

**HUMISTON
& MOORE
ENGINEERS**

COASTAL
ENGINEERING DESIGN
AND PERMITTING

5679 STRAND COURT
NAPLES, FLORIDA 34110
FAX: 239 594 2025
PHONE: 239 594 2021

April 17, 2023
(Proposal valid for 120 days.)

Andrew Miller, Principal Project Manager
Coastal Zone Management (CZM)
Collier County Government
2685 South Horseshoe Drive Unit 103
Naples, FL 34104

**Re: Proposal for Collier County Beaches and Inlets Annual Monitoring for 2023
Collier County Contract 18-7432-CZ; HM File No 29-018.2023Beach-Monitor**

Dear Andy:

Enclosed is a proposal for the Collier County Beaches, Wiggins Pass Inlet, Doctors Pass Inlet, South Marco Beach, and Doctors Pass Erosion Control Structures (includes survey) monitoring reports for 2023. The completion date for all work is estimated to be 365 days from the date of the Notice to Proceed. Rectified aerial images acquired for 2023, provided by the Collier County Property Appraiser's Office, are to be submitted to the Department of Environmental Protection (DEP) by Humiston and Moore Engineers (HM) as part of the work described below for all projects and an aerial image book provided to CZM in pdf format for online posting.

The monitoring report and survey for Central Marco, conducted biennially, is not required for 2023, and the borrow area for South Marco is also not required. These items are not included in the scope of work for the 2023 monitoring.

The monitoring summary report for the Collier Beach survey will be prepared based on the post-construction survey for the Collier County Emergency Berm project, and the Post-lan survey conducted by APTIM. The berm project survey will be used to represent the upland portion of the beach profile (above MHW), and the Post-lan survey for the offshore portion of the profile (below MHW).

The monitoring summary reports for Wiggins, Doctors and South Marco will be prepared based on the solely on the Post-lan survey conducted by APTIM. This survey does not include the half monuments from R-10 to R-22, the MHWL east of R-17, R-60+518, R-61+408, R-61+816, G-1, K-1 and K-2. The associated reports will be modified accordingly and alternative analysis provided as applicable. The Doctors Pass Erosion Control Structures Report will be based on a survey conducted by Sea Diversified Inc. (SDI).

Task 1 Wiggins Pass – Final Monitoring Report

Prepare and submit the annual monitoring summary report for the Wiggins Pass Navigation Channel Expansion and Maintenance Dredging Project based on the Post-lan survey conducted by APTIM. The monitoring summary includes inlet/beach profiles, inlet volume change from previous monitoring surveys, information relative to the 2022 dredging, other information in compliance with the DEP monitoring requirements, comments from CZM staff after review of draft summary, and applicable recommendations.

Task 1 Wiggins Pass Monitoring Report (H&M).....\$ 12,688 TM

Deliverable: One electronic copy of the Final Monitoring Report.

Task 2 Doctors Pass - Final Monitoring Report

Prepare and submit the annual monitoring summary report for Doctors Pass Maintenance Dredging Project based on the Post-lan survey conducted by APTIM. The monitoring summary includes inlet/beach profiles, inlet volume change from previous monitoring surveys, information relative to the 2022 dredging, other information in compliance with the DEP monitoring requirements, comments from CZM staff after review of draft summary, and applicable recommendations.

Task 2. Doctors Pass Final Monitoring Report (H&M).....\$ 9,318 TM

Deliverable: One electronic copy of the Final Monitoring Report.

Task 3 South Marco Beach- Final Monitoring Report

Prepare and submit the annual monitoring summary report for South Marco Beach Nourishment Project based on the Post-lan survey conducted by APTIM. The monitoring summary includes beach profiles, volume change from previous monitoring surveys, other information in compliance with the DEP monitoring requirements, comments from CZM staff after review of draft summary, and applicable recommendations. This survey scope does **not** include the Caxambas Pass borrow area, not required by DEP in 2023.

