Additive Alternate 2 (BW-6)									
4	Breakwater Rehabilitation Armor Stone	1,668	TON	$105.00	$175,173.00	$92.00	$153,456.00	1,668	$153,456.00	-12.4%
	Additive Alternate 3 (BW-7)									
5	Breakwater Rehabilitation Armor Stone	3,064	TON	$105.00	$321,673.00	$92.00	$281,888.00	3,064	$281,888.00	-12.4%
	Change Order 002									
6	Removal of Sand Covering Existing Groin Armor Stone		LS	---	---	---	---	1	$24,731.25	---
	Total Cost				**$2,256,469.00**		**$1,662,856.00**		**$1,687,587.25**	**-26.3%**

1. The construction estimate does not include costs for pre-construction and post-construction surveys.

8. Construction and Construction Oversight

Prime Construction Contractor	Patriot Construction, Inc.
Subcontractor (Pre-Construction Survey)	Francis Fortier, RPLS
Subcontractor (Armor Stone Installation)	LeBlanc Marine
Subcontractor (Post-Construction Survey)	Francis Fortier, RPLS
Original Construction Contract	$1,662,856.00
Change Orders	$ 24,731.25
Final Construction Contract	$1,687,587.25

9. Oversight and Administration for Construction

Construction Oversight Contractor	Aptim Environmental & Infrastructure, Inc.
Final Amount	$109,495.00*

**Includes Oversight and Administration for the Raccoon Island Feature Removal construction project.*

10. Major Equipment Utilized by Contractor

LeBlanc Marine, Inc.

- 1 Short Reach Marsh Buggy
- 1 Long Reach Marsh Buggy
- 1 Ramp Barge with Spuds
- 2 Excavator Barges
- 6 Rock Barges
- 2 Crew Boats
- 1 Small craft/transport vessel

Figure 2: Major equipment mobilized to the project site

11. Construction Sequence

Quarry Drop Test/Armor Stone Material Validation Tests (December 1, 2017)
The armor stone drop test was held at the Vulcan Quarry in Grand Rivers, Kentucky on December 1, 2017. The project team (Whitney Thompson, John Darnall, and Chris Paul) accompanied by Contractor personnel (representatives from Patriot Construction, LeBlanc Marine, and Vulcan Materials) conducted a drop test of the armor stone to be supplied for breakwater rehabilitation. A total of eight (8) pre-weighed stones were selected from the Warsaw ledge that would supply the stone for the project. Two (2) of the eight (8) stones selected for testing failed due to cracking and/or shearing. Two (2) additional stones were selected and tested in order to validate armor stone materials cut from the Warsaw ledge of the Quarry.

Vulcan materials personnel indicated that stone may also be used from a different face in the quarry. A total of eight (8) pre-weighed stones were also selected from the Fort Payne ledge in order to validate any armor stone that could potentially be used on the project site. Two (2) of the eight (8) stones selected failed the drop test due to corner shearing. Two (2) additional stones were selected and tested in order to validate armor stone materials cut from the Fort Payne ledge of the Quarry. Figure 3 below shows the typical drop test procedure.

