



TOWN OF LAUDERDALE-BY-THE-SEA

ROUNDTABLE ITEM REQUEST FORM

Executive/Administration

**Connie Hoffmann, Interim Town
Manager**

Department Submitting Request

Name/Title

Meeting Date / Time

Deadline w/o Backup

Deadline w/ Backup

July 14, 2010 / 7:00 PM

July 2, 2010 / Noon

June 25, 2010 / Noon

July 28, 2010 / 7:00 PM

July 26, 2010 / Noon

July 16, 2010 / Noon

Oct 13, 2010 / 7:00 PM

Oct 11, 2010 / Noon

Oct 1, 2010 / Noon

Oct 26, 2010 / 7:00 PM

Oct 24, 2010 / Noon

Oct 15, 2010 / Noon

ITEM: REEF RESTORATION PROJECT

A report on the history and current status of the Reef Restoration Project.

ACTION OR OUTCOME EXPECTED: Commission direction on how to proceed with the project.

EXHIBITS: Report dated July 8, 2010 from Interim Town Manager
Letter dated May 24, 2010 from RPL Inc.
Contract and First Amendment to the Contract between Town and Global Coral Reef Alliance

Town of Lauderdale-by-the-Sea

OFFICE OF THE TOWN MANAGER

Memorandum

Date: July 8, 2010

To: Mayor Roseann Minnet
Commissioner Stuart Dodd
Commissioner Birute Clottey
Commissioner Scot Sasser
Commissioner Chris Vincent

From: Connie Hoffmann, Interim Town Manager 

Subject: A REPORT ON THE HISTORY & CURRENT STATUS OF THE REEF RESTORATION PROJECT

THE ORIGINAL CONTRACT

The Town Commission approved the project on February 13, 2007 in the amount of \$60,280 and executed a contract with Global Coral Reef Alliance (hereafter referred to as GCRA), a New York 501c3 corporation. The contract provided that the GCRA would erect and operate an artificial reef fish habitat within a 400 yard distance of Anglin's Pier with power provided from the Pier. The work was divided into two stages, with underwater mapping of the project and getting required permits being the First Stage and completed within 60 days of execution of the agreement with the Town. The Second Stage involved fabricating and installing the artificial reef structure and was to be completed within 60 days after a permit for the project was received from the Florida Department of Environmental Protection.

The contract provided that the Town would make payment to Contractor as follows:

\$12,000 within 5 days of execution of contract; the Town paid Global Coral Reef Alliance \$12,000 on 3/30/2007 (check # 10824).

\$21,280 within 5 days of GCRA submitting a written draw request stating that all when the First Stage work was complete.

\$27,000 within 30 days of GCRA submitting a written draw request stating that all First *and* Second Stage work was complete.

The Town opened a purchase order for \$48,200 on 4/6/2007 with a notation that it was for the original contract amount of \$60,280 less check # 10824 issued in the amount of \$12,000.

THE CONTRACT AMENDMENTS

Later in 2007, GCRA requested an amendment to their contract that included a \$16,200 increase in the total remuneration to be paid to them (the new total was \$76,480) for the project. This change was requested because the cost of the providing power from the Pier became prohibitive and GCRA proposed instead to build three solar-powered buoys to provide electric power. Two buoys would be installed to provide power to the reef structure and the third buoy would serve as a backup.

An amendment to the contract was approved by the Town Commission on September 25, 2007 and executed that same day. There was no memo from staff with the agenda item explaining or describing the changes being made in the contract, but both the old and the revised contract language was provided to the Town Commission in the backup with the agenda item.

The performance and payment provisions were modified by the amendment as follows:

First Stage work was redefined as doing the underwater mapping, providing a schematic design and preparing and submitting a permit request to the Florida Department of Environmental Protection. Upon completion of the First Stage work, GCRA was now to be paid \$37,480, instead of the \$21,280 called for in the original contract.

Second Stage work was redefined as completing the installation of the "Work", utilizing materials referred to in Exhibit A (which referenced the three solar buoys), mooring the solar power source to the ocean floor, and extending insulated electric lines from the buoys to underwater rebar structures which were placed on the ocean floor.

There was no change in the contract language calling for a final payment of \$27,000 upon completion of the second stage work. Deadlines for performance remained in the contract.