Task 3 South Marco Beach Final Monitoring Report (H&M).....\$ 7,601 TM

Deliverable: One electronic copy of the Final Monitoring Report.

Task 4 Doctors Pass Structures Survey and Final Monitoring Report

Provide the annual monitoring report for the Doctors Pass Erosion Control Structures (ECS) Project consistent with the monitoring plan approved by the DEP. This scope of work is based on the survey of DEP monuments R58A-400 south to R-64 (17 profiles)*.

- Survey is scheduled to be completed by October 2023 pending unforeseen conditions such as poor weather conditions.
- A Final Monitoring Report will be submitted to CZM and DEP within 90 days after the completion of the survey.

Task 4a. Doctors Pass ECS Survey (SDI).....\$ 9,900 LS

Task 4b Doctors Pass ECS Initial and Final Monitoring Report (H&M).....\$ 8,894 TM



Total Task 4 Subtotal (SDI + H&M)\$ 18,794

The final monitoring summary includes beach profiles, shoreline/volume change from the previous monitoring surveys, other information in compliance with the DEP monitoring requirements, comments from CZM staff after review of the draft summary, and applicable recommendations.

Deliverable: One electronic copy of the Final Monitoring Report.

*Includes beach profiles R58A-400, R58A-300, R58A-150, R58A, R58A+150, R58A+300, R58A+425, R58, R58+150, R58+300, R58+600, and R59 to R64.

Task 5 2023 Aerial Image Book

Prepare an updated aerial image book for the Collier County Beaches ranging from DEP reference monument R-1 south to R-89 and from Hideaway Beach reference monument H-16 including the entrance to Collier Bay south to DEP reference monument R-148 including Caxambas Pass. The monument locations will be overlaid along with the names of existing structures as noted in the 2022 book. The rectified images will be the latest available from the County Appraiser’s Office. The ECL, latest MHWL, and vegetation line will be shown along with the distance from each to the 2003 Baseline.

Task 5. Aerial Image Book (H&M)..... \$ 3,603 TM

Deliverable: One electronic copy of the final Aerial Image Book.

Task 6 Collier Beach- Final Monitoring Report

Prepare and submit the annual monitoring summary for Collier Beach Nourishment Project consistent with the monitoring plan approved by the DEP. The scope of work consists of DEP monuments R-17 to R-84 or portion thereof as determined by CZM. Collier County post-construction Emergency Berm Project survey data to be provided by CZM.

- An initial shoreline/volume change summary will be submitted to CZM 30 days after receipt of the post-construction survey data for the Collier County Emergency Berm Project..
- A Final Monitoring Report will be submitted to DEP & CZM 90 days after the receipt of the aforementioned survey.

The initial summary will include beach profiles, and shoreline/volume change from the previous monitoring surveys. The final monitoring analysis and report includes CZM staff comments after review of initial summary, beach profiles, shoreline/volume change from the previous monitoring survey, as well as from the most recent nourishment project (Vanderbilt 2021, Park Shore 2019, North Naples 2020 and 2022, and Naples 2021), beach width and comparison to the *Design Standard*, the historical beach width charts, and applicable recommendations.

Task 6. Collier Beach Initial and Final Monitoring Report (H&M).....\$ 26,528 TM

Deliverable: One electronic copy of the Initial Monitoring summary; one electronic and two hardcopies of the Final Monitoring Report.

Total (SDI + H&M) \$ 78,532 Tasks 1 thru 6



Tasks will be billed on a time and materials basis, unless otherwise noted. The budgets for these tasks may therefore be considered as not-to-exceed amounts with the understanding that in the event regulatory requirements or requests from County staff result in Additional Services exceeding the estimated budget amounts, a budget amendment will be requested.

Please call if you have any questions.

Sincerely yours,

HUMISTON & MOORE ENGINEERS

A handwritten signature in black ink, appearing to read "Brett D. Moore", with a long horizontal flourish extending to the right.

