VILLAGE OF KEY BISCAYNE

Office of the Village Manager

MEMORANDUM

Village Council
Franklin H. Caplan, *Mayor*
Michael E. Kelly, *Vice Mayor*
Michael W. Davey
Enrique Garcia
Robert Gusman
Mayra P. Lindsay
James S. Taintor

Village Manager
John C. Gilbert

DATE: June 26th, 2012

TO: Honorable Mayor and Members of the Village Council

FROM: John C. Gilbert, Village Manager

RE: Capital Improvement Beach Renourishment Project

RECOMMENDATION

It is recommended that the Village Council approve the attached Resolution approving the proposal submitted by Coastal Systems International, Inc. (CSI), attached as Exhibit "A" relating to the beach renourishment project authorizing the Village Manager to execute an additional work order consistent with the terms of the proposal in order to complete project. Additionally, CSI has made the recommendation to complete the beach renourishment project with the maximum amount of fill utilizing the equipment and source of sand at the current project.

The additional cost of the proposed work order is not to exceed $244,000, including the permitting cost. Funding for this project has been allocated from the 2012 Capital Improvement Plan.

BACKGROUND

On June 26th, 2012, Council was briefed by Mr. Tim Blankenship P.E., Director of Coastal Systems International, Inc., for the need of an additional 9,750 tons of beach compatiable fill in order to complete the beach renourishment project. As presented, in the northern area of the project, the segrass limits receded seaward (to the east), and in the southern area of the project the seagrass limits accreted landward (to the west). An iterative process was conducted to maximize the fill volume, and an additional amount (9,750 tons) is required to fill the templates without impacting seagrass.

At the June 26th Council Meeting, Council expressed the desire to possibly utilize the excess fill at the Oceana site (a.k.a. Sonesta) as an alternative to complete the project. The Army Corps. of Engineers permit only authorizes one placement per year and does not authorize concurrent annual placements; thereby, any additional placement in less than two (2) years would likely require reconsultation with National Marine Fisheries Service

(NMFS) and other federal commenting agencies such as, U.S. Fish and Wildlife Service. Additionally, this would involve an estimated cost of $140,000 for remobilization plus an additional permit modification, an updated second set of as-builts and other post-construction surveys required by the permitting process. There are also concerns with sand quality (and quantity) based on slurry wall and grout method of construction at the Oceana site.

The cost differential spreadsheet is being prepared by CSI and will be provided to Council at the July 3rd Council Meeting.

RESOLUTION NO. 2012 - _____

A CAPITAL PROJECT AUTHORIZING RESOLUTION OF THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, APPROVING A CHANGE ORDER TO THE AGREEMENT BETWEEN THE VILLAGE AND EASTMAN AGGREGATE ENTERPRISES, LLC FOR THE BEACH RENOURISHMENT PROJECT; PROVIDING FOR AUTHORIZATION; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, on April 24, 2012, the Village of Key Biscayne (the "Village") entered into an Agreement with Eastman Aggregate Enterprises, LLC for the construction of the Village's Beach Renourishment Project (the "Project"); and

WHEREAS, the Village's Engineer for the Project, Coastal Systems International, Inc., has recently advised the Village that a change order consisting of an additional 9,500 tons of fill costing $244,000, as further described in Exhibit "A," is necessary to complete the Project (the "Change Order"); and

WHEREAS, the Village Council desires to approve the Change Order in order to complete the Project and authorize the Village Manager to execute the same; and

WHEREAS, the Village Council finds that this Resolution is in the best interest and welfare of the residents of the Village.

NOW, THEREFORE, BE IT RESOLVED BY THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AS FOLLOWS:

Section 1. **Recitals Adopted.** Each of the above stated recitals are hereby adopted, confirmed and incorporated herein.

Section 2. **Change Order Approved.** The Village Council hereby approves the Change Order attached as Exhibit "A."

Section 3. **Village Manager Authorized.** The Village Manager is hereby authorized to execute the Change Order attached as Exhibit "A."

Section 4. **Effective Date.** This Resolution shall be effective immediately upon adoption.

