

SECOND AMENDMENT TO RESTATED AGREEMENT BETWEEN BROWARD COUNTY AND
LIFTECH CONSULTANTS, INC. FOR CONSULTANT ENGINEERING SERVICES FOR CRANES
(RLI # N1038712R1)

This Second Amendment ("Second Amendment") to the Restated Agreement between Broward County and Liftech Consultants, Inc., for Consultant Engineering Services for Cranes is entered into by Broward County, a political subdivision of the state of Florida ("County"), and Liftech Consultants, Inc., a California corporation authorized to transact business in the state of Florida ("Consultant") (collectively referred to as the "Parties").

RECITALS

A. The Parties entered into that certain Restated Agreement between Broward County and Liftech Consultants, Inc., for Consultant Engineering Services for Cranes, dated April 8, 2016 (the "Restated Agreement"), to provide for consultant engineering services for container gantry cranes.

B. The Parties entered into a First Amendment to the Restated Agreement, dated March 14, 2017 (the "First Amendment"), to provide for a feasibility study to consider improvements to the existing cranes and revisions of the design documents for completion of the project. The Restated Agreement, as amended by the First Amendment, is hereinafter referred to as the "Agreement."

C. The Parties desire to further amend the Agreement to provide for additional scope of services and related compensation in Phase 3 (as shown in Exhibit A-2) for crane construction support services consisting of inspection, auditing, project management, and commissioning of the three super post-panamax container gantry cranes.

D. The additional compensation consists of a combination of a maximum not-to-exceed amount and lump sum amount in the total amount of \$1,250,929, and additional potential reimbursable costs in the amount of \$93,650, resulting in a total increase of \$1,344,579.

E. County has determined that the additional scope of services and related compensation for crane construction support services are in the County's best interest.

F. The Parties met and negotiated the additional scope of services and related compensation, all in accordance with the Broward County Procurement Code, and this Second Amendment to the Agreement incorporates the results of such negotiation.

NOW, THEREFORE, IN CONSIDERATION of the mutual terms, conditions, promises, covenants, and payments hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. The above Recitals are true and correct and are incorporated herein as if set forth in full hereunder.
2. Amendments made to the Agreement by this Second Amendment are indicated by use of strikethroughs to indicate deletions and underlining to indicate additions, unless otherwise stated.
3. All references to "Exhibits A and A-1" in Sections 3.1, 4.1, 4.2, and 7.3 of the Agreement are hereby revised to reference "Exhibits A, A-1, and A-2."
4. Section 5.1 of the Agreement is hereby amended, in part, to read as follows (original underlining omitted):

5.1 AMOUNT AND METHOD OF COMPENSATION

5.1.1 Maximum Amount Not-To-Exceed Compensation. Compensation to Consultant for the performance of Basic Services and attendance at meetings and site visits in the U.S. and abroad at site of crane manufacturer for Phase 2 identified in Exhibits A and A-1 as payable on a "Maximum Amount Not-To-Exceed" basis, and as otherwise required by this Agreement, shall be based upon the Salary Costs as described in Section 5.2 up to a Maximum Amount Not-To-Exceed of Seven Hundred Forty-nine Thousand Four Hundred Seventeen Dollars (\$749,417.00). The Maximum Amount Not-To-Exceed compensation of Seven Hundred Forty-nine Thousand Four Hundred Seventeen Dollars (\$749,417.00) shall be paid out up to a maximum for each task in accordance with the percentage amount as follows:

Project Phase 2	Fee%	Fee Amount/Task
Exhibit A:		
Task 1 – New Cranes Procurement	25.34%	\$189,888.00
Task 2 – Upgrades to Existing Cranes	38.32%	\$287,207.00
Task 3 – Upgrades to Landside Infrastructure, Tasks 3.8 and 3.9	33.28%	\$249,385.00
Exhibit A-1:		
Task 3 – Revise 100% Design Documents for Electrical Infrastructure	3.06%	\$22,937.00
	=====	=====
	100%	\$749,417.00