Brett D. Moore, P.E.
President

Collier County Beaches and Inlets Annual Monitoring 2023 Contract 18-7432-CZ

Estimated Summary

SUMMARY BREAKDOWN BY TASK					
Task 1	Wiggins Pass Final Monitoring Report			\$12,688.00	
Task 2	Doctors Pass Final Monitoring Report			\$9,318.00	
Task 3	South Marco Final Monitoring Report			\$7,601.00	
Task 4	Doctors Pass - Structures Survey and Final Monitoring Report			\$18,794.00	
Task 5	2022 Aerial Image Book			\$3,603.00	
Task 6	Collier Beach Final Monitoring Report			\$26,528.00	
				\$78,532.00	
SUMMARY BREAKDOWN BY SUB-TASK					
Task 1	Wiggins Pass Final Monitoring Report			\$12,688.00	TM \$12,688
Task 2	Doctors Pass Final Monitoring Report			\$9,318.00	TM \$9,318
Task 3	South Marco Final Monitoring Report			\$7,601.00	TM \$7,601
Task 4a	Doctors Pass Structures Survey			\$9,900.00	LS
Task 4b	Doctors Pass Structures Final Monitoring Report			\$8,894.00	TM \$18,794
Task 5	2023 Aerial Image Book			\$3,603.00	TM \$3,603
Task 6	Collier Beach Final Monitoring Report			\$26,528.00	TM \$26,528
SUMMARY					\$78,532
	Sea Diversified Survey				9,900.00 (LS)
	Title	Rate	Hours		
PRN2	Principle	\$231	49		\$11,319
SDS	Engineer	\$130	242.5		\$31,525
SIN	Scientist/Geologist	\$115	110		\$12,650
SRT	Senior Technician	\$103	71		\$7,313
TEC	Technician	\$83	56		\$4,648
CAD	Cadd Technician	\$107	11		\$1,177

Humiston & Moore Engineers	\$68,632.00
Sea Diversified, Inc.	\$9,900.00
TOTAL	\$78,532.00



Date: April 17, 2023

Task 1 Wiggins Pass Final Monitoring Report

HM (T&M) \$12,688.00

		RATE/UNIT	HOURS/QT	COST	MARKUP	AMOUNT
PRN2	Principle	231	8			1,848.00
SDS	Engineer	130	40			5,200.00
SIN	Scientist/Geologist	115	20			2,300.00
SRT	Senior Technician	103	21			2,163.00
CAD	Cadd Technician	107	11			1,177.00

\$12,688.00 (TM)

Task 2 Doctors Pass Final Monitoring Report

HM (T&M) \$9,318.00

		RATE/UNIT	HOURS/QT	COST	MARKUP	AMOUNT
PRN2	Principle	231	8			1,848.00
SDS	Engineer	130	53.5			6,955.00
SRT	Senior Technician	103	5			515.00

\$9,318.00 (TM)

Task 3 South Marco Final Monitoring Report

HM (T&M) \$7,601.00

		RATE/UNIT	HOURS/QT	COST	MARKUP	AMOUNT
PRN2	Principle	231	4			924.00
SIN	Scientist/Geologist	115	50			5,750.00
SRT	Senior Technician	103	9			927.00

\$7,601.00 (TM)

Task 4 Doctors Pass Structures Survey and Final Monitoring Report

Survey SDI (LS) 9,900.00 \$9,900.00 (LS)
HM (T&M) 8,894.00

		RATE/UNIT	HOURS/QT	COST	MARKUP	AMOUNT
PRN2	Principle	231	6			1,386.00
SDS	Engineer	130	53			6,890.00
SRT	Senior Technician	103	6			618.00

\$8,894.00 (TM)

