

EXECUTIVE SUMMARY

Recommendation to approve data acquisition and analysis of Clam Pass for a total price of \$39,700 and approve all necessary budget amendments.

OBJECTIVE: To move forward with physical survey, data acquisition and analysis to determine if Clam Pass dredging is required and if so what dredging parameters (width; depth; length) are required to obtain optimum tidal flushing.

CONSIDERATIONS: The intention of this work assignment is to provide professional coastal engineering services to evaluate the condition of Clam Pass due to natural changes encountered due to recent storm events. Atkins will also provide services to work in cooperation with Collier County and The Pelican Bay Foundation, Inc. to develop a recommendation regarding the need to/or not dredge the Pass in order to maintain flushing.

The following are the tasks identified for this project:

Task 1: Clam Pass Topographic and Hydrographic survey (performed by County)

Task 2: Survey Data and Cross Sectional Analysis (performed by Atkins)

Task 3: Peer Review and Collaboration Efforts (performed by Atkins)

Task 4: Project Management and Meetings (performed by Atkins)

The total value of this work is \$39,700. Atkins will perform Tasks 2, 3, and 4 as outlined in the attached proposal dated November 6, 2012 for a total not-to-exceed time and material price of \$26,200. Collier County will perform the topographic and hydrographic surveys using an existing County contract with Agnoli, Barber and Brundage for \$13,500.

FISCAL IMPACT: A budget amendment will be necessary from 195 Reserves for the funding of this project.

GROWTH MANAGEMENT IMPACT: There is no impact to the Growth Management Plan related to this action.

ADVISORY COMMITTEE RECOMMENDATIONS: At the November 8, 2012 CAC meeting this item passed by a 7 to 0 vote with the following stipulating that Task 1 Clam Pass Topographic and Hydrographic Survey services be performed by Agnoli, Barber and Brundage under the existing Collier County contract.

LEGAL CONSIDERATIONS: This item has been reviewed by the County Attorney's Office, requires majority vote, and is legally sufficient for Board action. –

RECOMMENDATION: Recommend approval of Proposal with Atkins North American, Inc. for clam Pass Channel Improvements and Peer Review Services under Contract 09-5261-CZ for a not-to-exceed time and material amount of \$39,700 and approve any necessary budget amendment.

PREPARED BY: J. Gary McAlpin, P.E., Coastal Zone Management, Natural Resources Department

ATTACHMENTS: Proposal

**Professional Engineering Services for
Clam Pass Channel Improvements and Peer Review Services
Contract Number 09-5262-CZ
November 6, 2012**

ATKINS NORTH AMERICAN, INC. is pleased to provide this scope of work for Collier County Coastal Zone Management Department. The intention of this work assignment is to provide professional coastal engineering services to evaluate the condition of Clam Pass due to natural changes encountered due to recent storm events. Atkins will also provide services to work in cooperation with the Pelican Bay Foundation, Inc. (and their consultant(s)) to develop a recommendation regarding the need to (or not) dredge the Pass in order to maintain flushing. In accordance with Collier County Contract Number 09-5262-CZ the following scope of work is presented herein.

Scope of Services

Task 1: Clam Pass Topographic and Hydrographic Survey

Atkins will conduct a topographic and hydrographic survey in order to document the condition of the Pass including the entrance channel, the interior channel in the interior portion of the bay and R-Monuments 39 to 44. As shown on the attached plan, the area to be surveyed includes Stations -1+00 through 18+00 from the previous limits of maintenance dredging events from 2002 and 2007. It is our intent to use Agnoli, Barber, and Brundage (ABB) to perform the collection of the survey data. ABB has previously surveyed the Pass and is familiar with the conditions and effort required to complete this work.

All work shall be conducted in accordance to Section 01000 (Beach Profile Topographic Surveying), 01100 (Offshore Profile Surveying) and Section 01200 (Borrow Site, Shoal and Other Bathymetric Surveying) of the March 2004 Bureau of Beaches and Coastal Systems Monitoring Standards for Beach Erosion Control Projects including field methodology and final deliverables.

