

AGREEMENT BETWEEN CLIENT AND ENGINEER FOR PROFESSIONAL SERVICES

THIS AGREEMENT is made on the 21st day of January, 2016, by and between, Town of Sunset Beach hereinafter called CLIENT, and Moffatt & Nichol, hereinafter called ENGINEER, for the following Project (the "Project"):

Town of Sunset Beach 2016 Shoreline Management and Pre-Dredge Analysis (Phase 1)

The CLIENT and ENGINEER for mutual consideration agree as set forth below:

1.0 ENGINEER'S SERVICES

The ENGINEER shall perform professional services in connection with the Project, as set forth below, and as may be further described in Exhibit "A".

Town of Sunset Beach 2016 Shoreline Management & Pre-Dredge Analysis; Phase 1 Draft Scope of Work (0120/16).

2.0 ENGINEER'S CHARGES

In accordance with this Agreement, the ENGINEER shall provide professional services for which the CLIENT shall compensate Engineer and the total compensation shall not exceed the dollar amount indicated herein, and as may be further described in Exhibit "B".

LUMP SUM. Compensation for these services shall be a Lump Sum of \$ 29,952.

TIME AND MATERIALS. Compensation for these services will not exceed \$ _____ without written authorization.

3.0 INSURANCE AND LIABILITY PROVISIONS

3.1 The ENGINEER shall acquire and maintain statutory workmen's compensation insurance coverage, employer's liability, comprehensive general liability insurance coverage and professional liability insurance coverage.

3.2 The CLIENT agrees to limit the ENGINEER's liability to the CLIENT and to all Construction Contractors and Subcontractors on the Project, due to the ENGINEER's professional negligent acts, errors or omissions, such that the total aggregate liability of the ENGINEER to those named shall not exceed the ENGINEER's total of \$500,000.

4.0 CLIENT'S RESPONSIBILITY

The CLIENT shall, unless otherwise provided for in this Agreement, at no cost to the ENGINEER:

4.1 Furnish to the ENGINEER all survey and all soils data, as well as other Project documentation as may be requested by ENGINEER, and upon which ENGINEER may reasonably rely.

4.2 The ENGINEER makes no representations concerning soil conditions and is not responsible for any liability that may arise out of the performance or failure to perform soils investigations and testing.

4.3 Guarantee full and free access for the ENGINEER to enter upon all property required for the performance of the ENGINEER's services.

4.4 Give prompt written notice to the ENGINEER whenever the CLIENT observes or otherwise becomes aware of any defect in the Project or other event which may substantially affect the ENGINEER's performance of services under this Agreement.

5.0 REIMBURSABLE EXPENSES

Reimbursable Expenses are in addition to ENGINEER's compensation for services performed on an Hourly Rate basis and include expenditures made by the ENGINEER, his employees or his consultants in the interest of the Project.

6.0 PAYMENTS TO THE ENGINEER

- 6.1 Progress payments shall be made in proportion to services rendered or as otherwise indicated within this Agreement and shall be due and owing upon the ENGINEER's submittal of any invoice. Past due amounts owed shall include a late payment Finance Charge which will be computed at the periodic rate of 1% per month, which is an Annual Percentage Rate of 12%, and will be applied to any unpaid balance 30 days after the date of the original invoice.
- 6.2 The ENGINEER may, upon seven days written notice, suspend services if CLIENT fails to make payments.
- 6.3 No deductions shall be made from the ENGINEER's compensation on account of penalty or other sums withheld from payments to Contractors.
- 6.4 Hourly Rates and Reimbursable Expenses shall be subject to periodic revision as stated on the Rate Schedule. In the event revisions are made during the lifetime of this Agreement, the increased or decreased Hourly Rates and Reimbursable Expenses shall apply to all remaining compensation for services performed by the ENGINEER when such rates provide the basis for the ENGINEER's compensation.
- 6.5 If the Project is delayed or if the ENGINEER's services for the Project are delayed or suspended for more than three months for reasons beyond the ENGINEER's control, the ENGINEER may, after giving seven days written notice to the CLIENT, terminate this Agreement and the CLIENT shall compensate the ENGINEER in accordance with the termination provision contained hereinafter in this Agreement.