PASSED AND ADOPTED this 3rd day of July, 2012.

_____
FRANK CAPLAN, MAYOR

ATTEST:

_____
CONCHITA H. ALVAREZ, CMC
VILLAGE CLERK

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY

_____
Village Attorney

Exhibit A

Project: Village of Key Biscayne Beach Renourishment
Construction Cost Summary - Initial Values and Change Order
June 28, 2012

Initial Design: 31,000 cubic yards (46,500 tons)

Item #	Description	Cost	Unit Cost (per ton)	Notes
1	Mobilization/ Demobilization	$140,072.00	$3.01	Does not apply to Change Order
2	Beach Fill	$1,187,145.00	$25.53	
3	Geotechnical Testing	$6,804.00	$0.15	
4	Beach Tilling	$16,125.00	$0.35	
5	Turbidity Monitoring	$28,165.00	$0.61	
6	Vibration Control and Monitoring	$66,112.00	$1.42	
7	Tolls	$24,918.75	$11.25	Unit Cost is per truck hauling 21 tons
8	Performance Bond	$22,040.13	$0.47	
9	* Owner Contingency 5%	$78,493.78	$1.69	Does not apply to Change Order

Total Unit Price per ton for Change Order
(excluding tolls, contingency & mobilization/demobilization): $28.52

Modified Design: 37,500 cubic yards (56,250 tons)
Additional Material : 6,500 cubic yards (9,750 tons)

Change Order Request

Item	Description	Quantity	Unit Cost	TOTAL
1	Beach Fill (tons)	9750	$28.52	**$278,070.00**
2	Tolls (loads)	443	$11.25	**$4,983.75**
3	*Seaweed Removal (days)	6	$2,500.00	**$15,000.00**

Total Construction Change Order **$298,053.75**

Additional Consulting Fees (See enclosed Coastal Systems Proposal)

	DESCRIPTION	Director	Sr. Project Manager	Proj Manager	Scientist	CADD	AA	Subtotal	TOTALS
Part 4 Permit Modifications									
a.	Permit Modifications	6	18	46	33	46	12	$ 19,710	$ 24,845
b.	Seaweed Processing	2	7.5		26		3	$ 5,135	

Grand Total $322,898.75
Grand Total After Contingency is Applied **$244,404.97**

* The remaining balance of the Owner Contingency is $63,493.78.

COASTAL SYSTEMS INTERNATIONAL, INC.
464 South Dixie Highway • Coral Gables, Florida 33146
Tel: 305-661-3655 • Fax: 305-661-1914
www.coastalsystemsint.com

135040.02-A5

June 22, 2012

Mr. John Gilbert, Village Manager
VILLAGE OF KEY BISCAYNE
88 West McIntyre Street
Key Biscayne, Florida 33149

RE: PERMIT MODIFICATION REQUESTS FOR THE VILLAGE OF KEY BISCAYNE BEACH RENOURISHMENT PROJECT, VILLAGE OF KEY BISCAYNE, MIAMI-DADE COUNTY, FLORIDA

Dear Mr. Gilbert:

Pursuant to our recent discussions, this is to submit a Proposal Addendum to the Village of Key Biscayne (Village) for consulting services related to modifying the permits issued by the Miami-Dade County Permitting, Environment and Regulatory Affairs Department (PERA), Florida Department of Environmental Protection (DEP), and U.S. Army Corps of Engineers (Corps) authorizing the Key Biscayne Beach Renourishment Project (Project).

Pre-construction beach profile surveys and pre-construction biological resource assessments were conducted in late May 2012, as required by environmental regulatory permits, pursuant to Parts 15(b) and 17(a)(i) of our Contract with the Village. This surveying must be conducted immediately prior to commencement of construction to document the current physical and biological beach and resource conditions. Additionally, the Project permits require the seagrass survey to be conducted during the seagrass growing season, which is from June 1 through September 30. The Project was redesigned under Part 14 of our Contract with the Village to account for changes in the elevation of the beach due to continued erosion since the time of application and natural fluctuations in the limits of the seagrass beds just offshore of the Village.

