WORK ASSIGNMENT #1 CHANGE ORDER #1 DATE:2/3/2025

PROJECT #6116570 - DESOTO BRIDGE WATERMAIN REPLACEMENT

PARAMETRIC SUB-BOTTOM PROFILING & MULTI-BEAM BATHYMETRIC SURVEY OF DESOTO BRIDGE - WATER MAIN

Pursuant to the Manatee County, Florida, Agreement NO. 24-TA005049JH for Professional Design Services Desoto Bridge Watermain Replacement, entered into by and between MANATEE COUNTY, a political subdivision of the State of Florida, hereinafter referred to as "COUNTY" and Kimley-Horn and Associates, hereinafter referred to as "CONSULTANT," a determination has been made by COUNTY that there is a need for the performance of or rendering of services by CONSULTANT of a certain "Work Assignment" under the purview of said Agreement, and CONSULTANT is hereby authorized to perform or render the Services described as follows:

TITLE OF THE PROJECT: Professional Design Services Desoto Bridge Watermain Replacement

Work Assignment Change Order No. 1 – Parametric Sub-Bottom Profiling & Multi-Beam Bathymetric Survey for Manatee and Cortez Bridges – Water Main

PHASES AND/OR TASKS OF PROFESSIONAL SERVICES AUTHORIZED:

CONSULTANT shall perform Tasks as more specifically detailed in Attachments 1 through 3 as follows:

Attachment 1: Scope of Services
Attachment 2: Hourly Fee Schedule
Attachment 3: Schedule

WORK ASSIGNMENT #1 CHANGE ORDER #1 DATE:2/3/2025

PROJECT #6116570 - DESOTO BRIDGE WATERMAIN REPLACEMENT

PARAMETRIC SUB-BOTTOM PROFILING & MULTI-BEAM BATHYMETRIC SURVEY OF DESOTO BRIDGE - WATER MAIN

Compensation to CONSULTANT for rendering all the above identified Services shall not exceed $65,610.00. Compensation for the Tasks shall not exceed the amounts set forth as follows:

TASK	TASK DESCRIPTION	Original Contract Total	Change Order No. 1	Revised Contract Total
1	Project Management/Meetings	$ 63,260.00		$ 63,260.00
2	Survey and SUE	$ 46,753.42	$ 65,610.00	$ 112,363.42
3	Geotechnical Services	$ 78,166.10		$ 78,166.10
4	Public Outreach	$ 41,335.20		$ 41,335.20
5	Design Documents and Permitting	$ 463,350.00		$ 463,350.00
6	FDOT Utility Adjustment Plans and Permitting	$ 60,650.00		$ 60,650.00
7	Bidding and Construction Phase Services for Desoto Bridge Water Main Crossing Plans	$ 115,875.00		$ 115,875.00
8	Bidding and Construction Phase Services for FDOT Utility Adjustment Plans	$ 22,200.00		$ 22,200.00
	TOTAL COST	$ 891,589.72	$ 65,610.00	$ 957,199.72

COUNTY may authorize, in writing, in advance, adjustments in the compensation for particular tasks established above, provided such adjustments do not exceed the maximum compensation authorized for this Work Assignment.

Partial compensation may be requested on a monthly basis for unit prices and actual hours incurred but not to exceed the percentage of the Task completed.

WORK ASSIGNMENT #1 CHANGE ORDER #1 DATE:2/3/2025

PROJECT #6116570 - DESOTO BRIDGE WATERMAIN REPLACEMENT

PARAMETRIC SUB-BOTTOM PROFILING & MULTI-BEAM BATHYMETRIC SURVEY OF DESOTO BRIDGE - WATER MAIN

CONSULTANT agrees to perform the Services in accordance with this Agreement No. 24-TA005049JH and this Work Assignment dated 6/4/2024.

Kimley-Horn and Associates, Inc.

By:_____

Print Name:__Jordan Walker, P.E.

Title:___Associate

Date:___2/3/2025

MANATEE COUNTY, a political
subdivision of the State of Florida

Brent Sargent, CPPO, CPPB, NIGP-CPP, FCCM, FCCN
Purchasing Official

Date:5/5/2026

Project #6116570 – DeSoto Bridge Watermain Replacement

Change Order No. 1 – Parametric Sub-Bottom Profiling & Multi-Beam Bathymetric Survey of Desoto Bridge – Water Main

Attachment No. 1: Scope of Services

KIMLEY-HORN AND ASSOCIATES, INC.
February 4, 2026

OBJECTIVE

Kimley-Horn and Associates, Inc., herein referred to as "Consultant," shall perform the following engineering services for Manatee County, herein referred to as "County," associated with the Desoto Bridge Water Main Replacement. The Project consists of replacing the 16-inch water main on the east side of the existing Desoto Bridge, outside of the future proposed FDOT bridge alignment (still to be determined).

The County has requested that Kimley-Horn provide an additional scope of services for Professional Services for the parametric sub-bottom profiling & multi-beam bathymetric survey of Desoto Bridge water main.

TASK II - SURVEY

1. The Consultant's Subconsultant (Hyatt Survey Services, Inc.) will perform the Scope of Services provided in Appendix A. The technical specifications contained within the Scope of Work provided by the County shall supersede those contained within other parts of the agreement if a disagreement in terms arise.

2. Consultant will perform a kickoff meeting with the County and the Consultant's sub-consultant prior to performing the Sub-bottom Profiling and Multi-Beam Bathymetric Survey of the water main and force main.

3. Consultant will manage subconsultant during the performance of their work doing the Sub-bottom Profiling and Multi-Beam Bathymetric Survey of the water main and force main.

PROJECT WORK PLAN PERSON-HOUR ESTIMATE

DESOTO BRIDGE WATER MAIN REPLACEMENT - Change Order

Project Name: No. 1
Project Number: 6116570
Date Prepared: 2/3/2026
Estimated By: Jordan Walker, P.E.