7.0 GENERAL PROVISIONS

- 7.1 All Drawings, Specifications and other work data of the ENGINEER for this Project are instruments of service for this Project only and shall remain the property of the ENGINEER whether the Project is completed or not. The CLIENT shall not reuse any of the ENGINEER's instruments of service on extensions of this Project or on any other project without the prior written permission of the ENGINEER. Any unauthorized reuse shall be at the CLIENT's risk and the CLIENT agrees to defend, indemnify and hold harmless the ENGINEER from all claims, damages, and expenses including attorney's fees arising out of such unauthorized reuse of the ENGINEER's instruments of service by the CLIENT OR BY OTHERS ACTING THROUGH THE CLIENT.
- 7.2 Neither the CLIENT nor the ENGINEER shall delegate his duties under this Agreement without the written consent of the other.
- 7.3 This Agreement may be terminated by either party by seven days written notice in the event of substantial failure to perform in accordance with the terms of this Agreement by the other party through no fault of the terminating party. If this Agreement is terminated, the ENGINEER shall be paid for services performed to the termination notice date including Reimbursable Expenses due plus Termination Expenses. Termination Expenses are defined as Reimbursable Expenses directly attributable to termination.
- 7.4 This Agreement represents the entire and integrated agreement between the CLIENT and the ENGINEER and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both the CLIENT and the ENGINEER.

- 7.5 Any dispute or claim arising out of this Agreement shall be determined as follows: CLIENT and ENGINEER will negotiate in good faith to reach agreement. If negotiations are unsuccessful, ENGINEER and CLIENT agree the dispute shall be settled by mediation. In the event the dispute or any issues remain unresolved, the disagreement shall be decided by such remedies of law as they are available to the parties. This Agreement shall be governed by the laws of the State of North Carolina.
- 7.6 Should litigation occur between the two parties relating to the provisions of this Agreement, all litigation expenses, collection expenses, witness fees, court costs and attorney's fees incurred by the prevailing party shall be paid by the non-prevailing party to the prevailing party.
- 7.7 Neither Party shall hold the other responsible for damages or delay in performance caused by acts of God, strikes, lockouts, accidents, or other events beyond the control of the other or the other's employees and agents.
- 7.8 In the event any provisions of this Agreement shall be held to be invalid and unenforceable, the remaining provisions shall be valid and binding upon the parties. One or more waivers by either party of any provision, term, condition or covenant shall not be construed by the other party as a waiver of a subsequent breach of the same by the other party.
- 7.9 The ENGINEER is not responsible for design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences, or procedures required for the Contractor to perform his work. Omitted services include but are not limited to shoring, scaffolding, underpinning temporary retainment of excavations and any erection methods and temporary bracing.
- 7.10 The ENGINEER intends to render his services under this Agreement in accordance with generally accepted professional practices for the intended use of the Project and makes no warranty either express or implied.
- 7.11 Any estimate of construction costs prepared by the ENGINEER represents his judgment as a design professional and is supplied for the general guidance of the CLIENT. Since the ENGINEER has no control over the cost of labor and material, or over competitive bidding or market conditions, the ENGINEER does not guarantee the accuracy of such estimates as compared to Contractor bids or actual cost to the CLIENT.

8.0 NOTICES

Any notices required to be given under this Agreement may be given by enclosing the same in a sealed envelope, postage prepaid, addressed as follows:

CLIENT:	Town of Sunset Beach
	700 Sunset Blvd. N.
	Sunset Beach, NC 28468
Attention:	Susan Parker, Town Administrator
ENGINEER:	Moffatt & Nichol
	1616 East Millbrook Rd
	Raleigh NC 27609
Attention:	Tim Reid, P.E. Vice President

Notices shall be deposited in the U.S. Postal Service. When so given, such notice shall be given from the time of mailing the same.