<http://www.dep.state.fl.us/beaches/publications/pdf/standard.pdf>

Prior to the start of the survey a reconnaissance of FDEP second order monuments is required to confirm that survey control is in place and undisturbed using Real Time Kinematic Global Positioning System (RTK GPS). In order to achieve required accuracy, the survey shall be controlled using FDEP 2nd order monuments. All assessable 2nd and 3rd order FDEP control monuments in the project area shall be located using RTK GPS.

Topographic and Hydrographic profile surveys will be collected. All data seaward of the dune shall be collected using RTK GPS technology. Upland areas inaccessible to RTK GPS shall be collected using standard differential leveling techniques. Upland topography shall extend approximately 150 feet landward of the vegetation line or until an obstacle is encountered.

An ACSM Certified Hydrographer shall oversee all hydrographic surveys for nearshore, offshore and inlet surveys. Hydrographic portions of the profile line shall be collected from a survey vessel equipped with RTK GPS technology and a dynamic motion sensor to provided instantaneous tide and motion corrections. Standard hydrographic procedures shall be followed including all necessary quality control checks. Horizontal and vertical positioning checks will be conducted at the beginning and end of each day using second order FDEP monuments located in the project area. The fathometer will be calibrated via bar-checks and a sound velocity probe at the beginning and end of each day. The DIGIBAR PRO sound

velocity meter or equivalent which provides a fast additional calibration for sound velocity as compared to the traditional bar check shall be used. More specifically, bar checks will be performed from a depth of five feet to a maximum depth of twenty-five feet. Analog data showing the results of the bar check calibration will be displayed on the fathometer charts at five foot increments during descent and ascent of the bar.

In order to maintain the vessel navigation along the profile lines HYPACK navigation software or equivalent shall be used. This software shall provided horizontal position to the sounding data allowing real-time review of the profile data in plan view or cross section format. The navigation software shall also provided navigation to the helm to control the deviation from the online azimuth. The landward limits of the hydrographic survey shall be based on a minimum of fifty feet beyond the seaward extent of the beach profile. Profiles shall extend seaward beyond the depth of closure, or 2,500 feet offshore, whichever is further.

A Professional Surveyor and Mapper (PSM) shall signed and sealed the required DEP survey reports which shall included field survey notes, profile plots, GIS plan view maps, photographs in both directions along the beach and towards the dune also a close-up of the monument when found as well as all other required deliverables included in Section 0100, 01100 and 01200 of the FDEP Monitoring Standards for Beach Erosion control Projects <http://www.dep.state.fl.us/beaches/publications/pdf/standard.pdf>. Four copies of the report along with a CD version will be provided to the County.

Task 2: Survey Data and Cross Sectional Analysis

Upon completion of the survey data collection effort Atkins will perform an analysis to determine the condition of the Pass with regards to design limits and standards to maintain flushing. Plans will be prepared showing the survey data and presented as cross sections that indicate existing grade, previous permitted cut depths and cross-sections will be presented. Of particular importance is the ability of the channel to maintain flushing. Cross-sectional area calculations will be performed to determine the channel condition as compared to the critical cross-section. The ability to convey water to maintain adequate flushing is severely diminished when any of the three segments of the Pass have reached a critical cross sectional threshold. Indicators or triggers of these critical cross sectional thresholds were determined to be for Segments A (mouth of Pass) & B (throat of Pass) approximately 200 square feet and Segment C (flood shoal) approximately 300 square feet (Tabar, 2010).

Upon determination of whether dredging is necessary, volume calculations will be completed to determine the amount of sediment and to be removed in order to provide adequate flushing. It is estimated that several levels (three total) of design width will be examined. A preferred width will be presented that optimizes the design showing existing conditions in comparison to the permitted limits of dredging. A letter report will be prepared that presents the results of analysis. The report and analysis will be made available to the Foundation for review and concurrence.