KHA Task # Subtask ID Number	**KHA Task Name** Subtask Name/Description	**Principal**	**Sr Project Manager**	**Senior Project Engineer**	**Project Eng**	**Admin Asst**	**Total Labor Hours**	**KHA Labor Total**	**Other Direct Cost**	**Subcons Cost**	**Total Fee**
		245.0	**225.0**	**205.0**	**150.0**	**85.0**					
2.0	**Survey**										
			20		30	10	60	$9,850			$9,850
							0	$0		$19,340	$19,340
							0	$0		$36,420	$36,420
	Subtotal Task 2A (Hours)	0	20	0	30	10	0	$9,850	$0	55,760.00	$ 65,610.00
										TOTAL	65,610.00

Project #6116570 – DeSoto Bridge Watermain Replacement

Change Order No. 1 – Parametric Sub-Bottom Profiling & Multi-Beam Bathymetric Survey of Desoto Bridge – Water Main

Attachment No 3: Schedule

KIMLEY-HORN AND ASSOCIATES, INC.
February 4, 2026

The contract start date will be the day of the approval of the agreement. The following table summarizes the project schedule.

Milestone	**Weeks to Complete Tasks**
Parametric Sub-Bottom Profiling & Multi-Beam Bathymetric Survey	12 weeks

APPENDIX A

MANATEE COUNTY GOVERNMENT

SCOPE OF LAND SURVEYING SERVICES

WORK ASSIGNMENT NO. 14

Master Contract # 24-TA005348ED

Pursuant to the Manatee County, Florida, Agreement for SURVEYING Services for the various Departments, and entered into by and between the COUNTY OF MANATEE, hereinafter referred to as the "County" and Hyatt Survey Services, Inc. hereinafter referred to as the "Consultant," a determination has been made by the County that there is a need for the performance of or rendering of services by the Consultant of a certain "Work Assignment" under the purview of said Contract and the Consultant is hereby authorized to perform or render the particular services of work described as follows:

PROJECT TITLE: **Manatee County Bridges Parametric Sub-Bottom Profiling & Multi-Beam Bathymetric Survey Desoto, Manatee & Cortez Bridges**

PROJECT UNDERSTANDING:

Perform a Bathymetric Survey and Sub-bottom Profiling Survey for submerged pipelines located at each of the following three (3) bridges: DeSoto Bridge, Anna Maria Island Bridge & Cortez Bridge.

Scope of Services and Cost will be limited to the Desoto Bridge for this amendment.

Cortez and Manatee Bridges will be in a separate amendment.

Timeframes for completion of each task shall be specified where possible.

Attachments: ☒ Exhibit A – Survey Fee Cost Breakdown Spreadsheet
☒ Exhibit B – Project Limits and Location Map

All the requirements of a particular type of survey (Boundary, Topographic, etc.) listed in 5J-17.050 -.052 F.A.C. along with any relevant portions of Florida Statutes including Chapters 472 and 177 and Manatee County's Administrative Code applicable to Land Surveying will be met. Additionally, unless specifically directed otherwise, the following are to be delivered to the County: AutoCAD (2005 or newer but not newer than the version currently in use by the County) .dwg file using the current County template with project in State Plane Coordinate – West Florida Zone NAD 1983 (1990 or later adjustment), Electronic Raw Data file(s) / copy of field notes, Electronic Coordinate file(s).

One Bridge Site

Scope of Services and Cost will be limited to the Desoto Bridge for this amendment. Cortez and Manatee Bridges will be in a separate amendment.

SCOPE OF WORK:

☒ **<u>CONTROL SURVEY</u>** of: **Three Bridge Sites**

Survey consultant shall establish:

☒ Horizontal Control - Unless directed otherwise, the Horizontal Datum of the project shall be in State Plane Coordinates - NAD 1983 (1990 adjustment or later) Florida West Zone utilizing or referencing two published geodetic control points.

☒ Vertical Control – Note: Unless otherwise directed, the Vertical Datum is to be **NAVD 1988**. A minimum of two reasonably permanent site benchmarks with company identification shall be set at or immediately to the project and shall be based on two published control points from the County, State, or Federal Government. The survey notes shall include the relationship to NGVD 1929 and the method of conversion. Benchmarks shall be set at a maximum spacing of 1,100 feet along the project.

One Bridge Site Scope of Services and Cost will be limited to the Desoto Bridge for this amendment.

Cortez and Manatee Bridges will be in a separate amendment.

☒ **HYDROGRAPHIC SURVEY**:

All work will be performed in accordance with the attached scope of work entitled:

"PIPE CROSSINGS AT THREE MANATEE COUNTY BRIDGES PARAMETRIC SUB-BOTTOM PROFILING & MULTI-BEAM BATHYMETRIC SURVEY DESOTO, MANATEE & CORTEZ BRIDGES MANATEE COUNTY, FLORIDA"

Further summarized as follows:

Perform a Bathymetric Survey and Sub-bottom Profiling Survey for submerged pipelines located at each of the following three (3) bridges: DeSoto Bridge, Anna Maria Island Bridge & Cortez Bridge:

1. A Multibeam Bathymetric Survey will be performed in the vicinity (100' either side) of each submerged pipeline (where accessible). In areas too shallow for the use of multibeam bathymetric survey methods, a single beam bathymetric survey and/or manual soundings will be performed.

2. Hyatt Survey will enlist the services of Echo Ocean Science, LLC to conduct marine geophysical surveys to locate the subaqueous sections of the three target pipelines. To achieve this goal, EOS will mobilize a survey crew consisting of a subbottom profiler and two personnel. This equipment will be installed on the Hyatt survey vessel in Florida. The sonar transducer will be installed on the existing over-the-side pole onboard the survey vessel. The vessel and positioning equipment will be operated by Hyatt personnel. The subbottom profiler equipment will be operated by EOS personnel. EOS will provide the following system:

   A. Compact Parametric Subbottom Profiler – for use during imaging of the shallow pipelines at Desoto and Anna Maria Bridges.

   B. Deep Penetration Parametric Subbottom Profiler – for use during imaging of the deeply buried pipeline at the Cortez Bridge.

The Surveyor shall clearly identify the methods, procedures, and equipment used to obtain any of the following:

☐ Cross-sections/soundings taken every 25 feet within the survey limits.
☒ The depth of water and configuration of bottom
☐ Directions and force of current
☐ Heights and times of water stages
☒ Location of fixed objects for survey and navigation purposes.
☐ Digital copies of photos of the site,
☒ Signed and sealed survey – (6 copies) **or**
☒ A signed and sealed Surveyor's Report – (____ copies).