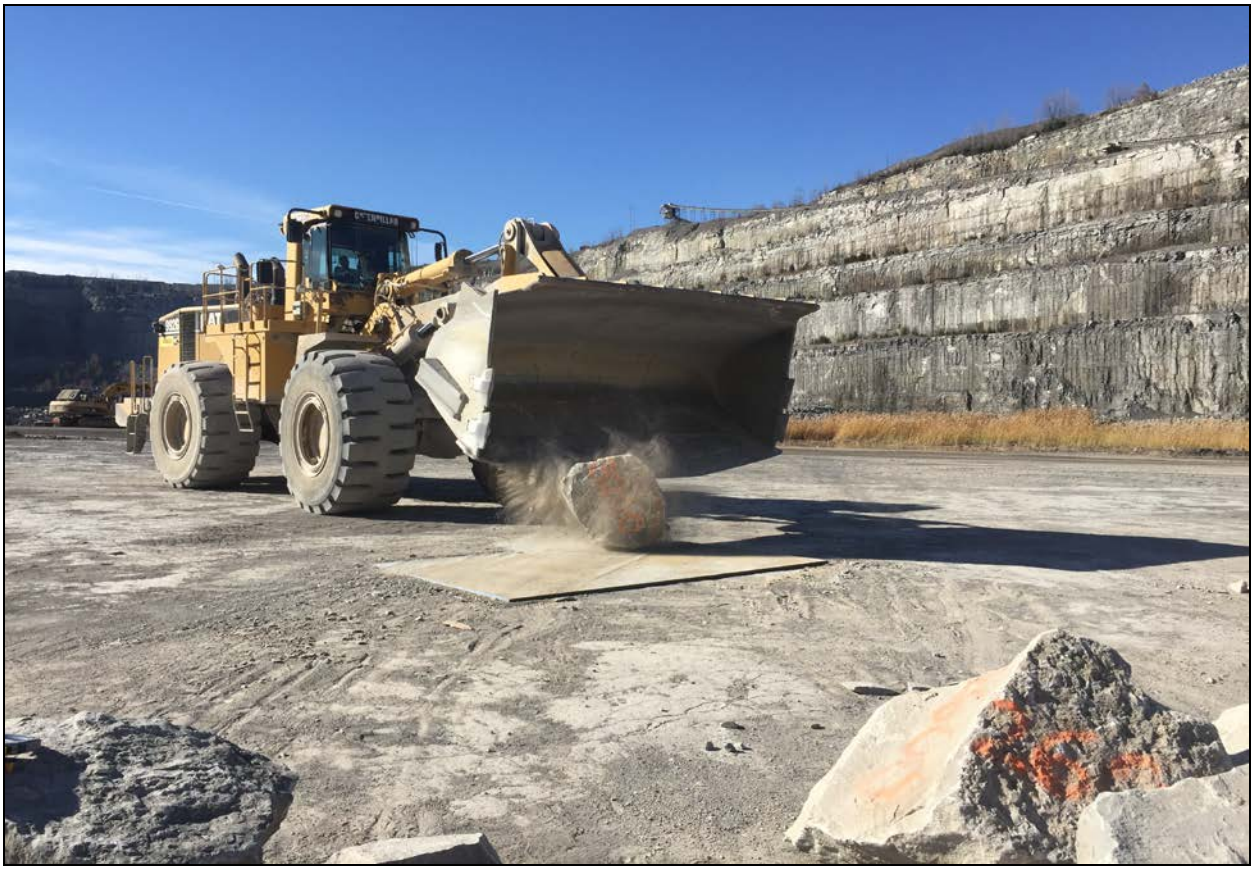

Figure 3: Quarry Drop Test

A total of twenty (20) armor stones were tested during the armor stone material validation tests. Both the Warsaw Ledge and the Fort Payne Ledge were approved for use on the project site based on the results of testing.

Pre-Construction Surveys (December 21, 2017 – January 22, 2018)
Francis Fortier, RPLS, a subcontractor for Patriot Construction, surveyed the project area prior to construction. A total of three (3) cross section lines on each breakwater and the terminal groin and one (1) centerline survey profile along each breakwater and the terminal groin were conducted between December 21, 2017 and January 17, 2018. The cross section lines extended fifteen (15) to twenty (20) feet landward and seaward of the breakwaters and terminal groin.

Pre-Construction surveys of the portion of the terminal groin covered by sand were not collected until January 22nd. The final pre-construction survey submittal included the full length of the groin centerline profile as well as three (3) cross sections of the eastern groin.

Armor Stone Installation – First Stone Shipment (January 11, 2018 – January 29, 2018)
Armor stone was delivered to the project area via rock barges shipped from the Vulcan Quarry in Grand Rivers, Kentucky. Draft (displacement) surveys were conducted on each of the rock barges in the LeBlanc Marine staging area in the Houma Navigation Canal (HNC) near Coco Marina. Draft surveys were conducted by LeBlanc Marine personnel and observed by APTIM personnel on January 11, 2018. A total of six (6) rock barges carrying a total of 8,807 tons of armor stone were sent in the first stone shipment. After the draft surveys were conducted, LeBlanc Marine crews light loaded the barges to prepare for installation on the project site.

LeBlanc Marine utilized two (2) tug boats to transport armor stone barges and excavator barges to the south side of Raccoon Island. Armor stone was relayed from the rock barge to the breakwaters via the excavator barge grapple. Typical armor stone installation is shown in Figure 4. Armor stone from the first shipment of rock was placed along the breakwater and groin crests as stakes had not yet been placed to denote the limits of installation. Approximately ten percent (10%) to fifteen percent (15%) of the armor stone delivered in the first shipment was observed to be deficient in size. Deficient armor stone was brought back to the staging area in the HNC and eventually shipped back to the quarry.