Following the recommendation of a preferred design, preliminary project construction costs and scheduling will be completed for County planning purposes. Cost will be presented for mobilization/demobilization, dredge activity, disposal site preparation, sediment removal, and construction administration. A project schedule will be prepared indicating all phases of construction including bidding, pre-dredge surveys, pre-dredge monitoring, mobilization/demobilization, construction/dredging, and monitoring.

Scope and Fee for completion of final sets of construction design documents will be presented to the County upon request, and is not included in this scope of services. Upon approval from the County, Atkins will prepare the final design documents. As part of the final design documents, a report will be completed that assembles all work and information to date. This report will also include a proposed maintenance-dredging program, long-term budgets, maintenance intervals and future permit renewals/extensions will be presented.

Task 3: Peer Review and Collaboration Efforts

As part of the cooperative and collaborative relationship between Pelican Bay Foundation, Inc. and County an approach was established through a working group in 2010. This approach is best explained in the response for additional information number two for the Joint Coastal Permit. Within this response several items were agreed upon: *Periodic dredging of Clam Pass is triggered to occur when the average cross sectional area within the active portion of dredge template is below 200 ft² (2007, Humiston & Moore Monitoring Report). Collier County Coastal Zone Management is responsible for physical monitoring of the pass through periodic surveys and initiating maintenance of the pass. Tidal prism and phase lag will also be monitored and used as indicators of when dredging is required.*

It is our understanding that the Foundation will be completing an analysis of tidal prism and phase lag through their annual monitoring program (the monitoring report is expected late November 2012). Atkins will conduct a peer review of the data, analysis and report findings for the County. This process would be performed with the intent to recommend a dredge width, limits of dredging and volume removed and disposal location(s).

Task 4: Project Management and Meetings

Atkins will prepare for, travel to and attend three (3) meeting to present findings, meet with County project manager and collaborate with the Foundation. ATKINS will complete monthly updates to County staff on the schedule, task and present budget of the project. In addition, quarterly progress reports will be prepared that outline project expenses to date and review the budget and schedule.

Budget Estimate

Work for this assignment will be performed on a time and materials basis for the amount of **\$39,700**. Work will be billed to the County on a monthly basis based on the percentage of work completed for the preceding month.

Task 1	Clam Pass Topographic and Hydrographic Survey	\$13,500
Task 2	Survey Data and Cross Sectional Analysis	\$13,580
Task 3	Peer Review and Collaboration Efforts	\$9,090
Task 4	Project Management and Meetings	<u>\$3,530</u>
	Total:	\$39,700

Schedule Estimate

The following schedule of completion is anticipated. Submit draft findings report within **45** calendar days and a final report in **60** days following the Notice-to-Proceed and.

November 6, 2012

Jeffrey R. Tabar
Project Director
Atkins North American, Inc.

Date

ATTACHMENT B-Statement of Work (Budget Estimate)