Compensation to Consultant for the performance of Construction Support Services identified in Exhibit A, Phase 3 Task 1, and Basic Services identified in Exhibit A-2, as payable on a "Maximum Amount Not-To-Exceed" basis, and as

otherwise required by this Agreement, shall be based upon the Salary Costs as described in Section 5.2 up to a Maximum Amount Not-To-Exceed of ~~\$6,734,774.00~~ Seven Million Three Hundred Forty-five Thousand Seven Hundred Three Dollars (\$7,345,703.00). The Maximum Amount Not-To-Exceed compensation of ~~\$6,734,774.00~~ Seven Million Three Hundred Forty-five Thousand Seven Hundred Three Dollars (\$7,345,703.00) shall be paid out up to a maximum for each task in accordance with the percentage amount as follows:

Project Phase 3	Fee%	Fee Amount/Task
<u>Exhibit A:</u>		
Task 1 – Construction Support Services	100% <u>91.68%</u>	\$6,734,774.00
<u>Exhibit A-2:</u>		
<u>Task 2 – Crane Construction Support Services</u> <u>(Tasks 2.10.3B, 2.10.4B, 2.10.6, 2.10.7)</u>	<u>8.32%</u>	<u>\$610,929.00</u>
	<u>=====</u>	<u>=====</u>
	<u>100%</u>	<u>\$7,345,703.00</u>

Consultant shall perform all services designated as Maximum Amount Not-To-Exceed set forth herein for total compensation in the amount of or less than that stated above.

5.1.2 Lump Sum Compensation. Compensation to Consultant for the performance of all Basic Services identified in Exhibits A, ~~and A-1, and A-2~~ as payable on a "Lump Sum" basis, and as otherwise required by this Agreement, shall be not more than the total lump sum amounts as follows:

...

County agrees to pay Consultant, as compensation for performance of all Basic Services related to Exhibits A and A-1 Phase 2, Tasks 1 - 3, including Phase 2 Addition, Phase 2 Addition 2, and Phase 2 Task 3.11 and Task 3.12, that are required under the terms of this Agreement, a lump sum of Three Million Six Hundred Sixteen Thousand One Hundred Sixteen Dollars (\$3,616,116.00).

The lump sum compensation of Three Million Six Hundred Sixteen Thousand One Hundred Sixteen Dollars (\$3,616,116.00) shall be paid out in accordance with the percentage amount set forth below:

Project Phase 2	Fee%	Fee Amount/Task
Exhibit A:		
Task 1 – New Cranes Procurement, Tasks 1.1 – 1.7	21.29%	\$770,000.00
Task 2 – Upgrades to Existing Cranes, Tasks 2.1 – 2.7	16.04%	\$580,000.00
Task 3 – Upgrades to Landside Infrastructure, Tasks 3.1 – 3.7, 3.11, and 3.12, Phase 2 Addition, and Phase 2 Addition 2	60.76%	\$2,197,116.00
Exhibit A-1:		
Task 2 – Feasibility Study	1.91%	\$69,000.00
	=====	=====
	100%	\$3,616,116.00

...

County agrees to pay Consultant, as compensation for performance of all Basic Services related to Exhibit A-2 Phase 3, Task 2, that are required under the terms of this Agreement, a lump sum of Six Hundred Forty Thousand Dollars (\$640,000.00).

The lump sum compensation of Six Hundred Forty Thousand Dollars (\$640,000.00) shall be paid out in accordance with the percentage amount set forth below:

<u>Project Phase 3</u>	<u>Fee%</u>	<u>Fee Amount/Task</u>
Exhibit A-2:		
<u>Task 2 – Crane Construction Support Services,</u>		
<u>Task 2.10.1</u>	<u>20.03%</u>	<u>\$128,189.00</u>
<u>Task 2.10.2</u>	<u>27.66%</u>	<u>\$177,024.00</u>
<u>Task 2.10.3A</u>	<u>43.02%</u>	<u>\$275,337.00</u>
<u>Task 2.10.4A</u>	<u>2.52%</u>	<u>\$16,096.00</u>
<u>Task 2.10.5</u>	<u>6.77%</u>	<u>\$43,354.00</u>
	=====	=====
	<u>100%</u>	<u>\$640,000.00</u>

...

5.1.4 Reimbursable Expenses. County has established a Maximum Amount Not-To-Exceed of ~~Three Hundred Ninety-one Thousand Four Hundred Eighty-four Thousand Six Hundred Fifty Dollars (\$391,000.00)~~ Four Hundred Eighty-four Thousand Six Hundred Fifty Dollars (\$484,650.00) for potential

reimbursable expenses for Phase 2 and Phase 3 work, which may be utilized pursuant to Section 5.3. Unused amounts of those monies established for reimbursable expenses shall be retained by County.