EXHIBIT "A"
STATEMENT OF SERVICES

Town of Sunset Beach

2016 Shoreline Management & Pre-Dredge Analysis

Phase 1 - Draft Scope of Work (01/20/16)

BACKGROUND & UNDERSTANDING

The Town of Sunset Beach (Town) intends to maintenance dredge approximately 2.8 miles of canals and feeder channels to support recreational navigation and tidal flushing. The work area includes Jinks Creek, which connects Tubbs Inlet with the Atlantic Intracoastal Waterway (AIWW), along with Mary's Creek and Turtle Creek. The work area also includes the feeder canal extending from Jinks Creek to Cobia Street and the connecting finger canals adjacent to Marlin, Sailfish, Dolphin and Cobia streets. In addition, the work area includes the canal positioned between North Shore Drive and Canal Drive, which forms the widest canal, from shoreline to shoreline, included in the work separate of Jinks Creek. Sediment shoaling induced from storm water run-off and tidal currents threaten continued navigation within these passageways. Sediment accumulation within the bay area at the confluence of Jinks Creek and Tubbs Inlet also impedes navigation traversing towards the inlet.

The proposed project would significantly improve access through the referenced waterways and establish a long-term template for maintaining the navigation depths. The project would also assist in managing the construction of future piers or docks by establishing a fixed deep water path through the canal. Once obtained, the proposed state and federal permit authorizations would provide a long standing record of the channel dimensions and alignment. The sediment removal may also improve tidal flushing and help improve nursery habitats within the tributary systems. Future pier or dock development could also maintain compliance with a Town regulated 5-foot buffer from the navigation channel with reasonable assurances deep water access will be available.

In order to provide a cost effective approach, the following scope details an initial phase for investigating the cost and feasibility of permitting the four (4) sites listed below and shown on the attached figures.

- Site 1 – Canal Street connector and finger canals adjacent to Marlin, Sailfish, Dolphin, and Cobia streets; in addition to the North Shore Drive Canal (approx. 6,800 ft)
- Site 2 – Jinks Creek (approx. 5,600 ft)
- Site 3 – Mary's Creek (approx. 1,100 ft)
- Site 4 – Turtle Creek (approx. 1,100 ft)

The scope details the work necessary to collect sufficient information to hold a coordination meeting with the environmental agencies. The meeting should identify the permitting constraints for each project area and allow for the proper estimation of the design costs required to move forward. After review of the estimated costs, the Town may elect to proceed with permitting all, any, or none of the proposed sites.

Task 1.0 – Project Coordination

Moffatt & Nichol (M&N) will provide written monthly progress reports to the Town to document the project status, current work efforts, and anticipated completion dates. M&N will also be available for conference calls at the Town's convenience to discuss the status of the project and answer any questions that may arise. Due to the short duration of the initial phase, no public meetings or presentations are envisioned for this task.

The Proposed Lump Sum Fee for Task 1 is \$1,237.⁰⁰

Task 2.0 – Hydrographic Survey

M&N will sub-contract Geodynamics LLC. to provide a hydrographic survey of the four (4) proposed sites to determine excavation quantities. The surveys will be conducted by a North Carolina licensed professional surveyor along transects spaced between 50 ft and 250 ft as shown in the attached figures. The surveys will be conducted by hydrographic techniques using a vessel mounted fathometer or other similar equipment along with kinematic GPS. Data points will be continuously collected during the hydrographic work with a maximum horizontal spacing of 10 ft. The survey will be conducted as close to high tide as possible to allow for data collection to be completed during one (1) tide cycle. The survey will not include any topographic points or ‘walking’ points and will be completely conducted by the shallow draft survey vessel.

Deliverables for this task include a survey report, a color coded GIS compatible surface of each dredge area, and a digital X,Y,Z (easting, northing, elevation) file along with a station, range, elevation (BMAP) file. The X,Y,Z file will assist with plotting the survey data in AutoCad or GIS software while the BMAP file is necessary for analysis in CEDAS (Coastal Engineering Design & Analysis System) software. The color coded surface will be generated by computer interpretation of the elevations between the collected data points and should be considered an approximation of the existing conditions. The survey data will be referenced to North Carolina State Plane NAD83 US foot horizontal coordinates and NAVD88 vertical coordinates.