WORK ASSIGNMENT NO. 14

PROJECT NO.

PROJECT TITLE: **Manatee County Bridges Parametric Sub-Bottom Profiling & Multi-Beam Bathymetric Survey Desoto, Manatee & Cortez Bridges**

DATE: 1-18-26

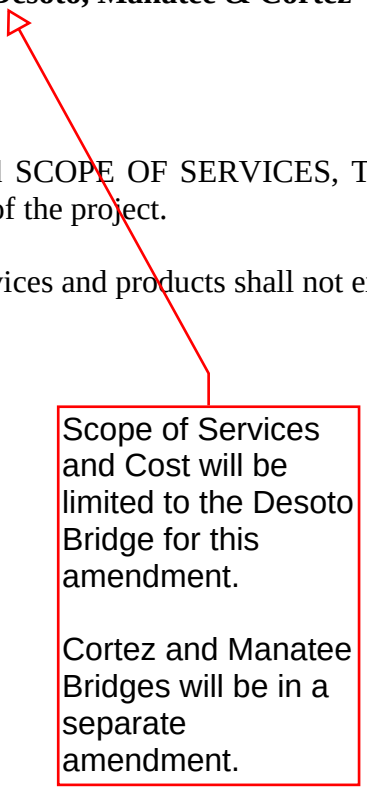
Pursuant to the Manatee County, Florida, Agreement No. 24-TA005348ED for Professional Services for Supplemental Surveying & Mapping entered into by and between the COUNTY OF MANATEE, FLORIDA, hereinafter referred to as the "COUNTY" and HYATT SURVEY SERVICES, INC., hereinafter referred to as the "Consultant", a determination has been made by the COUNTY that there is a need for the performance of or rendering of services by the Consultant of a certain "Work Assignment" under the purview of said Contract, and the Consultant is hereby authorized to perform or render the particular services of work described as follows:

TITLE OF THE PROJECT: **Manatee County Bridges Parametric Sub-Bottom Profiling & Multi-Beam Bathymetric Survey Desoto, Manatee & Cortez Bridges**

TASKS OF PROFESSIONAL SERVICES AUTHORIZED:

Consultant shall perform tasks as more specifically detailed in attached SCOPE OF SERVICES, Tasks 1 through 3. This work assignment shall remain in effect until completion of the project.

Compensation to the Consultant for rendering all the above identified services and products shall not exceed:



TASK	TASK DESCRIPTION	ORIGINAL CONTRACT AMOUNT	CHANGE ORDER AMOUNT	REVISED CONTRACT AMOUNT
1	**DESOTO BRIDGE: Perform Multibeam Bathymetric Surveys:**	$19,340.00		
2	**DESOTO BRIDGE: Conduct marine geophysical SUE surveys to locate the subaqueous sections of the three target pipelines:**	$36,420.00		
3	**MANATEE BRIDGE: Perform Multibeam Bathymetric Surveys:**	$19,340.00		
4	**MANATEE BRIDGE: Conduct marine geophysical SUE surveys to locate the subaqueous sections of the three target pipelines:**	$36,420.00		
5	**CORTEZ BRIDGE: Perform Multibeam Bathymetric Surveys:**	$19,340.00		
6	**CORTEZ BRIDGE: Conduct marine geophysical SUE surveys to locate the subaqueous sections of the three target pipelines:**	$36,420.00		
	TOTAL COST	**$167,280.00**		

Scope of Services and Cost will be limited to the Desoto Bridge for this amendment.

Cortez and Manatee Bridges will be in a separate amendment.

EXHIBIT A – Cost Breakdown (DeSoto Bridge)

Hyatt Survey Services, Inc.							Date:	1/18/2026
Project: Submerged Pipeline: Bathymetric Survey (DeSoto Bridge)								
Project Manager: Danny Swain, PSM Client: Manatee Co							**Subsurface Utility Exploration**	
Multibeam Bathymetric Surveys: (DeSoto Bridge)	**Principal (PSM)**	**Professional Surveyor (PSM)**	**Senior Survey Technician**	**Field Crew (2 man)**	**Field Crew (HYDRO)**	**Vessel/ Boat**	**SUE Designation Crew (4 Person)**	**Fee Per Task**
Hourly Rate $/Hr.	$260.00	$175.00	$130.00	$175.00	$200.00	$750.00	$200.00	
Task 1: H/V Control Survey								
Recover/establish Horizontal & Vertical Project Control Points from Published Benchmarks at each of three (3) submerged pipeline crossings:		**1**	**3**	**8**				**$1,965.00**
Task 2: Bathymetric Survey:								
Perform three (3) Multibeam Bathymetric Surveys:		**3**	**6**		**30**	**3**		**$9,555.00**
Task 3: Data Processing & CAD:								
Process hydro data, prepare DTM surfaces and prepare draft CAD deliverables for three (3) Multibeam Bathymetric Surveys:		**6**	**32**					**$5,210.00**
Task 4: Final Deliverables:								
Prepare Survey Reports and Final Deliverables:		**6**	**12**					**$2,610.00**
								$0.00
Total Hours	**0**	**16**	**53**	**8**	**30**	**3**	**0**	
							Reimbursable:	**$0.00**
Project Observations/Assumptions:							**Total Fee:**	$19,340.00

Hyatt Survey Services, Inc.							Date:	1/18/2026
Project: Submerged Pipeline: Bathymetric Surveys (DeSoto Bridge)								
Project Manager: Danny Swain, PSM Client: Manatee Co							**Subsurface Utility Exploration**	
Marine Geophysical SUE Surveys: (DeSoto Bridge	**Principal (PSM)**	**Professional Surveyor (PSM)**	**SUE Technician**	**Senior Survey Technician**	**Field Crew (HYDRO)**	**Vessel/ Boat**	**SUE Designation Crew (4 Person)**	**Fee Per Task**
Hourly Rate $/Hr.	$260.00	$175.00	$120.00	$130.00	$200.00	$750.00	$200.00	
Task 1: Marine Geophysical SUE Surveys:								
Conduct three (3) marine geophysical surveys to locate the subaqueous sections of the three target pipelines:			**20**	**40**			**70**	**$21,600.00**
Logistical support for three (3) marine geophysical surveys to locate the subaqueous sections of the three target pipelines:		**8**		**8**	**20**	**2**		**$7,940.00**
Task 2: Data Processing & CAD:								
Process geophysical SUE data, prepare draft CAD deliverables for three (3) marine geophysical SUE Surveys:			**10**	**32**				**$5,360.00**
Task 3: Final Deliverables:								
Prepare Final Deliverables			**4**	**8**				**$1,520.00**
								$0.00
Total Hours	**0**	**8**	**34**	**88**	**20**	**2**	**70**	
							Reimbursable:	**$0.00**
Project Observations/Assumptions:							**Total Fee:**	$36,420.00