...

5. Section 5.3 of the Agreement is hereby amended to read as follows (original underlining omitted):

5.3 REIMBURSABLES. For reimbursement of any travel costs, travel-related expenses, or other direct nonsalary expenses directly attributable to this Project permitted under this Agreement, Consultant agrees to adhere to Section 112.061, Florida Statutes, except to the extent, if any, that Exhibits ~~B~~ A-2 or B-1 expressly provide to the contrary. County shall not be liable for any such expenses that have not been approved in advance, in writing, by the Contract Administrator. Reimbursable subconsultant expenses are limited as described herein when the subconsultant agreement provides for reimbursable expenses.

6. Exhibits A and A-1, Scope of Services, of the Agreement are hereby supplemented by Exhibit A-2, attached hereto and incorporated herein.

7. Preparation of this Second Amendment has been a joint effort of County and Consultant, and the resulting document shall not, solely as a matter of judicial construction, be construed more severely against one of the parties than any other.

8. Except as expressly modified herein, all other terms and conditions of the Agreement remain in full force and effect.

9. This Second Amendment shall be effective upon execution by the Parties, and may be executed in multiple copies by the Parties, each of which, bearing original signatures, shall have the force and effect of an original document.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.]

IN WITNESS WHEREOF, the Parties have made and executed this Second Amendment to the Agreement: Broward County, through its Board of County Commissioners, signing by and through its Mayor or Vice-Mayor, authorized to execute same by Board action on the ____ day of _____, 20____, and Liftech Consultants, Inc., signing by and through its _____, duly authorized to execute same.

COUNTY

ATTEST:

BROWARD COUNTY, by and through
its Board of County Commissioners

Broward County Administrator, as
Ex-Officio Clerk of the Broward County
Board of County Commissioners

By _____
Mayor

____ day of _____, 20____

Insurance requirements
approved by Broward County
Risk Management Division

Approved as to form by
Andrew J. Meyers
Broward County Attorney
Port Everglades Department
1850 Eller Drive, Suite 502
Fort Lauderdale, Florida 33316
Telephone: (954) 523-3404
Telecopier: (954) 468-3690

By _____
Signature (Date)

By _____
Al A DiCalvo (Date)
Assistant County Attorney

Print Name and Title above

Russell J. Morrison (Date)
Senior Assistant County Attorney

AAD:cr
Liftech 2ndAmd_Restated Agreement_vFinal-2018-0530
5/30/18
#12-3009.01

SECOND AMENDMENT TO RESTATED AGREEMENT BETWEEN BROWARD COUNTY AND LIFTECH
CONSULTANTS, INC. FOR CONSULTANT ENGINEERING SERVICES FOR CRANES (RLI# N1038712R1)

CONSULTANT

ATTEST:

LIFTECH CONSULTANTS, INC.

Corporate Secretary

By _____
President or Vice-President

(Print/Type Name)

(Print/Type Name and Title)

(Corporate Seal)

____ day of _____, 2018.

OR

WITNESSES:

Signature

Print/Type Name

Signature

Print/Type Name

EXHIBIT A-2 – SCOPE OF SERVICES

LIFTECH CONSULTANTS, INC.

PHASE 3 – TASK 2 – CRANE CONSTRUCTION SUPPORT SERVICES

Task 2.10 – Manufacturing Audit Services For The Cranes

INTRODUCTION

County has ordered three ship-to-shore (STS) low profile cranes (Cranes) for the Southport terminal from ZPMC. County issued the First Notice to Proceed (for design) for the initial three Cranes to ZPMC on December 28, 2017, and is scheduled to issue the Second Notice to Proceed (for manufacturing) not later than June 28, 2018.

Under this scope, Liftech Consultants, Inc., (Liftech) is to provide manufacturing audit services for the three Cranes. These services include auditing the workmanship, inspecting seafastening for ocean transport, commissioning activities, retaining a local inspection company for on-site manufacturing audit, and project management. County will also participate in the audit, especially for Tasks 2.10.2(c), 2.10.3, and 2.10.4A below.