Based upon an engineering analysis of the information obtained during the preconstruction physical and biological surveys and the redesign of the beach within the permitted construction templates, Coastal Systems recommends placement of additional sand to provide minimal storm protection to the Village and to take advantage of the current contractor mobilization. Prior to placement of the additional recommended fill volume, modifications to the environmental permits are required. This scope of services includes preparation and processing of permit modification requests to PERA, DEP, and the Corps by Coastal Systems.

The following work task describes the scope of work to be performed by Coastal Systems to prepare and process environmental permit modifications for the Village:

PART 4 – PERMIT MODIFICATION REQUEST AND PROCESSING

a. **Permit Modification Request and Processing:** Coastal Systems will prepare and process permit modification requests to PERA, DEP, and the Corps seeking expedited authorization of the proposed Project revisions. An exhibit will be prepared in support of the requests depicting the permitted and proposed construction toe of fill (CTOF), the 2010 and 2012 surveyed seagrass limits, the permitted and proposed equilibrium toe of fill (ETOF) based upon the DEAN Method, and the permitted ETOF based upon the Profile Translation Method overlaid on current aerial photography of the Project site. The Modification Requests will seek authorization for the placement of an additional 6,500 cubic yards of fill material within the redesigned beach fill template. Coastal Systems will coordinate with agency staff to facilitate an expedited review of the modification requests, including preparation of responses to agency Requests for Additional Information (RAI), to ensure no lapse in contractor production rates. The Village will provide the agencies with required permit modification fees (amounts to be determined).

b. **Wrack Line Processing:** Excessive amounts of seaweed have been deposited along the shoreline of the Project, and Coastal Systems has been coordinating with Village staff, the Village beach maintenance contractor, the construction contractor, and the environmental agency compliance staff. The remainder of the permitting budget was allocated to these services from the PERA processing budget under the previous contract to begin the permit modification process to place the excess seaweed in selected areas of the dune. Additional budget is required to address the compliance issues to collect and place the seaweed in the Crandon Park area, and to address the unauthorized placement of seaweed in selected areas of the dunes.

GENERAL

These services will be provided as an Addendum to Coastal Systems' agreement with the Village dated August 1, 2006. This Addendum is subject to the original agreement terms and conditions and is valid to be executed for sixty (60) days. Fees and expenses will be invoiced each month in accordance with our existing agreement with the Village.

Please return an executed copy of this Addendum or a Notice to Proceed, which will serve as our authorization to proceed with the scope of services herein. We look forward to continuing to work with the Village through the implementation of this beach renourishment project. Should you have any questions or require additional information, please do not hesitate to contact Ms. Penny Cutt at 561-478-1004 ext. 311 or pcutt@coastalsystemsint.com or me at 305-669-8650 or tblankenship@coastalsystemsint.com.

Sincerely,
COASTAL SYSTEMS INTERNATIONAL, INC.

Timothy K. Blankenship, P.E.
Director

DATE:

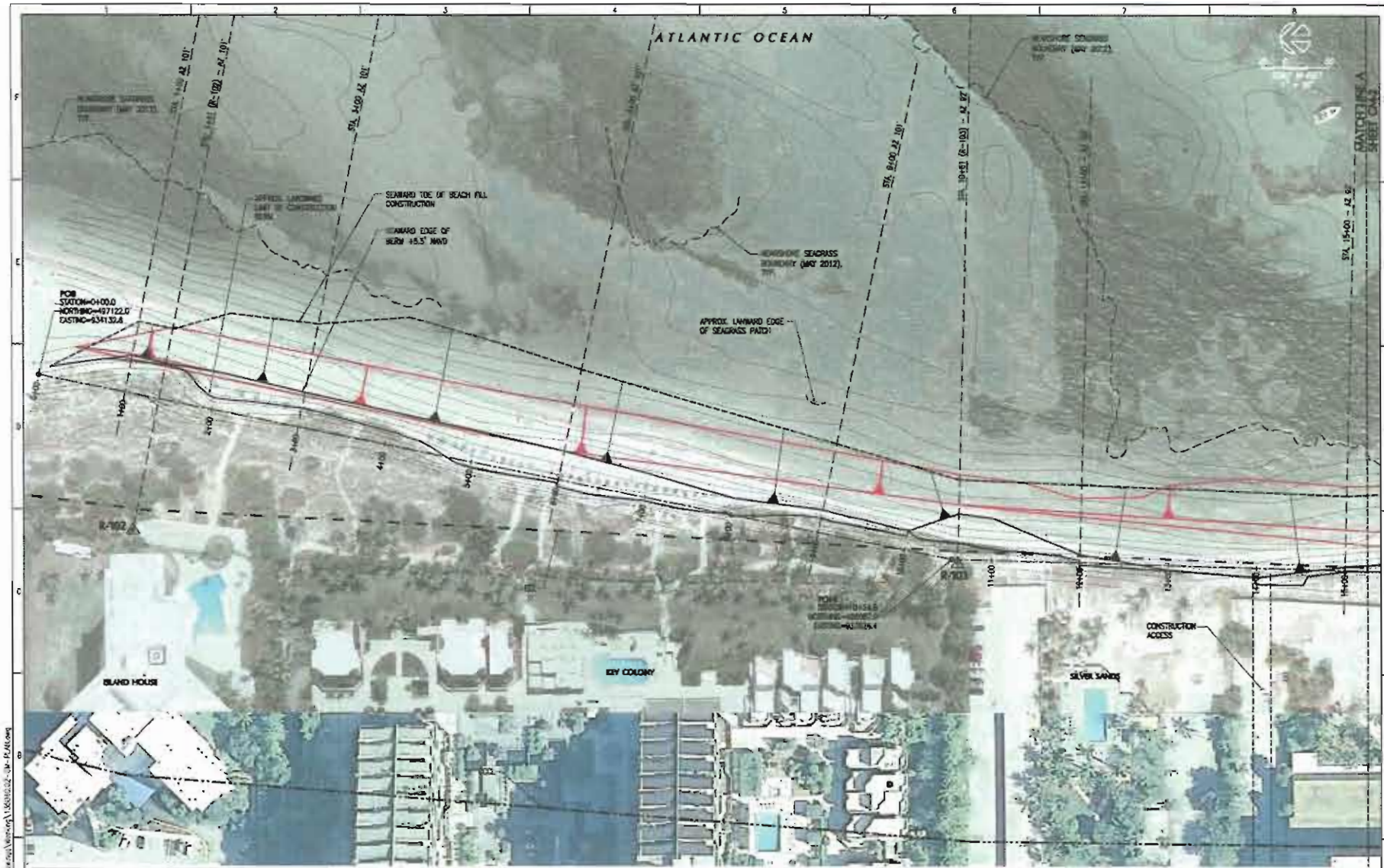
SIGNED: _____ _____
VILLAGE OF KEY BISCAYNE

PRINT: _____
Name **Title**

TKB:PC:mr

Enclosures

File, TKB, CJB, LMS, PC, DM, Contract Book, Accounting
F:\Project\135040.02\Proposals\(12-06-21) PRO J Gilbert A-5 Permit Modification.docx



LEGEND

PROPOSED BEACH FILL	CCCL
R-107 DEP REFERENCE MONUMENT	CONTOUR
	SEAGRASS BOUNDARY (MAY 2012)
SLOPE DIRECTION	CONSTRUCTION BASELINE
ECL	ZTOF (DEAN METHOD)

NOTES
1. REFER TO SHEET C-2 FOR SURVEY AND GENERAL NOTES INFORMATION.
2. REFER TO SHEETS CM-5 TO CM-13 FOR SECTIONS.