Both the original and revised agreement provide that the GCRA would complete "monthly inspections, monitoring" for a year, and "maintenance, operations, repair" for an unspecified time. Of the \$76,480 in the budget submitted by GCRA, \$12,000 was allocated for the monthly inspections and monitoring and \$10,000 was allocated for maintenance, operations and repairs. But in both the original and amended contract, GCRA is entitled to receive full payment from the Town for the project before the one year inspecting and monitoring period begins.

Nowhere in the agreement does GCRA warrant that the work they do will generate a coral reef or how quickly that reef will grow or that it will survive.

History of Payments Made to GCRA

As mentioned earlier, the Town paid Global Coral Reef Alliance \$12,000 shortly after execution of the original agreement with them.

On September 2, 2009 the Town issued a check to Global Coral Reef Alliance for \$37,480 in accordance with the First Amendment to the contract. The check description says "Permitting – 1st stage complete".

The Town has paid Global Coral Reef Alliance \$49,480 so far, leaving the final payment of \$27,000 outstanding.

CURRENT STATUS OF THE PROJECT

The deadlines for performance placed on the GCRA have not been met, but the Town has taken no action to declare GCRA in default of the contract. The decision to move from a Pier power source to solar-powered buoys complicated the project and caused some delays. In addition, the project required more permits than indicated in the agreement with GCRA and it appears that Cry of the Water, a local non-profit who assists GCRA, was of significant assistance to the Town in obtaining those permits. The permits were all issued in the Town's name and their status is as follows:

- Army Corps of Engineers – issued 6/10/2008; permit expires 6/10/2014
- Florida Dept of Environmental Protection – issued 11/18/2008; expires 11/18/2013
- License from Broward County Dept of Environmental Protection & Growth Management – issued 10/2009
- Coast Guard permit for buoy installation – issued 1/28/2009; good for 1 year and has expired; Cry of the Water recently applied on the Town's behalf to have the permit renewed and has been assured verbally by local Coast Guard officials that it will be renewed.

In June, CGRA approached the Town via former Commissioner Marc Furth who has been a strong advocate for the project, for additional funding in the amount of \$13,700 for the project, citing cost overruns in the fabrication of the solar buoys. (See attached letter dated May 24, 2010 from RPL Inc. to Dan Clark of Cry of the Water explaining the cost issues.) One solar buoy is substantially complete. I advised that I needed to do some research as I knew nothing about this project, but commented that I thought it was incumbent upon the contractor to come up with the additional funds, not the Town. After doing some research on the project and speaking with representatives of Cry of the Water and Mr. Furth further, I wrote to Dr. Thomas Goreau, President of CGRA on June 17th. I advised him that, while I could not speak for the Commission, from my perspective CGRA needed to either raise additional funds for the project from sources other than the Town or should make adjustments within their existing budget for the project to cover the cost overruns. I also told him that the Town would be willing to store the completed buoy in our warehouse for safekeeping. Dr. Goreau wrote back quickly, indicating

that he understood my position and they would be working to get a second buoy completed so that the project could be installed.

THE BUOY

During this same period of time, Mr. Furth asked me if he could bring the buoy to Town Hall to place it on display so that the public and the Town Commission could see it. I originally indicated that might be possible, but after Municipal Services Director Don Prince went to see the buoy and told me how big and heavy it was, I called Mr. Furth and told him I did not want to display the buoy in front of Town Hall due to concerns about it possibly being damaged and liability issues. Mr. Furth subsequently displayed the buoy in front of his hotel on El Mar Drive. I did tell him it would be okay to display the buoy behind Town Hall on the Fourth of July in order to raise funds for the project, but discouraged him from putting it in the Fourth of July parade. I explained that, although the Town does not yet own the buoy, we certainly have a financial investment in it and are concerned that it not be damaged. I suggested again that the buoy could be stored at the Town Warehouse, but Mr. Furth told me it was not yet completed (some electrical wiring remains to be done) and that he would need to seek direction from Dr. Goreau on what to do next. Several residents have complained that the buoy should not be allowed to be parked in front of Mr. Furth's hotel, but Jeff Bowman assures me that it is allowed under the Code.

CONCLUSIONS

GCRA has not met their performance requirements under the contract, but there have been legitimate reasons for some of the delay.