Total: **\$18,794.00**

Task 5 2023 Aerial Image Book

HM (T&M) \$3,603.00

		RATE/UNIT	HOURS/QT	COST	MARKUP	AMOUNT
PRN2	Principle	231	3			693.00
SDS	Engineer	130	16			2,080.00
TEC	Technician	83	10			830.00

Total: **\$3,603.00** (TM)

Task 6 Collier Beach Final Monitoring Report

HM (T&M) \$26,528.00

		RATE/UNIT	HOURS/QT	COST	MARKUP	AMOUNT
PRN2	Principle	231	20			4,620.00
SDS	Engineer	130	80			10,400.00
SIN	Scientist/Geologist	115	40			\$4,600.00
SRT	Senior Technician	103	30			\$3,090.00
TEC	Technician	83	46			3,818.00

(TM)

Total: **\$26,528.00**

	Title	Rate	Hours			
PRN2	Principle	\$231	49			\$11,319.00
SDS	Engineer	\$130	242.5			\$31,525.00
SIN	Scientist/Geologist	\$115	110			\$12,650.00
SRT	Senior Technician	\$103	71			\$7,313.00
TEC	Technician	\$83	56			\$4,648.00
CAD	Cadd Technician	\$107	11			\$1,177.00

(TM)

Humiston & Moore Engineers \$68,632.00

TOTAL H&M \$68,632.00

SDI Only \$9,900.00

Grand Total \$78,532.00



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SCHEDULE B-ATTACHMENT 1
RATE SCHEDULE

Title	Hourly Rate
Principal	\$231
Senior Project Manager	\$203
Project Manager	\$160
Senior Engineer	\$177
Engineer	\$130
Senior Inspector	\$126
Inspector	\$93
Senior Planner	\$150
Planner	\$120
Senior Designer	\$140
Designer	\$105
Environmental Specialist	\$120
Senior Environmental Specialist	\$167
Scientist/Geologist	\$115
Senior Scientist/Geologist	\$153
Marine Biologist/Hydrogeologist	\$120
Senior Marine Biologist/Hydrogeologist	\$145
Senior GIS Specialist	\$155
GIS Specialist	\$115
Clerical/Administrative	\$73
Senior Technician	\$103
Technician	\$83
Surveyor and Mapper	\$125
CADD Technician	\$107
Survey Crew - 2 man	\$145
Survey Crew - 3 man	\$180
Survey Crew - 4 man	\$215
Senior Architect	\$160
Architect	\$125

The above hourly rates are applicable to Time and Materials task(s) only. The above list may not be all inclusive. Hourly rates for additional categories required to provide particular project services shall be mutually agreed upon by the County and firm, in writing, on a project by project basis, as needed, and will be set forth in the Work Order agreed upon by the parties.

Grant Funded: The above rates are for purposes of providing estimate(s), as required by the grantor agency.

* * * * *

Page 2 of 3

First Amendment to Agreement # 18-7432-CZ
Humiston & Moore Engineers, P.A.

CAO

CAO



Sea Diversified, Inc.

160 Congress Park Drive, Suite 114

Delray Beach, Florida 33445

Phone: 561-243-4920

www.SeaDiversified.com

February 23, 2023

Mr. Steve Foge, P.E.
Humiston & Moore Engineers
5679 Strand Court, Suite 110
Naples, Florida 34110

Sent via electronic mail 02/23/2023
SF@HumistonandMoore.com
(Original February 16, 2023)

**Re: Proposal / Agreement for Professional Services
Collier County 2023 Physical Monitoring Survey
Doctors Pass Structures Collier County, Florida
Sea Diversified P.N. 23-3022**

Dear Mr. Foge:

In accordance with your request, Sea Diversified, Inc. (SDI) is pleased to submit the following proposal for professional services. The scope of work shall include onshore/offshore beach profile surveys of Doctors Pass Structures, Collier County Florida. In accordance with your summary of scope (Attachment A) provided on February 13, 2023, the 2023 monitoring survey effort shall encompass the following:

Doctors Pass Structures Beach & Offshore Profiles

Beach profiles at R58A-400, R58A-300, R58A-150, R58A, R58A+150, R58A+300, R58A+425, R-58, R58+150, R58+300, R58+600, and R-59 to R-64, totaling 17 profiles

General:

SDI shall provide supervision, field / office support staff and equipment to perform the scope of work described, herewith. All work shall be conducted to the highest level of industry standards and under the responsible charge of a Professional Surveyor and Mapper registered in the State of Florida. All work shall meet or exceed the Standards of Practice (Standards) set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 5J-17, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes, and in compliance with the Florida Department of Environmental Protection (FDEP) Bureau of Beaches and Coastal Systems Monitoring Standards for Beach Erosion Control Projects, Sections 01000 and 01100 (Updated October 2014). If time permits, deviations from the scope of work shall be addressed via formal approved addendum to the executed Agreement for Professional Services.

Horizontal and Vertical Data:

Horizontal Datum: Feet, relative to the Florida State Plane Coordinate System, East Zone, North American Datum of 1983 (NAD83)

Vertical Datum: Feet, relative to the North American Vertical Datum of 1988 (NAVD88)

Horizontal / Vertical Control Verification

SDI will verify the horizontal and vertical position of all found and used monuments for the survey. Horizontal and vertical positions will be verified via Real-Time Kinematic GPS procedures. In the event vertical obstructions prohibit the use of GPS, conventional methodologies will be employed.

Temporary control points (TBM's) will be set in the event a monument cannot be readily found. As practical, the TBM will be set at the reference monument location. If the specified location is not practical, the TBM will be set at a more suitable location either landward or seaward along the specified profile azimuth. H&M shall be notified of any missing monuments and shall be provided with the horizontal and vertical position of all TBM's.





Onshore Profile Data Collection - Topographic

Onshore profile data collection shall extend from the FDEP profile control monument seaward to approximate wading depth or as required to overlap the offshore profile data a minimum distance of fifty (50) feet. Profile data collection shall extend landward to the seawalls or fifty (50) feet landward of the five-foot (+5.0') NAVD88 contour line and shall include location of the seaward vegetation line.

In the event there is a physical barrier on line between the beach and the monument, every reasonable attempt shall be made to extend the survey beyond the barrier to the reference monument position. It is understood that certain physical barriers may be considered impassible such as large buildings, private residences with difficult access, waterbodies, mangroves or other heavy vegetation requiring line clearing. At the discretion of the surveyor, data collection will be terminated at the first physical barrier if deemed impassible using practical means of extending the survey landward. Profiles terminated due to impassible barriers will be noted in the field books.

Profile data will be collected using either conventional differential leveling or Real-time Kinematic Differential Global Positioning techniques. Data points will be collected at a maximum interval of twenty-five (25) feet and at all grade breaks (exceeding one foot) and material changes along the profile. In the event the profile control monument is located more than three hundred (300) feet landward of the vegetation line, data points shall be extended to intervals of one hundred (100) feet from two hundred (200) feet landward of the approximate vegetation line to the monument location. The reference monument shall be recorded as range 0.0 along the profile with positive ranges extending seaward of the monument and negative ranges extending landward of the monument.

Offshore Profile Data Collection - Bathymetric

Bathymetric profile data shall be collected as close to high tide as practical and shall extend landward to a depth that overlaps the onshore portion of the survey a minimum distance of fifty (50) feet. Bathymetric profile data collection shall extend seaward to negative fifteen (-15) feet NGVD29 contour (approximately -16.3' NAVD88) at Doctors Pass Structures, or two thousand (2,000) feet from the shoreline, whichever is the greater distance. Bathymetric data collection shall occur as close to the time of the onshore topographic survey as practical, which shall not exceed seven (7) days of time difference between the two (2) survey events. Maximum wave height during the bathymetric data collection shall be three (3) feet.