The Proposed Lump Sum Fee for Task 2.0 is \$16,897.00

Task 3.0 – Develop Project Goals and Constraints

M&N will use the hydrographic survey data collected by Geodynamics to estimate the dredge quantities for each project area. Representative cross sections will be prepared to show the typical dredge depths for the project. Color coded maps will also be generated to show the depth of excavation required in plan view for the four (4) project sites. The plan view drawings will show potential upland disposal sites that may be used for the project. The drawings and volume estimate will be provided for discussion at the agency coordination meeting discussed below.

M&N will research if any of the project area falls within a designated critical habitat area such as a Primary Nursery Area (PNA) for fisheries or critical habitat for wading shorebirds. This will include contacting representatives within the CAMA habitat section to verify the PNA boundary and restrictions believed to be in-place for Jinks Creek and the feeder canals adjacent to Canal Drive and North Shore Drive.

M&N will also work with the Town to identify potential upland disposal sites and obtain conceptual agreement for their use. This includes sites such as Bird Island, the disposal islands within the AIWW, and beach placement locations along the western end of Ocean Isle. The Town will take the lead on all communications with the site owners or management designees and M&N will provide supporting documentation and drawings to assist in explaining the request.

In addition, M&N will inquire on the potential eligibility for state cost sharing through the shallow draft navigation fund. M&N will discuss the project with NCDEQ staff to provide a conceptual outlook on the funding potential from the state.

M&N will also research the expired CAMA major permit (22-02) for Mary’s Creek and Turtle Creek to identify potential permitting issues. All of the pertinent information reviewed will be discussed at the agency coordination meeting discussed below.

The Proposed Lump Sum Fee for Task 3.0 is \$7,079.00

Town of Sunset Beach
 2016 Shoreline Management & Pre-Dredge Analysis
 Phase 1 – Draft Scope of Work (01/20/16)

Task 4.0 – Agency Coordination Meeting

M&N will request and chair an agency coordination meeting with representatives of the Town, the USACE, CAMA, and others to discuss the potential and requirements for permitting the proposed project. M&N will present the findings of Task 3.0 to the invited members a minimum of 1 week prior to the meeting to allow each member ample review of the project. A written summary of the meeting will be provided to all participants along with contact information for each attendee.

The outcome of the Agency Coordination meeting will be a determination of the level of effort required to permit and design each of the four (4) potential dredge areas. Based on the results of the coordination meeting, M&N will prepare a scope of work for the Town’s review. The scope will identify the specific tasks (including field investigations) recommended to complete the design and permitting work. The anticipated field investigations include soil borings and testing to determine the sediment characteristics along with cultural surveys and potentially hydraulic modeling.

The Proposed Lump Sum Fee for Task 4.0 is \$4,694.00

The total proposed M&N fee for the work equals \$29,952.00. M&N appreciates the opportunity to assist the Town of Sunset Beach with Phase 1 of the Shoreline Management and Pre-Dredge Analysis. To assist with the review of this scope, Table 1 below provides a breakdown of M&N man hours and costs associated with each task. (Table 2 from Geodynamics provides a summary of the costs associated with the hydrographic surveying.)