EXHIBIT A – Cost Breakdown (Manatee Bridge)

Hyatt Survey Services, Inc.							Date:	1/18/2026
Project: Submerged Pipeline: Bathymetric Survey (Manatee Bridge)								
Project Manager: Danny Swain, PSM Client: Manatee Co							Subsurface Utility Exploration	
Multibeam Bathymetric Surveys: (Manatee Bridg	Principal (PSM)	Professional Surveyor (PSM)	Senior Survey Technician	Field Crew (2 man)	Field Crew (HYDRO)	Vessel/ Boat	SUE Designation Crew (4 Person)	Fee Per Task
Hourly Rate $/Hr.	$260.00	$175.00	$130.00	$175.00	$200.00	$750.00	$200.00	
Task 1: H/V Control Survey								
Recover/establish Horizontal & Vertical Project Control Points from Published Benchmarks at each of three (3) submerged pipeline crossings:		1	3	8				$1,965.00
Task 2: Bathymetric Survey:								
Perform three (3) Multibeam Bathymetric Surveys:		3	6		30	3		$9,555.00
Task 3: Data Processing & CAD:								
Process hydro data, prepare DTM surfaces and prepare draft CAD deliverables for three (3) Multibeam Bathymetric Surveys:		6	32					$5,210.00
Task 4: Final Deliverables:								
Prepare Survey Reports and Final Deliverables:		6	12					$2,610.00
								$0.00
Total Hours	0	16	53	8	30	3	0	
							Reimbursable:	$0.00
Project Observations/Assumptions:							Total Fee:	$19,340.00

Hyatt Survey Services, Inc.							Date:	1/18/2026
Project: Submerged Pipeline: Bathymetric Surveys ((DeSoto Bridge) Bridge)								
Project Manager: Danny Swain, PSM Client: Manatee Co							Subsurface Utility Exploration	
Marine Geophysical SUE Surveys: (Manatee Bridg	Principal (PSM)	Professional Surveyor (PSM)	SUE Technician	Senior Survey Technician	Field Crew (HYDRO)	Vessel/ Boat	SUE Designation Crew (4 Person)	Fee Per Task
Hourly Rate $/Hr.	$260.00	$175.00	$120.00	$130.00	$200.00	$750.00	$200.00	
Task 1: Marine Geophysical SUE Surveys:								
Conduct three (3) marine geophysical surveys to locate the subaqueous sections of the three target pipelines:			20	40			70	$21,600.00
Logistical support for three (3) marine geophysical surveys to locate the subaqueous sections of the three target pipelines:		8		8	20	2		$7,940.00
Task 2: Data Processing & CAD:								
Process geophysical SUE data, prepare draft CAD deliverables for three (3) marine geophysical SUE Surveys:			10	32				$5,360.00
Task 3: Final Deliverables:								
Prepare Final Deliverables			4	8				$1,520.00
								$0.00
Total Hours	0	8	34	88	20	2	70	
							Reimbursable:	$0.00
Project Observations/Assumptions:							Total Fee:	$36,420.00

EXHIBIT A – Cost Breakdown (Cortez Bridge)

Hyatt Survey Services, Inc.							Date:	1/18/2026
Project: Submerged Pipeline: Bathymetric Survey (CORTEZ Bridge)								
Project Manager: Danny Swain, PSM Client: Manatee Co							**Subsurface Utility Exploration**	
Multibeam Bathymetric Surveys: (Cortez Bridge)	**Principal (PSM)**	**Professional Surveyor (PSM)**	**Senior Survey Technician**	**Field Crew (2 man)**	**Field Crew (HYDRO)**	**Vessel/ Boat**	**SUE Designation Crew (4 Person)**	**Fee Per Task**
Hourly Rate $/Hr.	$260.00	$175.00	$130.00	$175.00	$200.00	$750.00	$200.00	
Task 1: H/V Control Survey								
Recover/establish Horizontal & Vertical Project Control Points from Published Benchmarks at each of three (3) submerged pipeline crossings:		**1**	**3**	**8**				**$1,965.00**
Task 2: Bathymetric Survey:								
Perform three (3) Multibeam Bathymetric Surveys:		**3**	**6**		**30**	**3**		**$9,555.00**
Task 3: Data Processing & CAD:								
Process hydro data, prepare DTM surfaces and prepare draft CAD deliverables for three (3) Multibeam Bathymetric Surveys:		**6**	**32**					**$5,210.00**
Task 4: Final Deliverables:								
Prepare Survey Reports and Final Deliverables:		**6**	**12**					**$2,610.00**
								$0.00
Total Hours	**0**	**16**	**53**	**8**	**30**	**3**	**0**	
							Reimbursable:	**$0.00**
Project Observations/Assumptions:							**Total Fee:**	$19,340.00

Hyatt Survey Services, Inc.							Date:	1/18/2026
Project: Submerged Pipeline: Bathymetric Surveys (Cortez Bridge)								
Project Manager: Danny Swain, PSM Client: Manatee Co							**Subsurface Utility Exploration**	
Marine Geophysical SUE Surveys: (Cortez Bridge)	**Principal (PSM)**	**Professional Surveyor (PSM)**	**SUE Technician**	**Senior Survey Technician**	**Field Crew (HYDRO)**	**Vessel/ Boat**	**SUE Designation Crew (4 Person)**	**Fee Per Task**
Hourly Rate $/Hr.	$260.00	$175.00	$120.00	$130.00	$200.00	$750.00	$200.00	
Task 1: Marine Geophysical SUE Surveys:								
Conduct three (3) marine geophysical surveys to locate the subaqueous sections of the three target pipelines:			**20**	**40**			**70**	**$21,600.00**
Logistical support for three (3) marine geophysical surveys to locate the subaqueous sections of the three target pipelines:		**8**		**8**	**20**	**2**		**$7,940.00**
Task 2: Data Processing & CAD:								
Process geophysical SUE data, prepare draft CAD deliverables for three (3) marine geophysical SUE Surveys:			**10**	**32**				**$5,360.00**
Task 3: Final Deliverables:								
Prepare Final Deliverables			**4**	**8**				**$1,520.00**
								$0.00
Total Hours	**0**	**8**	**34**	**88**	**20**	**2**	**70**	
							Reimbursable:	**$0.00**
Project Observations/Assumptions:							**Total Fee:**	$36,420.00