The Town staff does not appear to have managed this contract, nor kept the Commission informed of the contractor's non-compliance with the terms of the contract.

The contract between the Town and GCRA is far from ideal in protecting the Town's interests and financial investment in the project. Since GCRA is technically in default with the deadlines established in the contract, assuming that the Commission wants to see this project completed, the Town should seek modifications to the contract to better protect the Town's interests.

Many individuals who are not parties to the contract between the Town and GCRA are involved in the project and seem to represent GCRA in dealings with the Town.

There may be opportunities for GCRA to raise funds from other governmental sources in order to complete the project.

I am concerned that GCRA and their various advocates are now talking of building only two solar buoys, although their contract with the Town requires they build three.

I need direction from the Commission on how you wish me to proceed.



RPL Inc.

Robert Parkinson

- Yacht & Marine Sales - Client Liaison
- Project Management for Construction & Repair

1542 South West 18 Terrace
conchfarms@hotmail.com
Telephone 954/327-7127

Fort Lauderdale FL 3312

Fax. 954/327-7127

U.S.A.

Date: 5/24/2010

Dan Clark
Cry of the Water
Dr. Tom Goreau
Global Coral Reef Alliance

Re: Lauderdale By The Sea Fish Haven Biorock reef project.

Sirs:

This letter is compiled to outline the causes & effects of events which have increased the cost of providing 3 solar powered buoys for the Lauderdale ByThe Sea Fish Haven Biorock reef project.

Over the course of several years, I have been in communications with Dr. Tom Goreau, Global Coral Reef Alliance, over the prospects of developing a solar-powered buoy system for generating required electricity to their Biorock process in 'open-water' environments. My enthusiasm for Dr. Goreau's programs and belief that it was possible, drove me to workout various early design prototype models on my own.

Needles to say I was ecstatic at the prospects of a Biorock project at Lauderdale By The Sea, while concerned about the high scrutiny such a project would be subject to. As the permitting process advanced I produced a testable '90Watt dome' for the principals to review & comment. With the positive response this was the basis of the final design, though there were expressed concerns about the limited power capability.

Shortly after the contract to manufacture the 3 buoys was initiated, it became apparent that some modifications of original 90wDome became necessary and principal contacts advised. Not unusual for a first-time-build situation.

- The source of original 9W Photovoltaic (PV) panels ceased manufacturing that size. After an extensive local, national & international search for alternatives, a producer of somewhat equivalent units was found in China. Slightly larger in physical size, with output of 12Watts each, at close to US prices including the shipping. This avenue required order minimums (allowing for 15 PV units as 'spares inventory'); plus an adjustment of buoy design to accommodate the increase in PV panels size.
- In this period, September-October-November, 2009, we had various sequence of days with strong winds at Small Craft Warnings levels in South Florida. On a visit to the Anglins fishing pier, I witnessed & photographed subsequent sea conditions in the mooring location for the buoys. It was not uncommon for waves to be impacting the pier cross members & decking, soaking visiting tourist & fishermen alike.
- It became evident there is a need to have substantial material content added to the construction of the buoys, otherwise they would require complete removal from site with each similar strong onshore wind event. Not unlike the weather we experienced a couple of weeks back.

- With the participation of engineering friends & their contacts within the marine industry, we adjusted the design, made a 50% scale model, had the design reviewed by a naval architect firm & computer modeling group. These services were all performed pro-bono as they saw the virtue of the project and wanted to participate.
- It was recommended to manufacture with Fiberglass (FRP) material. Skilled marine laminators were contracted to work on weekends at one-third less of industry rates.
- The end result was a buoy which could provide 180Watts of power (double of original design) & capable of sustaining such sea conditions.
- The increased volumetric factor (size of wet underbody) required the additions of internal stiffening, chambers for ballast control and strengthening agents for mooring system.
- Coast Guard Permitting requirement of sequential flashing lights and yellow colored gel-coat added another \$650.00 to the total cost.
- The resulting 18% increase in diameter size, additional strength of structure, Coast Guard requirements, etc., increased the manufacturing cost of original estimates.