Empty barge draft (displacement) surveys were conducted in the HNC by LeBlanc Marine personnel and were observed by APTIM personnel on January 29, 2018. Four (4) of the six (6) barges were observed to be empty and carrying minimal water within the hull. Two (2) of the six (6) barges were observed to be partially loaded with deficient armor stone. A total of 7,586 tons of armor were installed from the first shipment of armor stone, and 1,221 tons were shipped back to the quarry.

The (approximate) quantities of rock were installed at the project site are provided in Table 1.

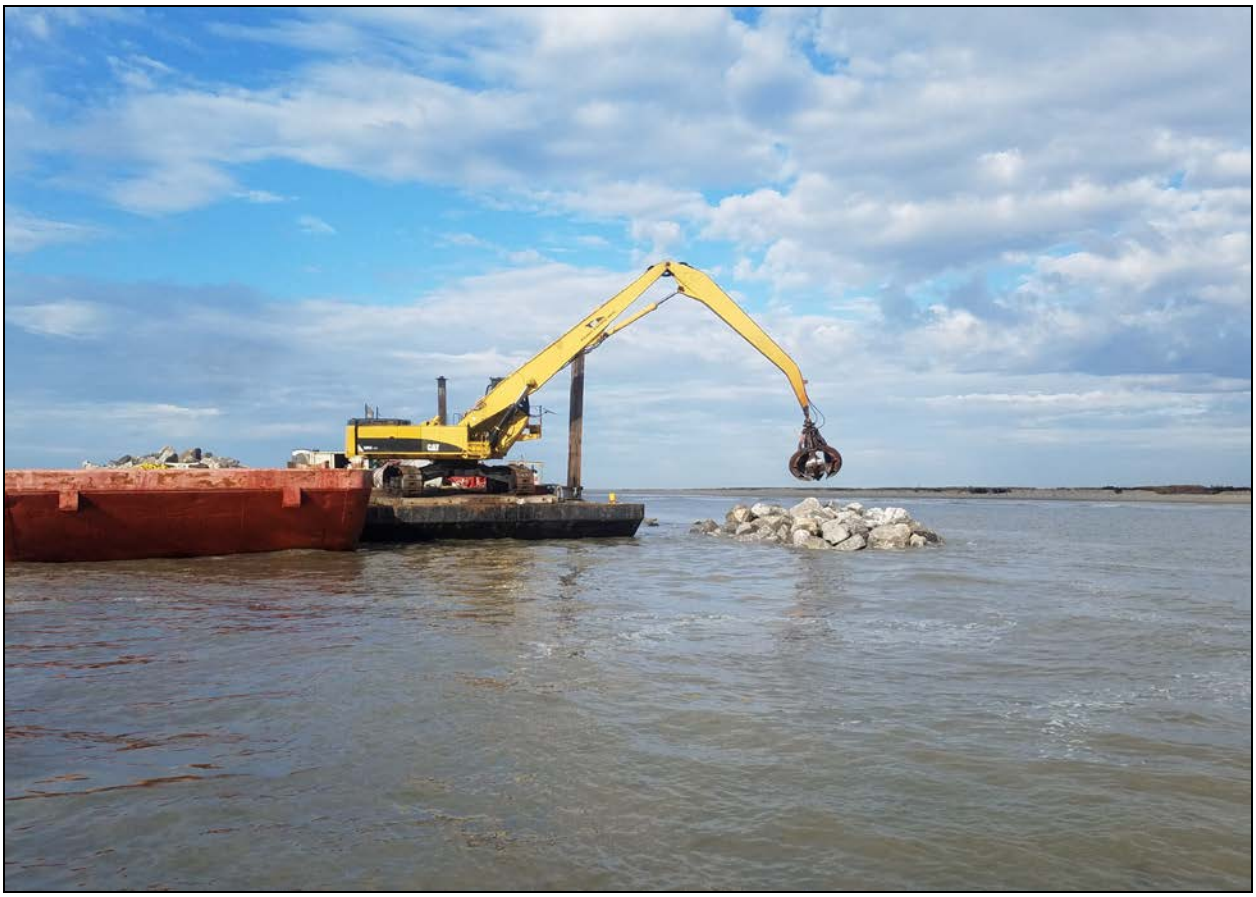

Figure 4: Typical Armor Stone Installation

Armor Stone Installation – Second Stone Shipment (February 1, 2018 – February 20, 2018)
The second shipment of armor stone was delivered to the project area via rock barges shipped from the Vulcan Quarry in Grand Rivers, Kentucky. Barge draft (displacement) surveys were conducted on each of the rock barges in the LeBlanc Marine staging area in the Houma Navigation Canal (HNC) near Coco Marina. Draft surveys were conducted by LeBlanc Marine personnel and observed by APTIM personnel on February 1, 2018. A total of six (6) rock barges were observed in the second shipment of armor stone. A majority of the armor stone shipment was determined to be too small for placement on the project site. After the initial draft surveys of the second shipment were conducted, LeBlanc Marine crews separated armor stone within project specifications from the deficient armor stone. A second draft survey was conducted on February 5, 2018, on five (5) barges containing armor stone within project specification limits. A total of 5,245 tons of armor stone (within the limits of the project specifications) were delivered to the project site in the second shipment. Figure 5 shows draft surveys being conducted on fully loaded barges.