Bathymetric data shall be collected using an automated hydrographic system comprised of a survey launch equipped with a marine grade sounder, differential global positioning system and computer-based navigation / data collection system, and when deemed necessary may be interfaced with a DMS-05 Motion Sensor System. The motion sensor will be employed as necessary to reduce the effects of vessel heave, pitch and roll during data collection. The sounder shall be calibrated via bar checks prior to the start of the survey. Prior to the start of the survey a tide staff or gauge will be established in proximity to the project for recording water levels. The tide staff or gauge will be set relative to published control in the vicinity of the project.

Digital Ground Photography

Digital photographs shall be taken at approximate mid-beach along each profile line. Three (3) photographs shall be captured, one each shore-parallel north and south of the profile and one towards the monument location. An additional photograph of the monument or TBM shall be taken with sufficient clarity to read the monument stamping. Digital images shall be provided to H&M in .jpg format at a minimum 640 x 480 resolution.





Data Processing and Final Deliverables

Upon completion of field survey activities, data will be edited and reduced to the project datum and translated to an x,y,z, ASCII format for submittal to H&M. H&M will be provided the following deliverables:

- 1. Survey report certified by a Professional Surveyor and Mapper
2. Description of all monuments and TBM's used for the survey, including identification, stamping, coordinates, elevations and profile azimuths. Control description shall be provided in both hardcopy and digital formats (ASCII and Excel), as applicable
3. Bathymetric data and / or profile data in ASCII x,y,z format
4. Digital photographs in .jpg format with appropriate labeling
5. Metadata files

Cost:

17 Beach Profiles:

\$ 9,900.00 Lump Sum

Survey Schedule:

- Doctors Pass Control Structures - Due Oct. 2023.

Should you have questions or require additional information please do not hesitate to contact us at your convenience. We appreciate this opportunity to assist you with this project and look forward to hearing from you soon.

Best Regards,

Approved this ____ day of _____, 2023

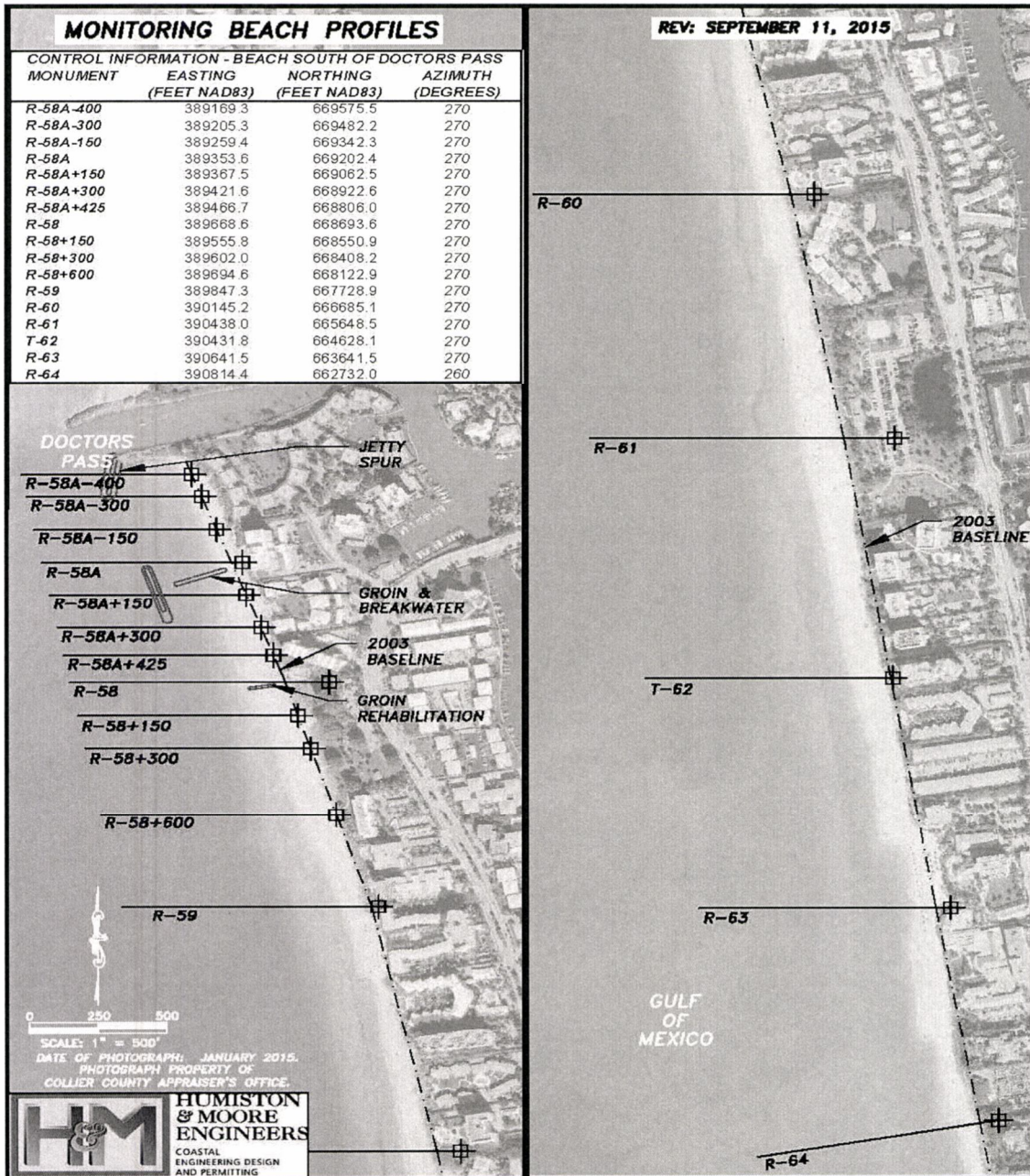
William T. Sadler Jr., P.E., P.S.M.
President, Sea Diversified, Inc.