My principal contacts where advised of the modifications, by phone, e-mail, various visits during the mold-making & manufacturing process. The concerns over timetable, volumetric size increase & possible cost factors, in that order of priority, were discussed. As I was providing assemblage labor at no cost, I believed the increasing per unit cost factors could be minimized. Not by enough.

It is with the difficult realization of no effective way to diminish the cost without sacrificing the integrity of buoy structures and the effectiveness of the project, which I am before you. \$13,700 further beyond the original estimate will be required to complete the remaining 2 buoys.

Balance in buoy manufacturing budget	\$ 3,500
Additional funding required	<u>\$13,700</u>
	\$17,200 i.e.: \$8,600 per pending buoy.

Cost analysis worksheets are available for review.

Sincerely Yours,

Robert Parkinson

**FIRST AMENDMENT TO
ARTIFICIAL REEF FISH HABITAT
CONSTRUCTION CONTRACT**

This First Amendment to Artificial Reef Fish Habitat Construction Contract (this "First Amendment") is made effective as of the 25th day of September, 2007 between **Global Coral Reef Alliance**, a New York 501(c)(3) corporation having an address of c/o Tom Goreau, 37 Pleasant St., Cambridge, Ma. 02139 ("Contractor") and the Town of Lauderdale-by-the-Sea, a Florida municipal corporation having an address of 4501 Ocean Drive, Lots 333A (the "Town"). Contractor and Town have previously executed an Artificial Reef Fish Habitat Construction Contract dated February 13, 2007 (the "Original Contract"). Contractor and Town wish to amend the Original Contract as follows:

1. Substitution of Exhibit. Exhibit "A" and "B" of the Original Contract are deleted, and Exhibits "A" and "B" attached to this First Amendment are substituted in lieu thereof.

2. Revised Payment Terms. Paragraph 2 of the Original Contract, captioned "Payment," is deleted in its entirety, and the following language is substituted therefor:

The price to be paid by the Town to Contractor for performance of the Work is \$76,480 ("Contract Sum"); this is a \$16,280 increase over the Contract Sum provided for in the Original Contract. ("Contract Sum"). The Town shall make payment of the Contract Sum as follows: \$12,000 upon execution of this Agreement, \$37,480 within five (5) calendar days following Contractor's delivery to the Town of a written draw request in the form attached as Exhibit "B" hereto, and \$27,000 within 30 calendar days following Contractor's delivery to the Town of a written draw request in the form attached as Exhibit "C" hereto.

3. Effect of Amendment. As modified by this First Amendment, the Original Contract shall continue in full force and effect.

Town:

Town of Lauderdale-by-the-Sea

By: 
Its MAA400

Contractor:

Global Coral Reef Alliance,
a New York 501(c)(3) corporation

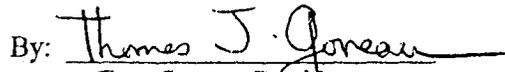
By: 
Tom Goreau, President

EXHIBIT "A"

The Work consists of the erection and operation of an artificial reef fish habitat utilizing six to eight underwater rebar structures, (each approximately 6-10 feet long, 2 feet high and 4 feet wide), metal mesh anode placed nearby, underwater insulated electrical cable, and a solar buoys power source. The site of the property where the Work is to be performed or installed is the ocean floor south of the end of the Lauderdale By The Sea ocean pier (the "Property").

The Work shall be done in the following stages:

- A. First Stage Work. Contractor will visit the Property, map the underwater site where the rebar structures are to be placed, produce a map of the boundaries of such site with GPS coordinates sufficiently detailed to meet Florida State Department of Environmental Protection ("DEP") permitting standards, and produce a written schematic design of components of the Work sufficiently detailed to meet DEP permitting standards. Contractor will then prepare, for the Town's execution and submission to the DEP, a permit for performance of the Work upon the Property.

- B. Second Stage Work. Contractor will visit the Property and complete installation of the Work, utilizing the materials referenced on page 2 of this Exhibit "A". The solar power source will be moored to the ocean floor adjacent to the site of the Work. Underwater insulated electrical lines will be extended from the solar buoys power source, to the underwater rebar structures, using scuba divers. The underwater rebar structures will be prepared offsite, trucked to the beach, and floated out to the designated project area on the ocean floor utilizing liftbags. The liftbags then will be slowly deflated, and the structures will sink into place on the ocean floor.