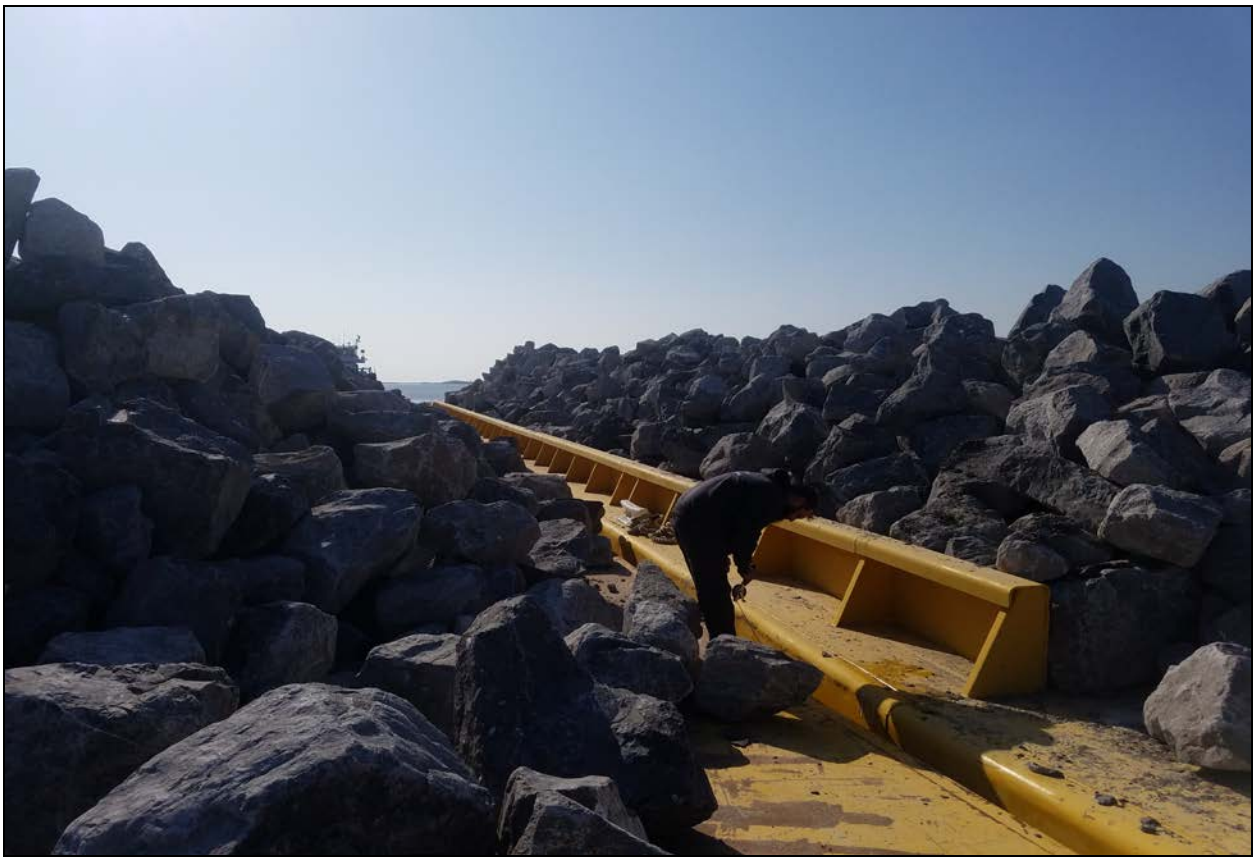

Figure 5: Draft Surveys on Fully Loaded Rock Barges

LeBlanc Marine utilized two (2) tug boats to transport armor stone barges and excavator barges to the south side of Raccoon Island. Armor stone was relayed from the rock barge to the breakwaters via the excavator barge grapple. Armor stone from the second shipment of rock (after sorting) was placed along the breakwater and groin crests as stakes had not been placed to denote the limits of installation. A small amount of the armor stone delivered to the project site was observed to be deficient. Deficient armor stone was brought back to the staging area in the HNC and eventually shipped back to the quarry.

Empty draft surveys were conducted in the HNC by LeBlanc Marine personnel and were observed by APTIM personnel on February 20, 2018. Four (4) of the five (5) barges were observed to be empty and carrying minimal water within the hull. One (1) of the five (5) barges was observed to be partially loaded with deficient armor stone. A total of 3,578 tons of armor were installed from the second shipment of armor stone, and 1,668 tons were shipped back to the quarry.

The (approximate) quantities of rock were installed at the project site are provided in Table 1.

Armor Stone Installation – Third Stone Shipment (March 14, 2018 – April 19, 2018)
The third shipment of armor stone was delivered to the project area via rock barges shipped from the Vulcan Quarry in Grand Rivers, Kentucky. Draft surveys were conducted on each of the rock barges in the LeBlanc Marine staging area in the Houma Navigation Canal (HNC) near

Coco Marina. Draft surveys were conducted by LeBlanc Marine personnel and observed by APTIM personnel on March 14, 2018. A total of five (5) rock barges carrying a total of 8,807 tons of armor stone were sent in the third armor stone shipment. The armor stone shipment was determined to be within the limits stated in the project specifications. After the draft surveys were conducted, LeBlanc Marine crews light loaded the barges to prepare for installation on the project site.

LeBlanc Marine utilized two (2) tug boats to transport armor stone barges and excavator barges to the south side of Raccoon Island. Armor stone was relayed from the rock barge to the breakwaters via the excavator barge grapple. Armor stone from the second shipment of rock (after sorting) was placed along the breakwater and groin crests as stakes had not been placed to denote the limits of installation. A small amount of the armor stone delivered to the project site was observed to be deficient. Deficient armor stone was brought back to the staging area in the HNC and eventually shipped back to the quarry.