Client: Collier County

Charge Type: TM

Project: Clam Pass Analysis

Project No: TBD

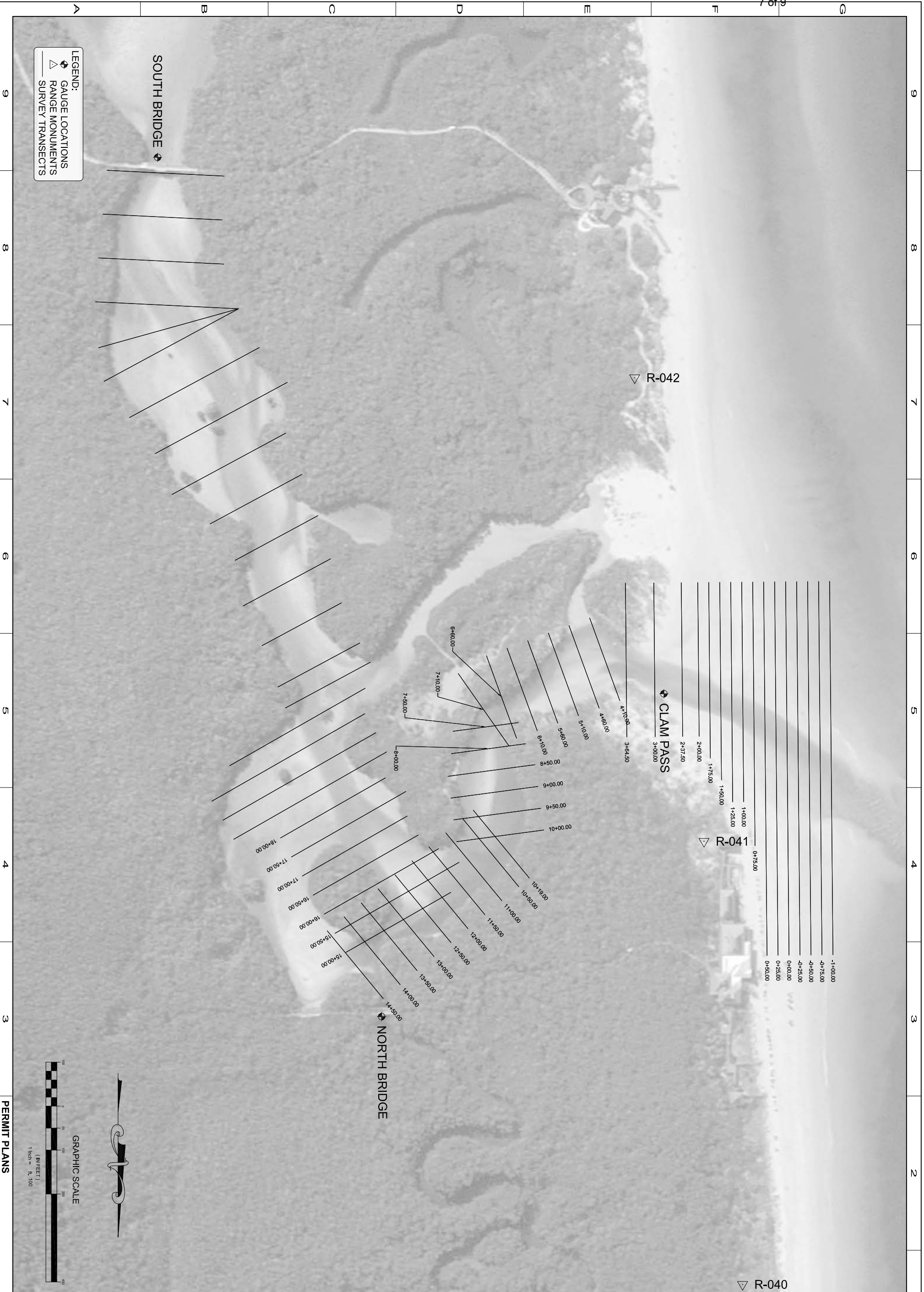
Prepared By: JRT

Labor rates will be billed at or below rates established per the agreement number contract #09-5262-CN

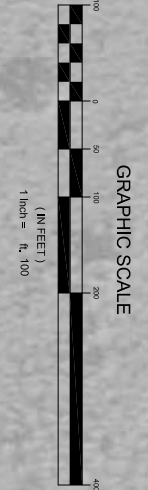
Note: time may vary depending upon the task assignment and labor rate assigned

Labor Costs				
		Tasks	Total	Labor
		2 to 4	Hours	Cost
Sr. Project Manager	\$165.00	32	32	\$5,280
Engineer	\$119.00	40	40	\$4,760
Designer	\$100.00	80	80	\$8,000
CADD Tech	\$85.00	96	96	\$8,160
Total Hours		248	248	
Labor Cost		\$26,200		\$26,200

Reimbursable Costs	Task No. 1		Reimbursable Costs
ODC	0		\$0
Sub-Contractors	\$13,500		\$13,500
Total Reimbursables	\$13,500		\$13,500
Total Project Budget	\$39,700		\$39,700