NOTE:
ALL SCALES INDICATED PERTAIN TO FULL SIZE DRAWINGS (24"x36")

KEY BISCAYNE BEACH RENOURISHMENT PROJECT

VILLAGE OF KEY BISCAYNE FLORIDA

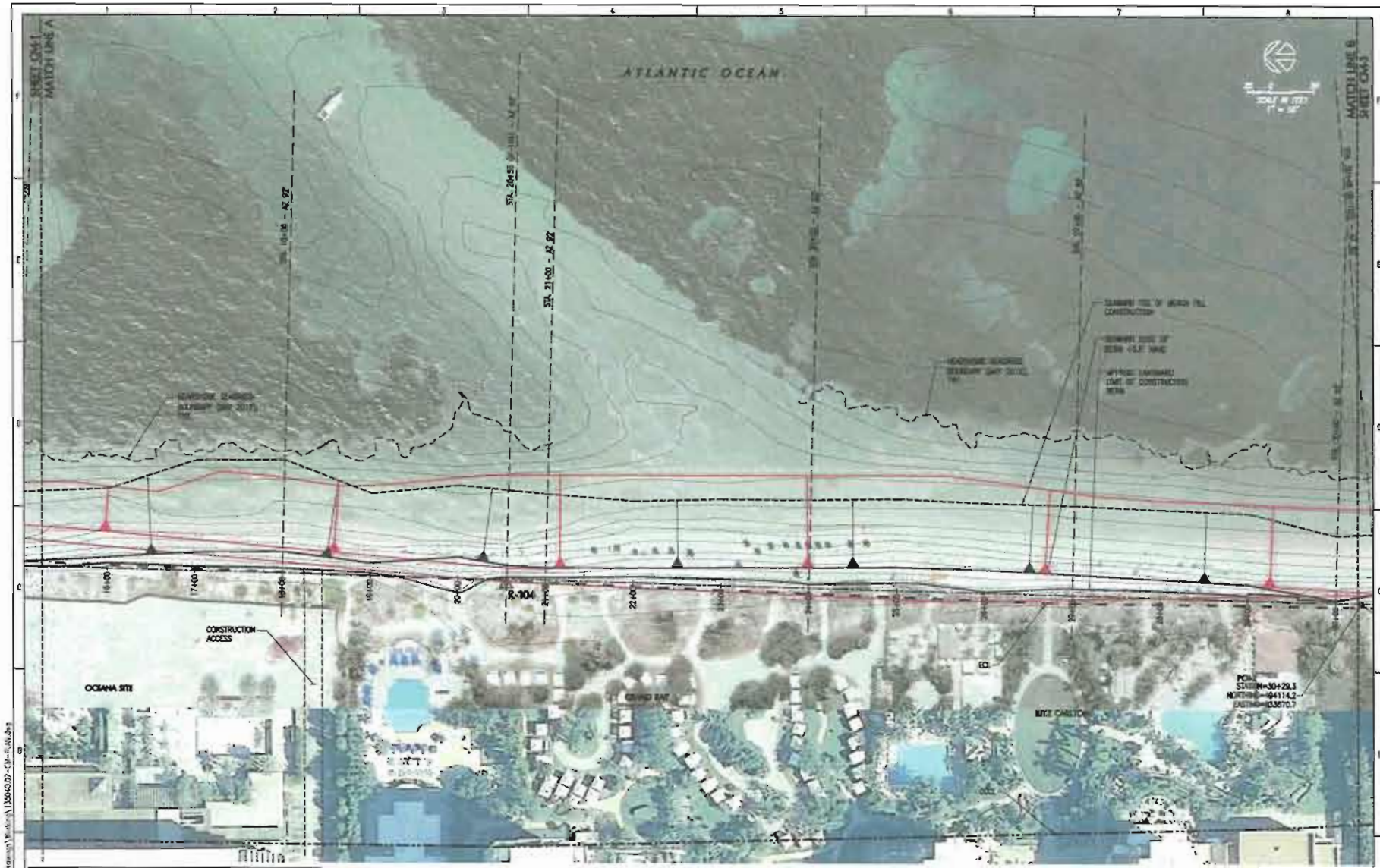
COASTAL SYSTEMS INTERNATIONAL, INC.

THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

06/18/12	ISSUED FOR CONSTRUCTION
04/30/12	100% SUBMITTAL

BEACH FILL PLAN
STA. 0+00 - 15+00

CM-1



LEGEND

PROPOSED BEACH FILL	CCCL
R-107 DEP REFERENCE MONUMENT	CONTOUR
	SEAGRASS BOUNDARY (MAY 2012)
SLOPE DIRECTION	CONSTRUCTION BASELINE
ECL	ETOF (DEAN METHOD)

NOTES

1. REFER TO SHEET G-2 FOR SURVEY AND GENERAL NOTES INFORMATION.
2. REFER TO SHEETS CM-5 TO CM-13 FOR SECTIONS.

NOTE:
ALL SCALES INDICATED PERTAIN TO FULL SIZE DRAWINGS (24"x36")

KEY BISCAYNE BEACH RENOURISHMENT PROJECT

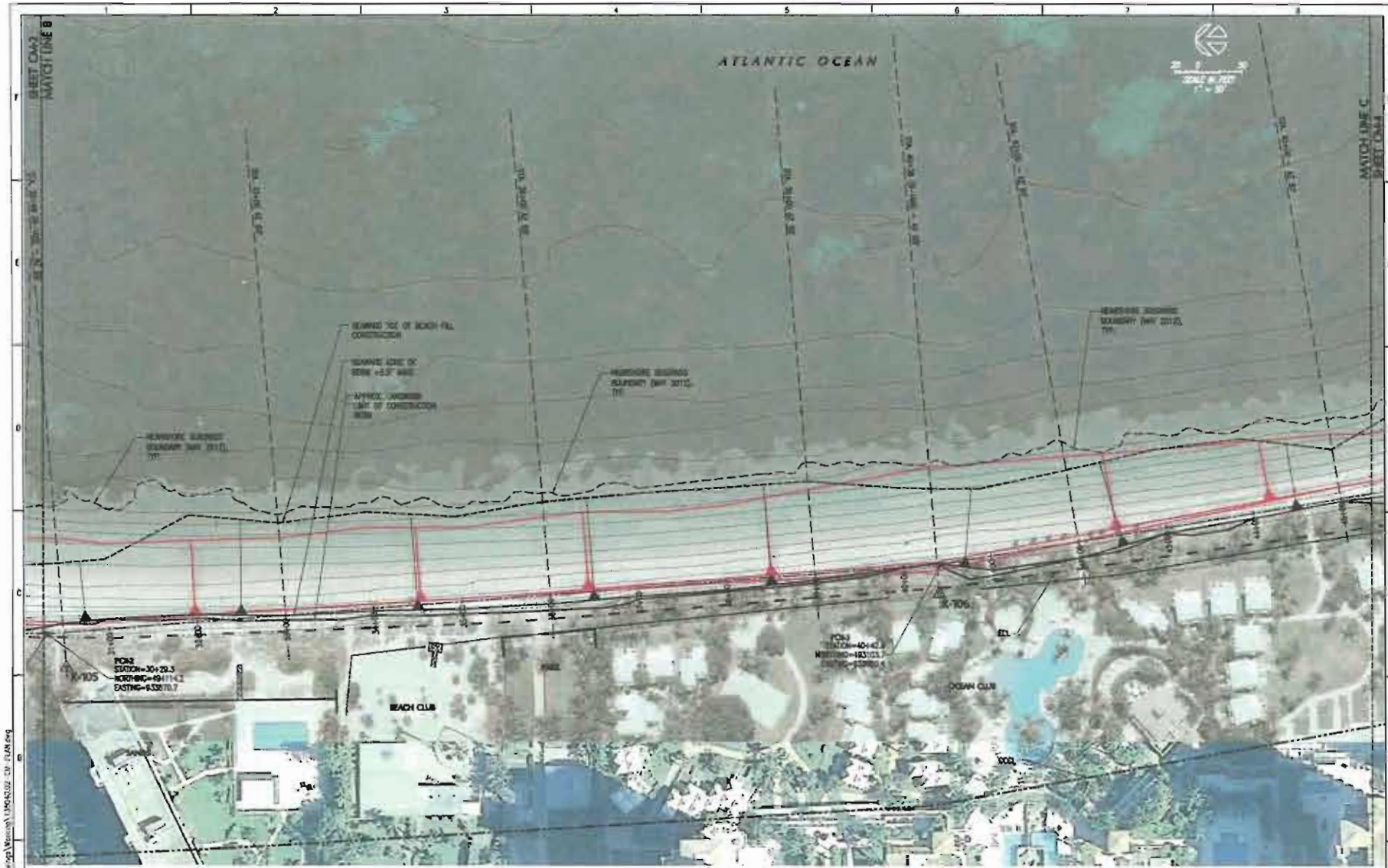
VILLAGE OF KEY BISCAYNE FLORIDA

COASTAL SYSTEMS INTERNATIONAL, INC.

THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

BEACH FILL PLAN
STA. 16+00 - 30+00

CM-2



LEGEND

- PROPOSED BEACH FILL
- R-107 DEP REFERENCE MONUMENT
- SLOPE DIRECTION
- ECL
- COCL
- CONTOUR
- SEAGRASS BOUNDARY (MAY 2012)
- CONSTRUCTION BASELINE
- ETOF (DEAN METHOD)

NOTES
1. REFER TO SHEET G-2 FOR SURVEY AND GENERAL NOTES INFORMATION.
2. REFER TO SHEETS CM-5 TO CM-13 FOR SECTIONS.

NOTE:
ALL SCALES INDICATED PERTAIN TO FULL SIZE DRAWINGS (24"x36")

KEY BISCAYNE BEACH RENOURISHMENT PROJECT

VILLAGE OF KEY BISCAYNE FLORIDA

COASTAL SYSTEMS INTERNATIONAL, INC.

THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

06/18/12 ISSUED FOR CONSTRUCTION
04/20/12 100% SUBMITTAL

BEACH FILL PLAN
STA. 31+00 - 45+00

CM-3

LEGEND

PROPOSED BEACH FILL	CCCL
R-107 DEP REFERENCE MONUMENT	CONTOUR
	SEAGRASS BOUNDARY (MAY 2012)
SLOPE DIRECTION	CONSTRUCTION BASELINE
ECL	ETOF (DEAN METHOD)

NOTES