Exhibit B - Survey Limits:

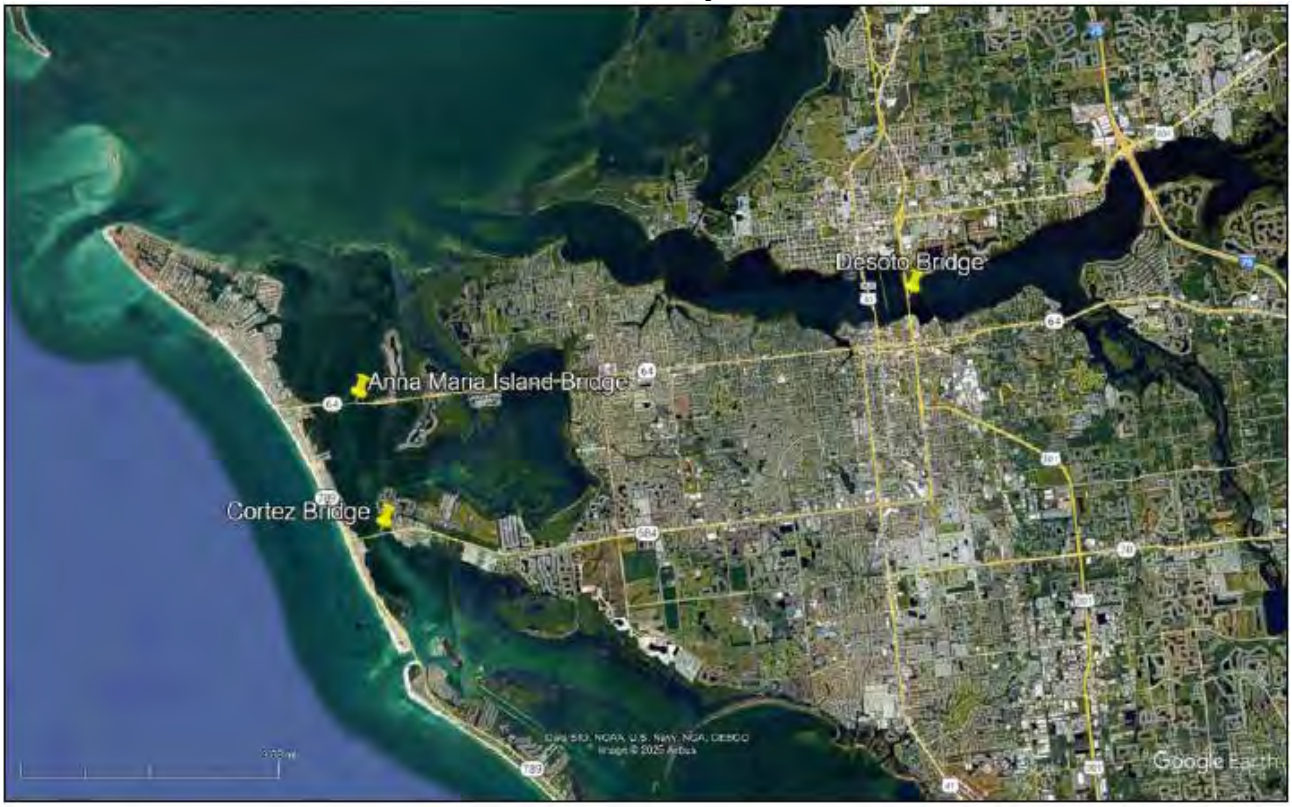


Figure 1: The general location of the three pipelines crossings near the Desoto Bridge, Anna Maria Island Bridge, and Cortez Bridges.