PERMIT PLANS

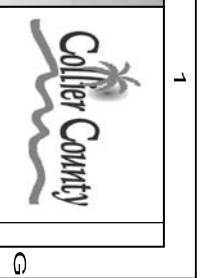


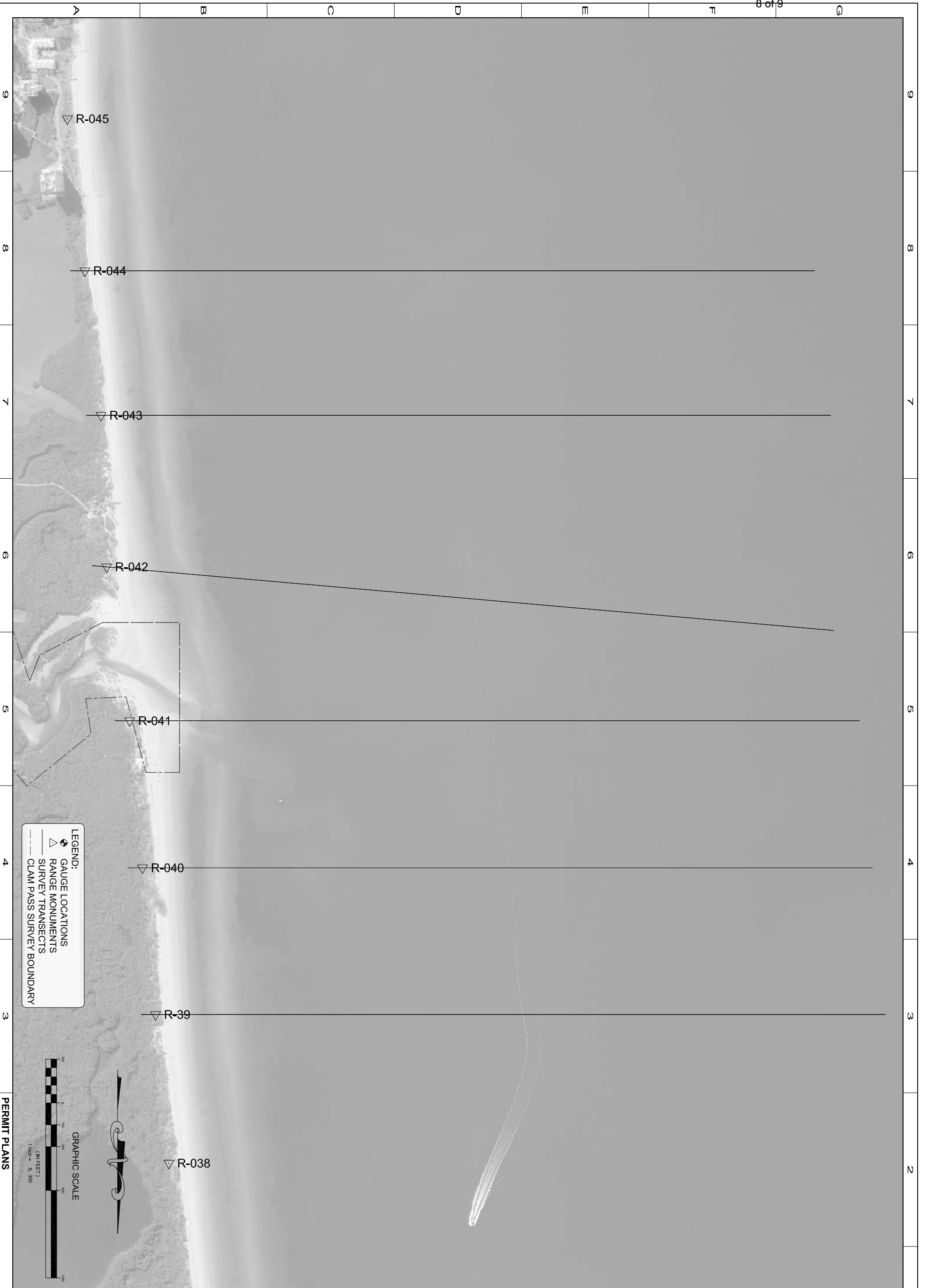
ATKINS <small>ATKINS CONSULTANTS 10000 W. BOULEVARD SUITE 200 FORT WORTH, TEXAS 76132 PHONE: 817.339.2200 FAX: 817.339.2201</small>	CLIENT	COLLIER COUNTY - CZM 2800 N. HORSESHOE DRIVE NAPLES, FLORIDA 34104
	PROJECT	CLAM PASS JCP PERMIT
	TITLE	SURVEY PLAN AND GAUGE LOCATIONS
	JOB NO.:	009322201
	DRAWN BY:	J.L.P.
DESIGNER:	B.D.F.	
CHECKED BY:	B.D.F.	
APPROVED BY:	B.D.F.	
SHEET NO.:	C-XXX	