1. REFER TO SHEET G-2 FOR SURVEY AND GENERAL NOTES INFORMATION.
2. REFER TO SHEETS CM-5 TO CM-13 FOR SECTIONS.

NOTE:
ALL SCALES INDICATED PERTAIN TO FULL SIZE DRAWINGS (24"x36")

KEY BISCAYNE BEACH RENOURISHMENT PROJECT

VILLAGE OF KEY BISCAYNE FLORIDA

COASTAL SYSTEMS INTERNATIONAL, INC.

THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

06/19/12	ISSUED FOR CONSTRUCTION	
04/30/12	100% SUBMITTAL	

BEACH FILL PLAN
STA. 46+00 - 58+88

CM-4

COASTAL SYSTEMS INTERNATIONAL, INC.
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135040.02

June 22, 2012

Mr. John Gilbert
Village Manager
VILLAGE OF KEY BISCAYNE
88 West McIntyre Street
Key Biscayne, Florida 33149

RE: BEACH CONSTRUCTION – ADDITIONAL BEACH FILL REQUEST - VILLAGE OF KEY BISCAYNE BEACH NOURISHMENT, MIAMI-DADE COUNTY, FLORIDA

Dear Mr. Gilbert:

We are pleased with the progress of the beach nourishment project (Project) that commenced on June 4, 2012. Pursuant to our recent discussions, Coastal Systems has completed the pre-construction biological surveys (seagrass mapping) and the pre-construction beach profile (cross section surveys). Based on the results of these surveys, there has been additional beach erosion since the beach was designed utilizing the 2010 monitoring data provided by the County. Therefore, additional beach fill is required. Concurrently, there have been changes in the seagrass limits, which further required beach fill redesign.

The purpose of this letter is to summarize the beach design changes, additional construction budget and consulting fee requests, and to discuss the ongoing seaweed management.