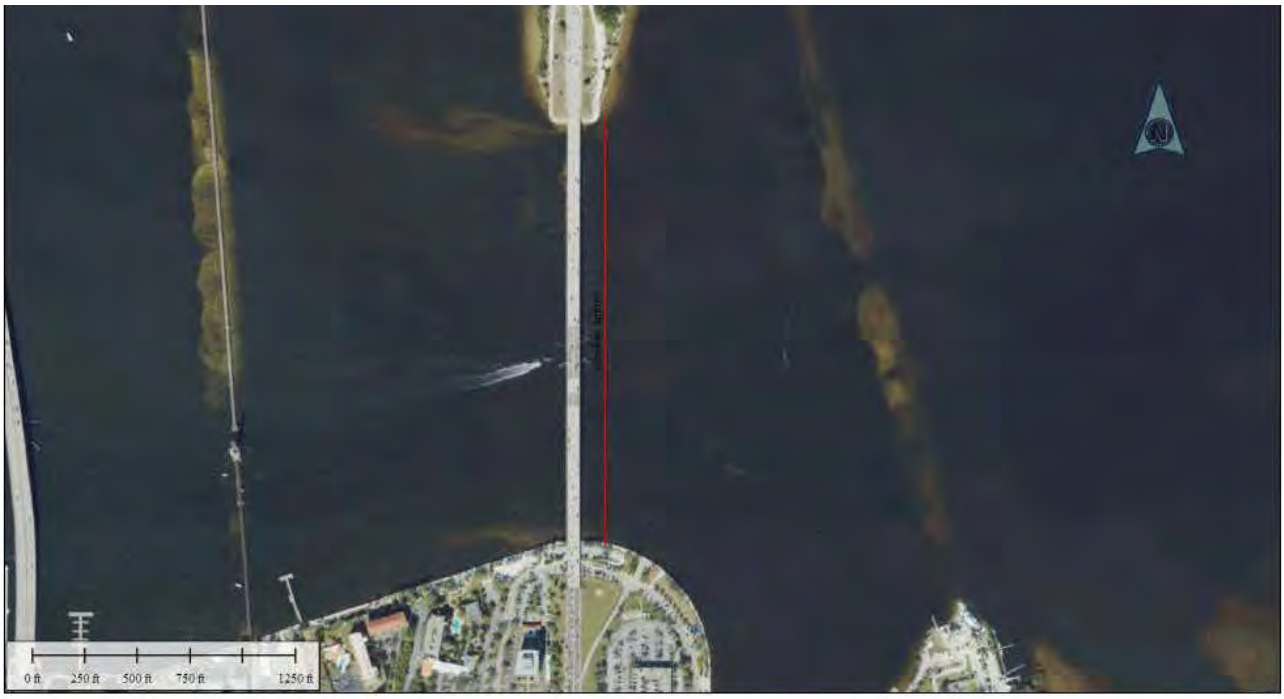


Figure 3: The pipeline (shown as a red line) crossing at the Desoto Bridge is subaqueous for the entire length and is located 150 ft east of the bridge centerline.

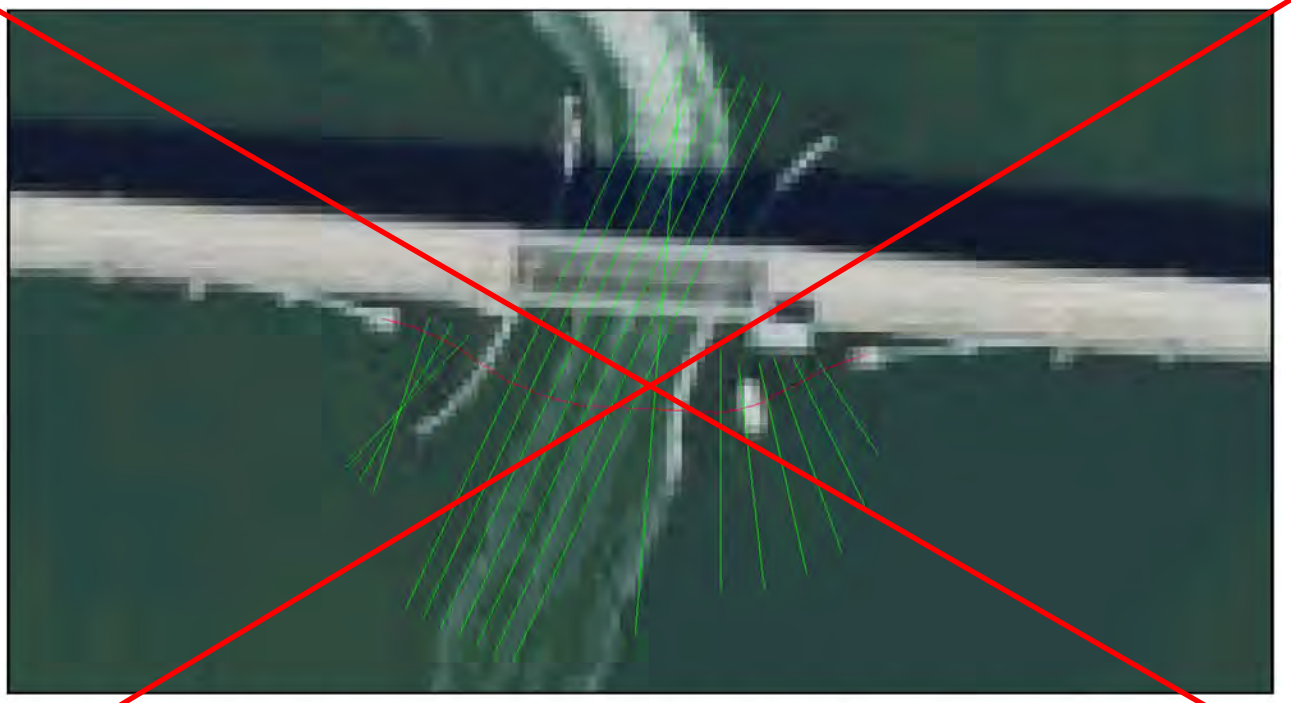
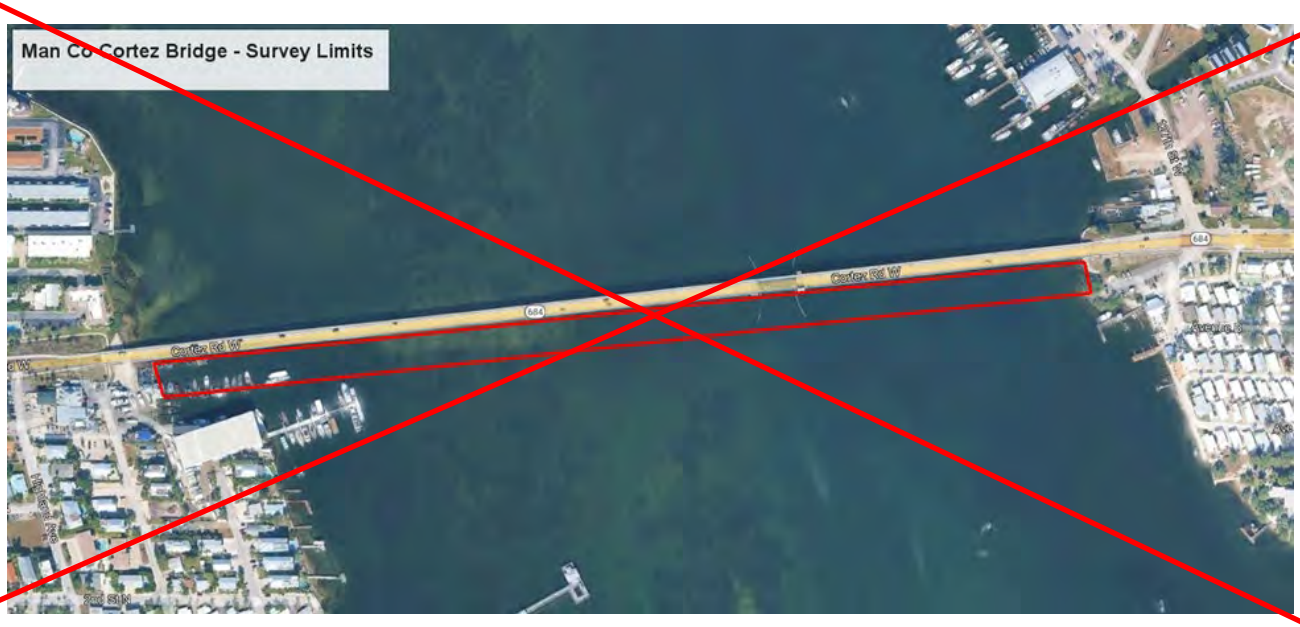


Figure 4: Proposed survey lines (green lines) at the Anna Maria Island Bridge. The subaqueous section of the pipeline is shown as red line.