Table 1 –M&N Estimated Costs

PROJECT TASK COMPLETION CHECKLIST										Date: 21-Jan-16	
Firm: <u>Moffatt & Nichol</u>										Dual Number:	
Sunset Beach - Shoreline Management & Pre-Dredge Analysis										Notice-to-Proceed Date:	
Scoping Date:											
TASK	Supervisory Coastal Engineer	Senior Environ. Specialist	Coastal Engineer III	Coastal Engineer II	Coastal Engineer I	Environ. Specialist I	Senior CADD TECH	Clerical	Totals		
									Hrs.	\$	
Billing Rates	207.00	185.00	155.00	125.00	110.00	95.00	110.00	50.00			
Task 1 - Project Coordination	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.			
Project Coordination	1.00	-	6.00	-	-	-	-	2.00			
Task 1 Totals	1.00	-	6.00	-	-	-	-	2.00	9.00	\$1,237	
Task 2 - Hydrographic Survey											
Geodynamics	-	-	-	-	-	-	-	-	-	-	
Task 2 Totals	-	-	-	-	-	-	-	-	-	\$0	
Task 3 - Develop Project Goals & Constraints											
Prepare Cross-Sections and Volume Estimate	0.50	-	2.00	6.00	14.00	-	6.00	-			
Research Critical Habitat Designations	-	1.00	1.00	-	-	4.00	-	-			
Identify Potential Disposal Sites & Obtain Conceptual Use Agreement	0.50	-	5.00	-	4.00	-	-	-			
State Cost Share Eligibility	1.00	-	2.00	-	-	-	-	-			
Review Existing Information & Identify Potential Permitting Issues	-	-	2.00	-	6.00	2.00	-	-			
Task 3 Totals	2.00	1.00	12.00	6.00	24.00	6.00	6.00	-	57.00	\$7,079	
Task 4 - Agency Coordination Meeting											
Prepare for Agency Coordination Meeting	1.00	1.00	8.00	-	-	2.00	-	-			
Request & Chair Agency Coordination Meeting	-	4.00	8.00	-	-	-	-	-			
Identify Scope for Moving Forward	1.00	1.00	2.00	-	-	2.00	-	-			
Task 4 Totals	2.00	6.00	18.00	-	-	4.00	-	-	30.00	\$4,694	
Total Man-Hours:	5.00	7.00	36.00	6.00	24.00	10.00	6.00	2.00	96.00		
Total Personnel Expenses:	\$1,035	\$1,295	\$5,580	\$750	\$2,640	\$950	\$660	\$100	\$13,010	\$13,010	
Miscellaneous Expenses											
Subsistence:										\$0	
Photographs, Telephone, Shipping, Supplies, & Misc. Expenses:										\$0	
Reproduction:										\$0	
Automobile & Travel (1 days @ \$45/day):										\$45	
Sediment sample analysis										\$0	
Total Miscellaneous Expenses:										\$0	
Total Personnel Expenses:										\$0	
==> Total M&N Personnel & Expenses: \$										\$13,055	
==> Total Subcontractor Expenses: \$										\$16,897	
==> Total Project Fee: \$										\$29,952	

Geodynamics
 \$16,897
 \$16,897

Town of Sunset Beach
 2016 Shoreline Management & Pre-Dredge Analysis
 Phase 1 – Draft Scope of Work (01/20/16)

Table 2. Geodynamics Proposed Cost



2016 Dod Negotiated Schedule A Hourly Rates

Project Information

Client Name: Moffatt & Nichol
 Project Name / Description: Sunset Beach, NC Singlebeam Condition Surveys
 Scope Name / Rev No: Email / Verbal Scope (1/11/16)
 Contract / Sub-Contract No: N/A
 Task Order No: N/A
 Period of Performance: Feb-16
 Cost Proposal Revision No: v1
 Proposal Date: 1/12/2016