Prior to the placement of armor stone on the western end of the eastern groin, Change Order 001 was executed. Per Change Order 001, LeBlanc Marine crews uncovered the existing groin armor stone prior to the placement of new armor stone. Armor stone was placed directly on the existing stone in these locations. Armor stone placed in this location was relayed to marsh buggies on the beach from the rock barges by the excavator barge.

Empty draft surveys were conducted at the Old River Control Structure in the Mississippi River by LeBlanc Marine personnel and were observed by APTIM personnel on April 19, 2018. Four (4) of the five (5) barges were observed to be empty and carrying minimal water within the hull. One (1) of the five (5) barges was observed to be partially loaded with deficient armor stone. An additional 2.5% of the tonnage observed was added to the empty draft survey totals to account for the difference in density of salt and fresh water. A total of 6,249 tons of armor were installed from the third shipment of armor stone and 300 tons were shipped back to the quarry.

The (approximate) quantities of rock were installed at the project site are provided in Table 1.

Post-Construction Surveys (April 10, 2018 – April 21, 2018)
Francis Fortier, RPLS, conducted as-built surveys of the eight (8) breakwaters and the eastern groin. A total of three (3) cross sections of each breakwater and the terminal groin and one (1) centerline survey profile along each breakwater and the terminal groin were conducted between April 10, 2018 and April 21, 2018. The cross section lines extended fifteen (15) to twenty (20) feet landward and seaward of the breakwaters and terminal groin. Final as-built drawings were submitted on May 7, 2018.

Final Inspection (April 25, 2018)
The final inspection was held on April 25, 2018. During the final inspection, it was determined that the project appeared to be substantially complete, and no issues were identified. All armor stone installed on the breakwaters appeared to have been interlocked with no major gaps or extreme variations in installed elevations. Substantial completion was issued pending the review of the as-built survey data. Figure 6 shows a portion of the completed Breakwater 2 as observed during the final inspection.