At the Desoto Bridge, survey lines will be spaced at 100 ft intervals along the pipeline route (Figure 5). This line spacing will be used due to the longer length of the subaqueous section and the relatively straight course of the pipeline within that section. Each line will be surveyed in both directions.

Details of the pipeline crossing at the Cortez Bridge were not available at the time of this proposal writing; however, the effort is envisioned to be like the Desoto Bridge survey. Planned survey lines for this crossing will be agreed upon with Manatee County when pipeline data become available.



Term Agreement #: T2500089

SCOPE OF WORK
PIPE CROSSINGS AT THREE MANATEE COUNTY BRIDGES
PARAMETRIC SUB-BOTTOM PROFILING & MULTI-BEAM BATHYMETRIC SURVEY
DESOTO, MANATEE & CORTEZ BRIDGES
MANATEE COUNTY, FLORIDA

Hyatt Survey Services, Inc.
Bradenton, FL

1. General Description of Work:

Due to bridge relocation projects, the County requires the horizontal locations of subaqueous pipes located at three separate bridges, Desoto, Manatee and Cortez. The locations of each pipe within the survey areas are required to meet positional tolerances of ±1.00 foot at a 95% (1.96σ) confidence level. In order to achieve the desired outcomes, it's recommended the Innomar Compact Parametric Sub-Bottom Profiler be employed during the surveys at the Manatee and Desoto Bridges, and the Innomar Medium 100 Parametric Sub-Bottom Profiler at the Cortez Bridge due to depth of burial.

In addition to sub-bottom profiling, the County requires bathymetric data collected using a fully calibrated multi-beam echosounder configuration within the same survey area as the sub-bottom profiling.

2. Information Supplied by, or through, the County:

a) PDF and CAD data of approximate locations of expected pipes to be encountered at each bridge site.

b) All hydrographic survey techniques must be consistent with the U.S. Army Corps of Engineers Engineering Manual for Hydrographic Surveying (EM 1110-2-1003) dated 30 November 2013: http://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM_1110-2-1003.pdf

c) Safety is always a County priority; therefore, adherence to the relevant elements found EM 385-1-1 dated 30 November 2014 or later version shall be strictly followed: http://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM_385-1-1.pdf

3. Work to be Performed by the Contractor(s):

The Contractor(s) shall provide equipment, supplies, and personnel to complete the work described herein.

Specific work shall include:

a) Datums and units used project wide:

   a. Bearings and coordinates will have the following metadata:
      i. Datum: North American Datum of 1983 with a 2011 realization.
         1. NAD83(2011).

2. Epoch 2010.

ii. Projection Zone: Florida West State Plane.
iii. Projection Type: Transverse Mercator.

b. All elevations shall be referenced to the North American Vertical Datum of 1988.
   i. NAVD88.
   ii. The Geoid 18 model (or latest version) shall be used.
c. Depths shall be referenced to NAVD88.
d. Units:
   i. US Survey Foot Definition.

b) Survey Activities Associated with this task order:

a. Multi-beam bathymetric and parametric sub-bottom profile data shall be collected 100 feet on each side of the as-built pipe locations as shown on maps provided by the County.
   i. Multi-beam echo sounder data shall be collected using a motion reference unit (MRU), heading sensor, and RTK or PPK GNSS receiver for positioning. The data shall be integrated via an inertial navigation system (Kalman Filter) using a tightly coupled solution.
      1. The along and across track beam angles shall not exceed one degree.
      2. The swath width chosen shall allow for object detection of less than 6".
      3. The multi-beam data shall be collected with a 50% overlap (150% coverage).
         a. Line spacing = 75% of swath width.
            i. Swath width = 2*D*tan(1/2β)
               1. D = depth
               2. B = swath angle
   ii. Sensor offsets shall be carefully determined and entered into the online data acquisition software.
   iii. A patch test shall be performed prior to the commencement of any work in order to calibrate for the systematic errors (roll, pitch, yaw and latency) created by the positioning and mounting angles of the different sensors. These values shall be used and entered into the online data acquisition software.
   iv. Sound velocity cast shall be performed at the following minimum intervals:
      1. Start of each day's bathymetric work.
      2. At the approximate middle of each day's bathymetric work.
      3. Near the conclusion of each day's bathymetric work.
      4. At any time, the surveyor expects a noticeable change in the sound velocity profile.
   v. The entire sound velocity profile shall be used.
   vi. Under no circumstances shall the sound velocity profile be extrapolated.
   vii. If conductivity, temperature and depth are measured and used in lieu of a sound velocity probe, the sound velocity profile shall be determined using the Chen and Millero algorithm.
   viii. The portion of the sound velocity profile in the same depth range as the sound velocimeter at the multi-beam head shall be compared for satisfactory agreement.
   ix. Soundings shall be shown as elevations relative to the national vertical datum cited herein.
   x. Date, time, and elevation of the water surface shall be taken at least twice daily and tabulated in an Excel spreadsheet for delivery.