SOW Item No.	Task Description	Office Admin / Review		Field Support (Personnel)		Office Support (Labor / Hardware / Software)		Hydro Survey Support (Labor / Equip)		Land Survey Support		Per Diem (per person per day)	Mileage truck towing boat	Mileage truck	Hydro Crew/Vessel 18' 24'	Singlebeam Sonar System	GFS Survey Party Class #	Total Task w/ Fee	% Job	Task Total	
		Sr. Project Manager	Cert Hydro Surveyor	Hydro Survey Tech	Hydro Survey Tech	GIS Specialist Senior	GIS Specialist	GIS Tech	Hydro Crew/Vessel 18' 24'	Singlebeam Sonar System	GFS Survey Party Class #										Mileage truck
1	Project Setup	1.0			8.0							\$0.00		\$752.31					4.46%	\$ 1,301.41	
2	Logistics				3.0							\$0.00		\$220.51					1.31%		
3	Administration	2.0										\$0.00		\$328.59					1.95%		
1	Singlebeam Hydro Survey			2.0	2.0							\$102.00	150.0	\$1,723.96	3.0	3.0	3.0		10.22%	\$ 8,993.48	
2	RTN-Checkin / Calibration					2.0						\$0.00		\$718.81					4.26%		
3	Hydrographic Survey											\$286.02		\$4,720.06	12.0	12.0			27.09%		
4	Onsite Processing / QA-QC							1.0				\$0.00		\$105.79					0.63%		
5	Demobilization			2.0	2.0							\$102.00	150.0	\$1,723.96	3.0	3.0			10.22%	\$ 4,285.39	
1	Singlebeam Data Processing (11.5)						15.0					\$0.00		\$1,201.46					7.65%		
2	DEM Generation & GIS Compatibility		1.0			16.0	2.0					\$0.00		\$2,014.02					11.94%		
3	BMAP Compatibility					4.0						\$0.00		\$423.15					2.51%		
4	Final QA-QC / Metadata		2.0			3.0						\$0.00		\$556.77					3.30%		
1	Final Reporting / Deliverables					4.0	16.0					\$0.00		\$1,800.70					10.67%	\$ 2,294.33	
2	Basic Reporting		1.0			4.0	4.0					\$0.00		\$493.63					2.93%		
	Final Deliverables / Backup		4.0			15.0	42.0					\$0.00		\$1,874.67					100.00%		
	Total Hours/Miles:	3.0	4.0	4.0	15.0	0.0	25.0	0.0	18.0	18.0	3.0	300.0	300.0	\$16,874.67	18.0	\$362.52	\$468.42	50.0	29.5%	\$500.02	
	Total Costs:	\$448.08	\$542.68	\$371.32	\$1,002.30	\$0.00	\$2,404.25	\$3,287.34	\$5,631.12	\$362.52	\$468.42	\$28.50	\$294.00	\$500.02							
	Sub Total:													\$15,340.55							
	FedEx Delivery of Final Data:													\$20.00							
	Profit @ 10%:													\$1,536.06							
	Project Total:													\$16,896.61							

Notes / Assumptions:
 * Assumes use of NCGS RTN station NCSL Shalotte
 * All attempts made to get bank to bank coverage at high tide w/ understanding that there is likely areas that will not be passable with hydro
 * No topographic tie in budgeted
 * Will need to pick a survey window with high tide in middle of the day
 * Safety of the field crew is the priority