EXHIBIT "A" PAGE 2 OF 2

CATEGORY	AMOUNT (\$)
Electrical cable	200
½" steel rebar for 6 to 10 foot modules	2,000
Stainless steel pins, washers, nuts	600
Anode	4,500
PVC pipe	20
EQUIPMENT Three (3) solar buoys	\$15,000
mooring installations	\$7,000
Underwater compressed air drill	600
Valves and hoses needed for use of above with SCUBA tank	200
Air lift bags	240
Clamp AC/DC meter	200
SUPPLIES Epoxy 2-part liquid	100
Silicone	50
Cable ties	20
Pliers, wrenches, tools	50
Video tapes	100
Camera film	100
SERVICES Welding and cutting steel	5,000
Public outreach	1,000
MONITORING AND MAINTENANCE	12,000
Monthly inspection, monitoring, for a year	
Maintenance, operations, repair	10,000
DESIGN, CONSTRUCTION, INSTALLATION site selection, mapping, and documentation	7,000
Proposal preparation	1,000
Design of structure, technical drawings for proposal application	3,000
Transportation of modules to site	500
Patent fees	3,000
TRAVEL Boston-Fort Lauderdale	3,000
TOTAL	76,480

EXHIBIT "B"

State of Florida §
 §
County of Broward §

The undersigned represents to the Town of Lauderdale By The Sea that (A) all First Stage Work (as such term is defined in the Construction Contract between the undersigned and the Town of Lauderdale By The Sea) has been completed and (with payment of the requested draw in the amount of \$37,480) paid for; (B) with payment of the requested amount of \$37,480, the Property and the First Stage Work (as defined in said contract) is and will be free and clear of liens and encumbrances in favor of the undersigned, any subcontractor, or any other persons or entities entitled to make claims against the Property by reason of having supplied labor, materials or equipment for the Work through the date hereof; and (C) the current request for payment, in the amount of \$37,480, is due the undersigned pursuant to the terms of said contract.

Global Coral Reef Alliance

By: Thomas J. Gereau
Date of Execution: Oct 25 2007

ARTIFICIAL REEF FISH HABITAT

CONSTRUCTION CONTRACT

This Artificial Reef Fish Habitat Construction Contract (this "Agreement") is made on this 13 day of ~~September~~ ^{February} 2008 between Global Coral Reef Alliance, a New York 501(c)(3) corporation having an address of c/o Tom Goreau, 37 Pleasant St., Cambridge, Ma. 02139 ("Contractor") and the Town of Lauderdale-by-the-Sea, a Florida municipal corporation having an address of 4501 OCEAN DR, LBS, FL 33308 (the "Town"). This Agreement relates to the performance by Contractor of certain work described below and the terms of payment for such work by the Town.

1. Description of Work. Contractor shall perform the services identified on Exhibit "A" attached hereto (the "Work").
2. Owner's Notices, Stage Deadlines. The Work is to be done in stages. The stages are identified on Exhibit "A" attached hereto. The first stage is to be performed within 60 calendar days after the date of execution of this Agreement. The second stage is to be performed within 60 calendar days after issuance of a written permit for the Work by the Florida State Department of Environmental Protection.
3. Payment. The price to be paid by the Town to Contractor for performance of the Work is \$60,280 ("Contract Sum"). The Town shall make payment of the Contract Sum as follows: \$12,000 upon execution of this Agreement, \$21,280 within five (5) calendar days following Contractor's delivery to the Town of a written draw request in the form attached as Exhibit "B" hereto, and \$27,000 within 30 calendar days following Contractor's delivery to the Town of a written draw request in the form attached as Exhibit "C" hereto.
4. Duties and Rights of Contractor. Contractor's duties and rights in connection with the Work are as follows:
 - (a) Responsibility for and Supervision of Work. Contractor is an independent contractor and shall be solely responsible for all Work under this Agreement, including Work techniques, sequences, procedures, and means, and for coordination of all portions of the Work. Contractor shall supervise and direct the Work to the best of its ability, and give it all attention necessary for proper supervision and direction.
 - (b) Furnishing of Labor, Materials, Etc. Contractor shall provide and pay for all materials and equipment, including tools, construction equipment, and machinery, and all other facilities, labor and services necessary for the proper completion of the Work in accordance with written plans and specifications therefore submitted to the Florida Department of Environmental Protection, and in accordance with the line item budget attached as Exhibit "B" hereto. Savings of up to 20% in any line item

costs may be re-allocated to other line items, except that the "Monitoring and Maintenance" line item totaling \$22,000 shall not be reduced or re-allocated.