Easting	Northing	Elevation	Date	Time (24 hr)

   xi. Daily position checks shall be conducted.
   xii. While the U.S. Army Corps of Engineers Engineering Manual for Hydrographic

Surveying (EM 1110-2-1003) dated 30 November 2013 stresses repeatability, it's of vital importance the data collection not just be repeatable, but accurate as well.

xiii. The selection of frequencies used shall be carefully considered to ensure the quality of data collected.

xiv. The pulse repetition (update) rate of the echo sounder shall be chosen to maximize the data collected based on water depth.

xv. Vertical uncertainty shall meet: $\sqrt{(a^2 + (b \times d)^2)}$
   1. a: 0.1 m
   2. b: 0.0075
   3. d: survey depth

xvi. Horizontal uncertainty shall meet: a + 0.01d
   1. a: 0.35 m
   2. d: survey depth

xvii. Uncertainty analysis:
   1. An apriori multi-beam uncertainty analysis (T.V.U., T.H.U. and T.P.U.) shall be performed to ensure the appropriate sensor configuration and sensor specifications are chosen to meet the aforementioned specifications.
   2. A posteriori multi-beam uncertainty analysis (T.V.U., T.H.U. and T.P.U.) shall be performed at the conclusion of the work to ensure the actual work itself complied with the aforementioned specifications.
   3. The results from both (apriori and posteriori) shall be submitted as part of the final submittal package to the County at the conclusion of said work.

b. Parametric Sub-Bottom Profiler data shall be collected using a motion reference unit (MRU), heading sensor, and RTK or PPK GNSS receiver for positioning. The data shall be integrated via an inertial navigation system (Kalman Filter) using a tightly coupled solution.

   i. All pre-deployment, field performance, and latency calibrations as deemed necessary by the Surveyor in Charge shall be performed to ensure the precisions and accuracies specified herein are achieved.
      1. Latency determination and correction, at a minimum, shall be determined and applied.

   ii. Sensor offsets shall be carefully determined and entered into the online data acquisition software.

   iii. Horizontal uncertainty is a primary concern, therefore, the positional tolerance of ±1.00 foot at a 95% (1.96σ) confidence level is the target the County is looking for in terms of successful achievement.

4. End Results Expected:

a) Fully processed x, y, z, ASCII formatted files of the areas surveyed shall be delivered each day. Separate files and a combined file containing the following.
   a. Elevations referenced to NAVD88.
   b. Depths referenced to water surface at time of collection.

b) Copies of all raw files, edited files and files used for processing (Hypack and POSPac if used).

c) Electronic copies of all files provided to the Corps, become the property of the Government.

d) A metadata file compliant with the Federal Geographic Data Committee (FGDC) Content Standards for Digital Geospatial Metadata shall be produced for all aspects of this task order.

e) All files shall be delivered electronically using DoD SAFE: https://safe.apps.mil/

5. Schedule and Submittal:

a) The Contractor shall daily prepare and submit all pertinent data electronically no later than **Day Month 2026** to:

a) Manatee County Technical POC is Danny R. Swain at 941-748-4501 Ext. 3024 (Danny.Swain@MyManatee.Org).

b) Other Manatee County Technical POC is Tim Johnston at 941-748-4501 Ext. 6223 (Tim.Johnston@MyManatee.Org)

c) Other Manatee County Technical POC is Anita Wang at 941-708-7450 Ext. 7220 (Anita. Wang@MyManatee.Org)

Figure 2: The subaqueous section of the water pipeline at the Anna Maria Island Bridge is shown as a red line located to the south of the bridge.

Figure 3: The pipeline (shown as a red line) crossing at the Desoto Bridge is subaqueous for the entire length and is located 150 ft east of the bridge centerline.

Scope of Service

EOS will conduct marine geophysical surveys to locate the subaqueous sections of the three target pipelines. To achieve this goal, EOS will mobilize a survey crew consisting of a subbottom profiler and two personnel. This equipment will be installed on the Hyatt survey vessel in Florida. The sonar transducer will be installed on the existing over-the-side pole onboard the survey vessel. The vessel and positioning equipment will be operated by Hyatt personnel. The subbottom profiler equipment will be operated by EOS personnel. EOS will provide the following system:

- Compact Parametric Subbottom Profiler – for use during imaging of the shallow pipelines at Desoto and Anna Maria Bridges.
- Deep Penetration Parametric Subbottom Profiler – for use during imaging of the deeply buried pipeline at the Cortez Bridge.
- Sound Velocity Profiler.

Approved in Open Session 5/5/26
Manatee County
Board of County Commissioners

May 5, 2026 - Regular Meeting

Subject
Execution of Change Order No. 1 to Agreement No. 24-TA005049JH for Professional Design Services Desoto Bridge Watermain Replacement, Dafne Seeland, Project Manager – District 2

Category
CONSENT AGENDA

Briefings
None

Contact and/or Presenter Information
Presenters: Dafne Seeland – Project Manager, Ext. 7236, and Jeff Streitmatter - Project Management Division Manager, Ext. 7335, Public Works Department

Action Requested
Authorization for the Purchasing Official, or designee, to execute Change Order No. 1 to Agreement No. 24-TA005049JH for Professional Design Services Desoto Bridge Watermain Replacement with Kimley-Horn and Associates, Inc., in the amount of $65,610.00 for a revised not-to-exceed amount of $957,199.72.

Enabling/Regulating Authority
Manatee County Code of Laws

Applicable Advisory Board
N/A

Background Discussion
Change Order No. 1 authorizes an additional $65,610.00 for a revised not-to-exceed amount of $957,199.72 providing for additional scope of services to include parametric sub-bottom profiling and multi-beam bathymetric survey of Desoto Bridge water main.

Procurement History:

On July 2, 2024, the Board of County Commissioners authorized the execution of Agreement No. 24-TA005049JH with Kimley-Horn and Associates, Inc., for the provision of Professional Design Services Desoto Bridge Watermain Replacement to include design, permitting, and construction of a new 16” watermain as appropriate based on bridge replacement in a not-to-exceed amount of $891,589.72.

Change Order No. 1 authorizes an additional $65,610.00 for a revised not-to-exceed amount of $957,199.72 providing for additional scope of services to include parametric sub-bottom profiling and multi-beam bathymetric survey of Desoto Bridge water main.

Attorney Review
Not Reviewed (Utilizes exact document or procedure approved within the last 24 months)

Instructions to Board Records
Please ensure that the Chairperson signs page 3 of the Change Order.

Original to Board Records and Copies to:
Public Works: Dafne Seeland (dafne.seeland@mymanatee.org) / Stephanie Swope (stephanie.swope@mymanatee.org)
Procurement Division: Jeb Hayter (jeb.hayter@mymanatee.org) / (approvedeagendas@mymanatee.org)
Distributed 5/6/26, RT
Cost and Funds Source Account Number and Name
$65,610.00 / 404-6116570-531000/ Utility Rates

Amount and Frequency of Recurring Costs
N/A