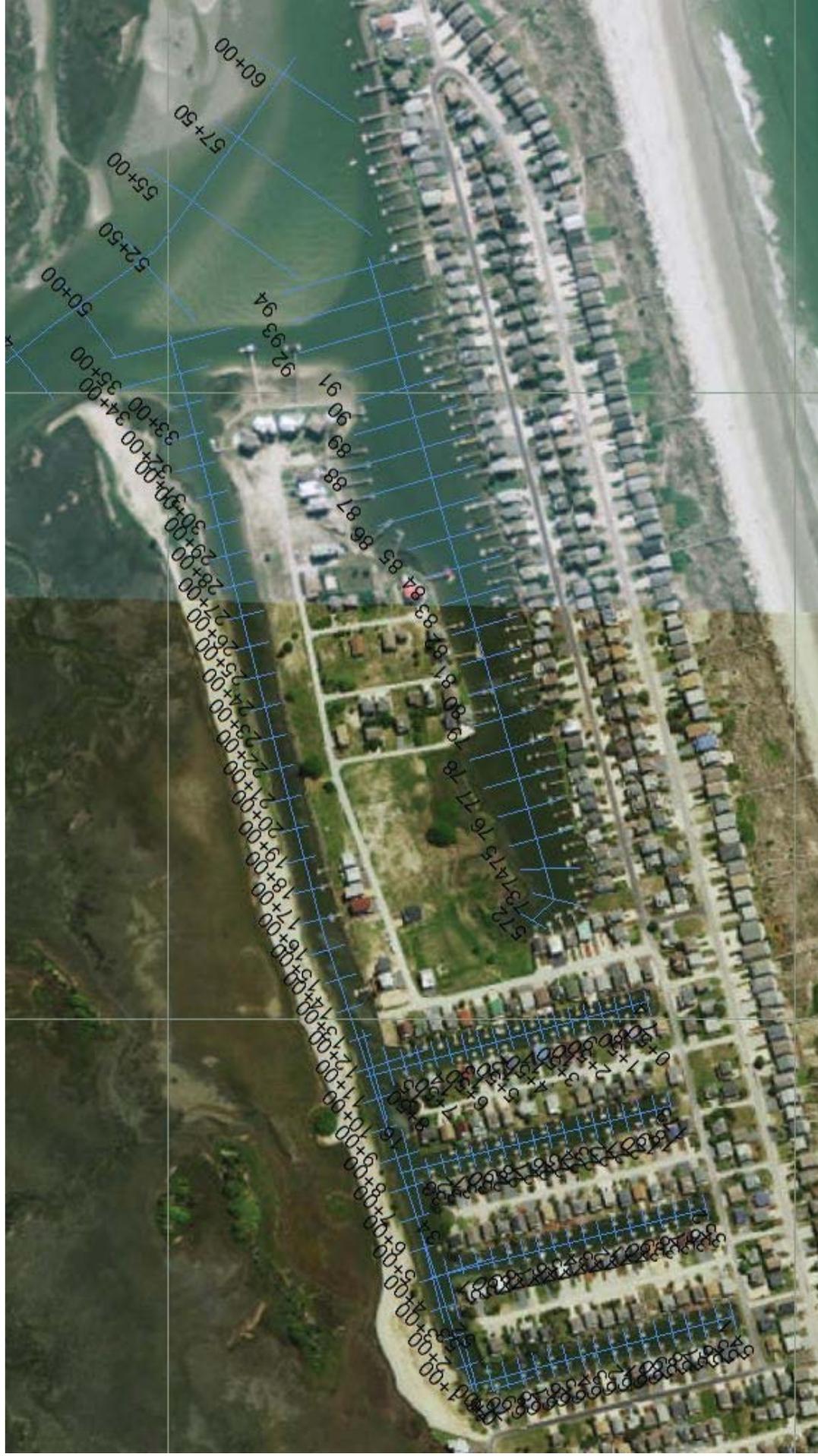


Figure 1 – Canal Street and North Shore Drive Feeder Canal Survey Layout

Town of Sunset Beach
2016 Shoreline Management & Pre-Dredge Analysis
Phase 1 – Draft Scope of Work (01/20/16)