Figure 6: View of Breakwater 2 – Post-Construction

12. Problems Encountered / Lessons Learned

Weather Delays

The Contractor experienced an abnormally high number of weather delays during the Contract Time, and Change Order 002 was issued to address these weather delays. The General Provisions of the construction specifications state the estimated number of weather days expected for each month. High winds prevented LeBlanc Marine from working on-site in excess of the number of days stated in the specifications.

Due to the significant number of weather delays, it appeared that the contractor became more concerned with the quantity of stones installed on good weather days as opposed to the quality of the construction. This became apparent during construction observations when the contractor continuously placed more than one armor stone at a time as opposed to following specification TS-5.2.9 that states stones shall be placed one at a time.

We recommend that Contract Time be appropriately allocated at the time of bid to reflect previous as-built production rates, considering downtime. We recommend timing these projects

for summer or fall such that the Contractor is either afforded the best weather conditions available, or provided adequate Contract time to work in a less optimum conditions of the year.

We recommend future permits consider allowing the temporary installation of steel sheet pile cofferdams/breakwaters that may allow the contractor local protection from wave action and allow construction to continue during non-optimal conditions. Technical specifications should include language that directs the Contractor that temporary cofferdams/breakwaters MAY be required to support the construction/production rates. As always in Louisiana, clearance for oil and gas infrastructure would need to be checked prior to driving steel sheet.

More stringent survey requirements (minimum deviations from design/pre-con survey lines)
In many cases the surveyor did not survey the profiles shown in the plans but profiles that were offset a significant distance. Specifications should state a distance each survey profile shall be to the design alignment. While this did not affect the product, better survey data provides better information and monitoring data.

Language regarding uncovering of existing breakwater armor stones (for future rehab projects)
Change Order 001 was issued to facilitate the placement of armor stone on the terminal groin by removing existing sand and sediment overwash from the existing armor stone. It is not uncommon for sediment to accumulate/accrete near these structures over time assuming the structural integrity is maintained. Therefore, we recommend that language regarding uncovering of existing breakwater armor stones be incorporated into the original contract specifications for future rehab projects.

13. Construction Change Orders

Change Order 001 – April 11, 2018
Change Order 001 was issued to include an additional bid item to facilitate the placement of armor stone on the terminal groin by removing existing sand and sediment overwash from the existing armor stone. A lump sum (Bid Item No. 6) item was added to the contract via Change Order 001. An approximate width of thirty (30) to thirty-five (35) feet of the westernmost portion of the east groin was uncovered as a result of this change order. Excavated sand and sediment was placed seaward of the existing groin.

- Bid Item No. 6 – Removal of Sand Covering Existing Groin Armor Stone was added to the contract via Change Order 001. The addition of Bid Item No. 6 resulted in a Contract cost increase of $24,731.25 and in a Contract Time increase of seven (7) days.

The change order resulted in a net project cost increase of $24,731.25 from $1,662,856.00 to $1,687,587.25. The change order resulted in an increase in contract time of seven (7) days from 148 calendar days to 155 calendar days.

Change Order 002 – April 11, 2018
Change Order 002 was implemented to increase the project Contract time. Patriot Construction provided justification for weather delays that occurred during the months of January, February, and March. A total of seventeen (17) additional calendar days of Contract time were added via

this Change Order due to weather delays. In addition, the Contractor requested an additional seventeen (17) Contract days due to the delay between the Notice to Proceed (issued 11/01/2017) and the Pre-Construction Meeting (held on 11/17/2017). A total of thirty-four (34) additional calendar days were added to the Contract time via this Change Order.

The change order did not result in a net project cost increase or decrease. The change order resulted in a Contract Time increase of 34 days from 155 days to 189 days.

14. Construction Field Adjustments

Field Adjustment Report 001 – November 29, 2017
Field Adjustment 001 revised the project specifications to include Appendix V – Project Permits. The permits listed below were added to the project specifications. It was noted that any additional permit(s) required to complete the Work specified by the contract were to be obtained by the Contractor.

- Louisiana Department of Natural Resources Coastal Use Permit (P20160472)
- United States Army Corps of Engineers Permit (MVN 2004-4555-CY)
- Terrebonne Parish Consolidated Government Coastal Impact Certificate (No. 1379)
- Department of Wildlife and Fisheries Letter of Clearance (DWF ID# 2816016)

Field Adjustment Report 002 – December 12, 2017
Field Adjustment 002 amended the construction specifications to allow for a reduction in payment if material is lost between fully loaded barge displacement measurements and light-loaded displacement measurements. The Contractor indicated that fully loaded measurements will be conducted prior to light loading barges for transport to the construction site. Therefore, if a discrepancy (larger than five percent (5%)) in barge displacement surveys were to be observed, a deduction in payment would be implemented for materials lost.