- (c) Compliance with Construction Laws and Regulations; Building Permit and Code Inspection Fees. Contractor shall comply with all state and municipal laws, ordinances, rules, and regulations relating to the performance of the Work by Contractor, provided, however, that the Town will not require any building permits or other permits or payment of any fees in connection with the Work, and the Town will pay all electricity bills incurred to power the Work.

5. INDEMNIFICATION. CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE TOWN AND FISHERMAN'S PIER INC. D/B/A ANGLIN'S FISHING PIER FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES (INCLUDING ATTORNEYS FEES) ARISING OUT OF OR RESULTING FROM PERFORMANCE OF THE WORK.

6. Contractor Independent. It is understood that the relationship of Contractor to the Town shall be that of an independent contractor. Nothing contained herein or inferable herefrom shall be deemed or construed to (i) make Contractor the servant or employee of the Town, or (ii) create any partnership or joint venture between the Town and Contractor. The Town is not responsible for any wages or any insurance or other benefits (including without limitation income tax withholdings, worker's compensation insurance, social security, retirement or leave benefits) for Contractor or Contractor's agents or employees.

7. Lien Waivers. Contractor shall deliver to the Town: partial and final (full) written waivers of lien rights, executed and delivered by Contractor, in the forms attached as Exhibit "B" and "C" hereto. Contractor will also keep a list of all material suppliers and subcontractors and employees, and the amounts paid each of them for labor and/or materials supplied for the Work, for review by the Town from time to time upon request.

8. Events of Default. It shall be an "Event of Default" if a party shall fail to materially keep or perform any of the terms, conditions or covenants contained in this Agreement to be performed or observed by it, and such party does not remedy its failure within 20 calendar days after written notice of default and demand for cure from the other party. Notices shall be addressed to the parties at the addresses referenced on page 1 of this Agreement.

9. Remedies. Upon the occurrence of an Event of Default by Contractor or the Town, the other party shall have and shall be entitled to exercise any and all rights and remedies permitted by Florida law.

10. Attorney's Fees, Court Costs. In the event of any lawsuit arising out of or concerning the terms of this Agreement, the prevailing party in such lawsuit shall be entitled to recover in reasonable attorney's fees, court costs and expenses.

11. No Third Party Beneficiaries. Nothing herein expressed or implied is intended to confer on any person, other than the parties hereto or their respective assigns or successors, any rights, remedies, obligations or liabilities under or by reason of this Agreement, except that the indemnification of Fisherman's Pier Inc. by Contractor contained in Paragraph 5 above may be relied upon by Fisherman's Pier Inc. and enforced against Contractor.

12. Performance. Time is of the essence in the performance of all duties, covenants and obligations hereunder.

13. Entire Agreement. This instrument sets forth all agreements between the Town and Contractor, and all prior negotiations and agreements are merged herein. No modification hereof, or subsequent agreement relative to the subject matter hereof, shall be binding unless reduced to a writing signed by the party to be bound.

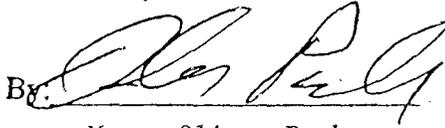
14. Florida Law. This instrument shall be construed and enforced in accordance with the laws of the State of Florida. Venue shall be only in Broward County, Florida.

Town:

Contractor:

Town of Lauderdale-by-the-Sea

Global Coral Reef Alliance,
a New York 501(c)(3) corporation

By: 
Mayor Oliver Parker

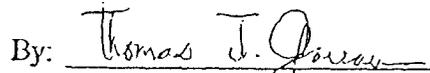
By: 
Tom Goreau, President

EXHIBIT "A"

The Work consists of the erection and operation of an artificial reef fish habitat utilizing six to eight underwater rebar structures, (each approximately 6-10 feet long, 2 feet high and 4 feet wide), metal mesh anode placed nearby, underwater insulated electrical cable, and a DC power source supplying 1.5V to 6V power mounted on the Lauderdale By The Sea ocean pier. The site of the property where the Work is to be performed or installed is (i) Lauderdale By The Sea ocean pier, and (ii) the ocean floor within a 400 yard distance of the end of such pier (collectively, the "Property").