Summary of the Beach Fill Design Changes

The environmental permit conditions require pre-construction seagrass mapping and beach profile surveys. Permit conditions do not allow seagrass mapping to be conducted prior to the federal growing season, which is June 1. These surveys were conducted immediately prior to the June 4 construction commencement. Coastal Systems worked closely with the beach construction contractor to make minor adjustments in the beach fill templates within the north section of the project to not delay the beach construction as the seagrass mapping data was post-processed and reviewed by biologists. In the northern area of the Project, the seagrass limits receded seaward (to the east), and in the southern area of the Project the seagrass limits accreted landward (to the west). An iterative process was conducted to maximize the fill volume, and an additional 9,750 tons is required to fill the templates without impacting seagrass. Detailed, additional analyses were performed to evaluate the Equilibrium Toe of Fill (ETOF) to avoid impacts to the adjacent nearshore seagrass. In order to maximize the amount of fill, an iterative process was performed to optimize the design. However, the permitted design does not provide the minimal shore protection at two R-monuments, and this modified design does not provide the

minimal shore protection at a total of three R-monuments based on the coastal engineering analysis results.

The revised beach fill design is enclosed with this letter, as Sheets CM-1 through CM-4 from the beach renourishment construction plans. These plans include the previous permitted beach fill plan (in red) for reference. The permit conditions require environmental permit modifications for any increase in the fill templates above the 31,000 cubic yard permitted volume, and this process has commenced.

Additional Fill Request

A 5% contingency was included in the original bid estimate and construction contract for the Project, as beach renourishment projects are routinely adjusted upwards (or downwards) due to the dynamic beach environment. The enclosed spreadsheet provides the original contract schedule of values, totaling $1,569,875.66. A portion of the contingency is being utilized for the seaweed removal, which is discussed in the below paragraphs. Based on the additional volume (tonnage), an estimated 9,750 tons is required to fill the templates, which will result in an increase of $283,053.75 to the construction contract. The total contract value with this change order would be $1,852,929.41. The enclosed spreadsheet provides the contract unit price estimate and the quantity of beach fill. The additional fill placement will require approximately 5-8 working days, and should not impact the 45-day construction schedule based on current production rates.

Additional Fees – Permit Modification Processing

The environmental agencies were consulted on the increase in volume, and meetings were conducted with two of the agencies on site to review the requested additional fill material. Permit modifications are required, and Coastal Systems commenced the permit modification request process through the 3 environmental agencies on June 14, 2012. Through the expedited review process, permit modifications are anticipated by the end of next week. This schedule will not impact the ongoing construction. A request for additional information (RAI) was received today, and a response will be prepared by Tuesday of next week to address the technical engineering questions. In addition, Coastal Systems has been providing additional consulting services relative to the excessive seaweed. Enclosed is a proposal for additional services, totaling $24,800.

Seaweed Cleaning

Excessive amounts of seaweed, significantly above normal volumes of seaweed, have been deposited on the beach over the past two months. The seaweed is impacting construction activities, as fill cannot be placed on top of the seaweed to complete the beach fill template. The beach construction contractor provided a day rate of $2,500 per day to mobilize an additional two (2) pieces of construction equipment (front-end loaders) and an off-road dump truck to remove the excessive seaweed from the beach to facilitate fill placement. These operations will continue as needed during the construction so the beach construction schedule of 30-45 days will not be delayed. Coastal Systems coordinated with the Village to authorize this work to

commence utilizing the contingency budget in the construction contract so as not to delay construction.

Coastal Systems recommends the Village authorize the additional fill volume, and a change order to the construction contract can be processed. In addition, Coastal Systems respectfully requests authorization of the additional consulting fees to process the permit modifications. We are available to present and to review this letter with supporting documentation at the next Village Council meeting, as a timely response is required to maintain the construction schedule.

Sincerely,
COASTAL SYSTEMS INTERNATIONAL, INC.

Timothy K. Blankenship, P.E.
Director

Enclosures

TKB:mr

File, TKB, MA, PC, DM, YC
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