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ENGINEER OF RECORD:	BRYAN D. FLYNN - P.E. #70856
DATE:	October 24, 2012

"NOT FOR CONSTRUCTION"		
REV	DATE	DESCRIPTION

ORIGINAL ISSUED DATE : 10/24/12	
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LEGEND:

- GAUGE LOCATIONS
- RANGE MONUMENTS
- SURVEY TRANSECTS
- CLAM PASS SURVEY BOUNDARY

GRAPHIC SCALE
 1" = 100'
 (IN FEET)



PERMIT PLANS

 ATKINS 2800 N. HORSESHOE DRIVE NAPLES, FLORIDA 34104 PHONE: 239.434.4000 FAX: 239.434.4001 WWW.ATKINS.COM	CLIENT COLLIER COUNTY - CZM 2800 N. HORSESHOE DRIVE NAPLES, FLORIDA 34104	NOTICE: The information in this document was prepared by ATKINS, Inc. While ATKINS has taken all reasonable steps to assure the accuracy of the information contained in this document, it cannot guarantee that changes or alterations to this document will not be made by persons other than ATKINS personnel after the document leaves the possession of ATKINS. Changes or alterations may be safety related and result in damage to property, personal injury or death. If verification of the information contained in this document is needed, contact should be made directly with ATKINS. This document must be compared to the original hard copy, with certified raised seal, if applicable. In order to insure the accuracy of the information contained therein and to further insure that no changes, alterations or modifications have been made to the document, no reliance should ever be made on a documentation transmitted or reviewed by computer or other electronic means unless it is first compared to the original. ATKINS makes no warranties, express or implied, concerning the accuracy of the information contained in any document transmitted or reviewed by computer or other electronic means.	ENGINEER OF RECORD: BRYAN D. FLYNN - P.E. #70856 "NOT FOR CONSTRUCTION"	 Collier County																															
	PROJECT CLAM PASS JCP PERMIT				<table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV	DATE	DESCRIPTION																											
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Schedule B

Contract No: 09-5262 "County Wide Engineering Services"

Standard Hourly Rate Schedule for all disciplines

<u>Personnel Category</u>	<u>Standard Hourly Rate</u>
Principal	\$195
Senior Project Manager	\$165
Project Manager	\$148
Senior Engineer	\$155
Engineer	\$119
Senior Inspector	\$85
Inspector	\$65
Senior Planner	\$140
Planner	\$110
Senior Designer	\$115
Designer	\$100
Environmental Specialist	\$115
Senior GIS Specialist	\$145
GIS Specialist	\$100
Clerical	\$60
Surveyor and Mapper	\$130
CADD Technician	\$85
Survey Crew - 2 man	\$130
Survey Crew - 3 man	\$160
Survey Crew - 4 man	\$180

This list is not intended to be all-inclusive. Hourly rate fees for other categories of professional, support and other services shall be mutually negotiated by the County and firm on a project by project basis as needed.