The Work shall be done in the following stages:

- A. First Stage Work. Contractor will visit the Property, map the underwater site where the rebar structures are to be placed, produce a map of the boundaries of such site with GPS coordinates sufficiently detailed to meet Florida State Department of Environmental Protection ("DEP") permitting standards, and produce a written schematic design of components of the Work sufficiently detailed to meet DEP permitting standards. Contractor will then prepare, for the Town's execution and submission to the DEP, a permit for performance of the Work upon the Property.

- B. Second Stage Work. Contractor will visit the Property and complete installation of the Work, utilizing the materials referenced on page 2 of this Exhibit "A". The DC power source will be located on the outer end of the Lauderdale By The Sea ocean pier. Underwater insulated electrical lines will be extended from the DC power source, along the ocean bottom, to the underwater rebar structures, using scuba divers. The underwater rebar structures will be prepared offsite, trucked to the beach, and floated out to the designated project area on the ocean floor utilizing liftbags. The liftbags then will be slowly deflated, and the structures will sink into place on the ocean floor.

EXHIBIT "A" PAGE 2 OF 2

CATEGORY	AMOUNT (\$)
Electrical cable 1000 feet AWG 10 triply clad insulation	2,000
½" steel rebar for 8 to 10 foot modules	2,000
Stainless steel pins, washers, nuts	600
Anode	4,500
PVC pipe	20
EQUIPMENT Power supply, controllers and monitoring equipment, weblinked	4,000
Underwater compressed air drill	600
Valves and hoses needed for use of above with SCUBA tank	200
Air lift bags	240
Clamp AC/DC meter	200
SUPPLIES Epoxy 2-part liquid	100
Silicone	50
Cable ties	20
Pliers, wrenches, tools	50
Video tapes	100
Camera film	100
SERVICES Welding and cutting steel	5,000
Public outreach	1,000
MONITORING AND MAINTENANCE	12,000
Monthly inspection, monitoring, for a year	
Maintenance, operations, repair	10,000
DESIGN, CONSTRUCTION, INSTALLATION site selection, mapping, and documentation	7,000
Proposal preparation	1,000
Design of structure, technical drawings for proposal application	3,000
Transportation of modules to site	500
Patent fees	3,000
TRAVEL Boston-Fort Lauderdale	3,000
TOTAL	60,280

EXHIBIT "B"

State of Florida §
 §
County of Broward §

The undersigned represents to the Town of Lauderdale By The Sea that (A) all First Stage Work (as such term is defined in the Construction Contract between the undersigned and the Town of Lauderdale By The Sea) has been completed and (with payment of the requested draw in the amount of \$21,280) paid for; (B) with payment of the requested amount of \$21,280, the Property and the First Stage Work (as defined in said contract) is and will be free and clear of liens and encumbrances in favor of the undersigned, any subcontractor, or any other persons or entities entitled to make claims against the Property by reason of having supplied labor, materials or equipment for the Work through the date hereof; and (C) the current request for payment, in the amount of \$21,280, is due the undersigned pursuant to the terms of said contract.

Global Coral Reef Alliance

By: _____
Date of Execution: _____

EXHIBIT "C"

State of Florida §
 §
County of Broward §

The undersigned represents to the Town of Lauderdale By The Sea that (A) all First and Second Stage Work (as such term is defined in the Construction Contract between the undersigned and the Town of Lauderdale By The Sea) has been completed and (with payment of the requested draw in the amount of \$27,000) paid for; (B) with payment of the requested amount of \$27,000, the Property and the First and Second Stage Work (as defined in said contract) is and will be free and clear of liens and encumbrances in favor of the undersigned, any subcontractor, or any other persons or entities entitled to make claims against the Property by reason of having supplied labor, materials or equipment for the Work through the date hereof; and (C) the current request for payment, in the amount of \$27,000, is due the undersigned pursuant to the terms of said contract.

Global Coral Reef Alliance

By: _____

Date of Execution: _____