Field Adjustment Report 003 – April 26, 2018
Field Adjustment Report 003 discontinued daily reports as the project had reached substantial completion. The final inspection was conducted on April 25th, and it was determined that the project had reached substantial completion.

15. Requests for Interpretation

Request for Interpretation 001 – November 28, 2017
Request for Interpretation 001 requested clarification regarding subcontracting the superintendent work for the Contract. Patriot requested that the superintendent work be subcontracted to LeBlanc Marine who would be conducting the complete scope of work of the project. RFI 001 also requested permission to have the subcontractor (LeBlanc Marine) communicate directly with the Owner and Owner's representatives. The RFI was granted by the Owner.

Request for Interpretation 002 – March 12, 2018
Request for Information 002 requested clarification regarding construction methodology of the portion of the terminal groin covered by sand and sediment overwash. The Owner and Engineer

agreed that the sand and sediment overwash from the terminal groin should be removed to facilitate the placement of armor stone. It was agreed that an approximate width of thirty (30) to thirty-five (35) feet of the westernmost portion of the east groin should be uncovered. Excavated sand and sediment should be placed seaward of the existing groin. Bid Item No. 6 was added via Change Order 002 to address this issue.

Request for Interpretation 003 – April 19, 2018
Request for Interpretation 003 requested a no-cost time extension for the project due to weather delays and due to a time lapse between the Notice to Proceed and the Pre-Construction Meeting. A total of seventeen (17) calendar days were requested due to weather delays and a total of seventeen (17) calendar days were requested due to the lapse of time between the Notice to Proceed and the Pre-Construction Meeting. The Owner and Engineer granted the contract time increase request via Change Order 002.

16. Pipeline and Other Utility Crossings

No pipeline infrastructure or utility crossings are known to be in the vicinity of the project area.

17. Safety and Accidents

No major safety incidents or accidents occurred during the project.

18. Significant Construction Dates

Table 8
Significant Construction Dates

Construction Item	Date
Bid Opening	September 13, 2017
Notice to Proceed	November 1, 2017
Pre-Construction Conference	November 17, 2017
Signed Purchase Order	February 8, 2018
Vulcan Quarry Drop Test	December 1, 2017
Pre-Construction Surveys (Completed)	January 22, 2018
Start of Armor Stone Installation (1st Rock Shipment)	January 11, 2018
Completion of Armor Stone Installation (1st Rock Shipment)	January 29, 2018
Start of Armor Stone Installation (2nd Rock Shipment)	February 2, 2018
Completion of Armor Stone Installation (2nd Rock Shipment)	February 20, 2018
Start of Armor Stone Installation (3rd Rock Shipment)	March 14, 2018
Completion of Armor Stone Installation (3rd Rock Shipment)	April 19, 2018
Post-Construction Surveys (Completion)	April 21, 2018
Final Inspection	April 25, 2018
Substantial Completion	April 25, 2018
Final Acceptance	April 26, 2018

Identified Other Submittals:

Appendix A	-	11”x17” As-built Drawings (attached & on CD, pdf format) Pre- and Post-Construction Survey Data (on CD, ASCII format)
Appendix B	-	Invoice Related Correspondence (on CD, pdf format)
Appendix C	-	General Correspondence (on CD, pdf format)
Appendix D	-	Change Orders (attached and on CD, pdf format)
Appendix E	-	Field Adjustment Reports (attached and on CD, pdf format)
Appendix F	-	Requests for Interpretation (on CD, pdf format)
Appendix G	-	LeBlanc Marine Daily Quality Control Reports (on CD, pdf format)
Appendix H	-	LeBlanc Marine Submittals (on CD, pdf format)
Appendix I	-	APTIM Daily Observation Reports (on CD, pdf format)
Appendix J	-	APTIM Field Notes (on CD, pdf format)
Appendix K	-	Construction Meeting Minutes (on CD, pdf format)
Appendix L	-	Permit Sketches (on CD, pdf format)
Appendix M	-	Construction Plans and Specifications (on CD, pdf format)

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