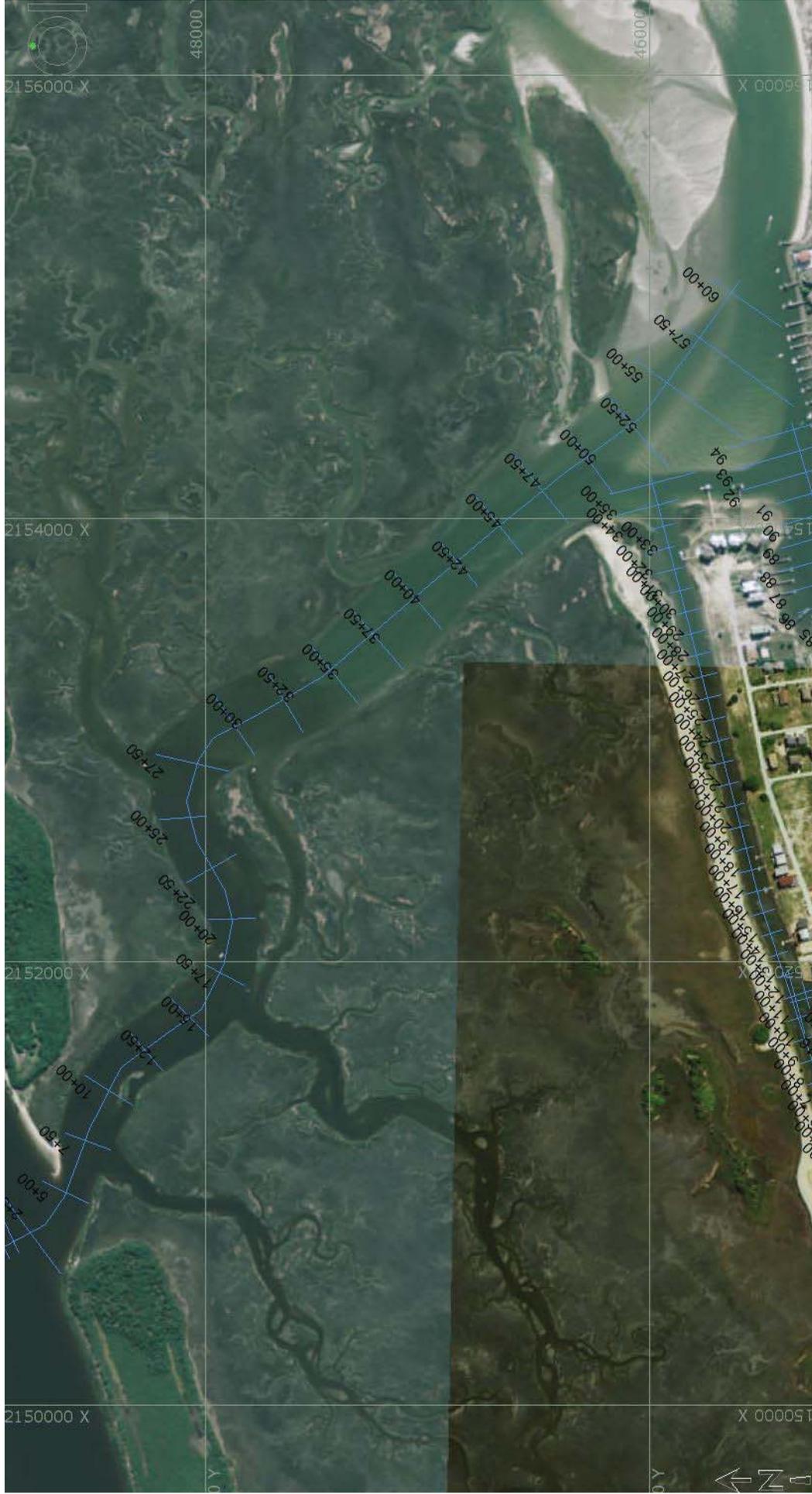


Figure 2 – Jinks Creek Survey Layout

Town of Sunset Beach
2016 Shoreline Management & Pre-Dredge Analysis
Phase 1 – Draft Scope of Work (01/20/16)



Figure 3 – Mary's Creek and Turtle Creek Survey Layout

EXHIBIT "B"

COMPENSATION AND PAYMENT

TASK	Supervisory Coastal Engineer	Senior Environ. Specialist	Coastal Engineer III	Coastal Engineer II	Coastal Engineer I	Environ. Specialist I	Senior CADD TECH	Clerical
	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
Investigation	207.00	185.00	155.00	125.00	110.00	95.00	110.00	50.00
Survey	1.00	-	6.00	-	-	-	-	2.00
	1.00	-	6.00	-	-	-	-	2.00
Set Goals & Constraints	-	-	-	-	-	-	-	-
and Volume Estimate	0.50	-	2.00	6.00	14.00	-	6.00	-
Designations	-	1.00	1.00	-	-	4.00	-	-
al Sites & Obtain Conceptual Use Agreement	0.50	-	5.00	-	4.00	-	-	-
ty	1.00	-	2.00	-	-	-	-	-
ion & Identify Potential Permitting Issues	-	-	2.00	-	6.00	2.00	-	-
	2.00	1.00	12.00	6.00	24.00	6.00	6.00	-
ation Meeting	1.00	1.00	8.00	-	-	2.00	-	-
dition Meeting	-	4.00	8.00	-	-	-	-	-
oordination Meeting	1.00	1.00	2.00	-	-	2.00	-	-
g Forward	2.00	6.00	18.00	-	-	4.00	-	-
	5.00	7.00	36.00	6.00	24.00	10.00	6.00	2.00
Costs:	\$1,035	\$1,295	\$5,580	\$750	\$2,640	\$950	\$660	\$100

phone, Shipping, Supplies, & Misc. Expenses: \$0
 el (1 days @ \$45/day): \$0
 analysis \$0
 s Expenses: \$45
 Expenses: \$0
 Expenses: \$0

l & Expenses: \$ \$13,055
 Expenses: \$ \$16,897
 Expenses: \$ \$29,952

Geodynamics \$16,897
 \$16,897