Mr. Steve Foge, P.E. or Authorized
Humiston & Moore Engineers Representative





Attachment "A"





Direct Select Form

Request Date	Contract No.	Proposal Cost Estimate	Construction Cost Estimate
03.21.2023	18-7432-CZ	\$52,004	N/A
Requested By <i>(Use name as it appears in Outlook):</i> Andrew Miller		Division / Department: Capital Project Planning, Impact Fees, & Program Management	
Administrative Agent <i>(If different from Requestor):</i>			
Library Category: Coastal Engineering		Vendor Name: Humiston & Moore Engineers, P.A.	
Work Assignment Title: 2023 Collier County Beaches and Inlets Annual Monitoring			
Description of Requested Services: Permit-required annual beach and inlet monitoring and report.			
Justification: <i>(Select all that apply and explain below)</i>		<input checked="" type="checkbox"/> Past experience with project <input type="checkbox"/> Continuation of previous work assignment <input type="checkbox"/> Unique qualifications <input type="checkbox"/> Other	
Comments / Explanation of Direct Select: Humiston and Moore performs this work annually, see PO # 4500215649 and is best suited to continue based on their experience and their knowledge of the County's requirements.			
Requestor: Andrew Miller		Signature: MillerAndrew	<small>Digitally signed by MillerAndrew Date: 2023.03.22 07:50:09 -04'00'</small> Date:
Division Director: Beth Johnssen		Signature: Johnssen_b	<small>Digitally signed by Johnssen_b Date: 2023.03.22 09:58:23 -04'00'</small> Date:
Procurement Director: Sarah Hamilton		Signature: SarahHamilton	<small>Digitally signed by SarahHamilton Date: 2023.03.24 10:35:27 -04'00'</small> Date:

Return this completed form to: ProcurementSrvcsReq@colliercountyfl.gov.

Please be sure to attach the fully approved form to the requisition in SAP.