Under County's contract with ZPMC, the Cranes are to be substantially complete within 24 months of issuance of the First Notice to Proceed. The durations for manufacturing, shipping, and site commissioning are assumed to be 12 months, 3 months, and 3 months, respectively. The duration of Liftech services under this scope would be up to 90 days following acceptance of the third Crane.

LIFTECH TEAM

Liftech will provide project management and structural fabrication review. Liftech sub-consultants will include: A Liftech Shanghai Co. Ltd. Engineer will provide manufacturing audit support in China, and help coordinate site visits, meetings, and communications with ZPMC. McKay International Engineers, Inc. (McKay) to provide mechanical and electrical manufacturing review services. Leader Firm International Limited (Leader Firm), an independent inspection services firm in Shanghai, for on-site manufacturing audit of the Cranes. The term Engineer(s) means engineer(s) from Liftech or from Liftech sub-consultants. If a weld expert is required to review the welding specifications, Liftech will retain sub-consultant. If structural inspections are required of the Cranes after they are offloaded from the shipping vessel to Berth 31-32 rails, Liftech will retain sub-consultant from the Ft. Lauderdale area.

COUNTY PERSONNEL

County personnel will take part in inspections and commissioning of the Cranes during their up to six visits to the site of manufacture of the Cranes. Each visit will not exceed two weeks in duration.

SCOPE OF SERVICES

The scope of services for the Cranes project is described below.

Basic Services

Task 2.10.1 Project Management (Lump Sum)

Liftech will manage the Cranes project throughout the manufacturing and commissioning process, including:

- a) Communication and Document Control System – Develop and maintain communications protocol and document control system
- b) Monitor Schedule – Monitor schedule for overall Crane manufacturing project and issue periodic progress reports to County
- c) Manage Submittals – Distribute ZPMC submittals and Leader Firm reports to County and McKay for review, collect review comments, and coordinate review with Leader Firm and ZPMC.
- d) Manage Manufacturing Audit – Manage overall Cranes manufacturing audit, coordinate work of County personnel, consultant(s), and third-party inspection agency
- e) Support County Personnel Visits – Help coordinate and support County personnel inspection visits to ZPMC

Task 2.10.2 Manufacturing and Crane Offload Document Review (Lump Sum)

- a) Manufacturing document review – Liftech and McKay will review the ZPMC manufacturing, testing, and commissioning documents below, report items to be corrected to ZPMC, and review corrected documents.
 - i. QA/QC documents
 - ii. Boom fabrication, alignment, surveying, and installation procedures
 - iii. Boom camber analysis and fabrication procedures
 - iv. Analysis and procedures for frame assembly, alignment procedure
 - v. Boom hanger system installation and alignment procedures
 - vi. Function test procedures for sub-assemblies
 - vii. Manuals for testing completed cranes at vendor facility
 - viii. Manuals for commissioning cranes at owner facility
- b) Cranes offload document review – ZPMC has numerous heavy lift vessels (Zhenhua class) to transport fully erected STS cranes from their facility to the County's Port Everglades facilities. The Cranes are loaded thwart ship and secured to the vessel. Liftech assumes ZPMC will transport the three Cranes on a single Zhenhua class vessel and offload them at Port Everglades using their typical scheme. Liftech will review ZPMC's scheme to offload the Cranes and review the wharf structure for the Cranes loading described in the ZPMC documents.
- c) Manuals and As-built documentation Review – This task will be shared between Liftech and County as follows:
 - i. As-built Documentation – Review for inclusion in the final documents. Liftech will not make a detailed review.
 - ii. Training materials – County will be the primary reviewer of these documents. Liftech will review for content, time, and documentation provided to each trainee.
 - iii. Operating and maintenance manuals – County will be the primary reviewer of these documents. Liftech will review for topics addressed and clarity of materials.
 - iv. Spare parts lists – County will be the primary reviewer of the list. Liftech will review for inclusion and parts definitions and support County as requested.

- v. Software and software licenses – Liftech will confirm these are provided by ZPMC but will not review the contents.
- d) Assist with spare parts inventory – County will inventory the spare parts delivered with the Cranes. Liftech will support the County team as requested.

Task 2.10.3A Manufacturing, Assembly, Shop Testing, and Seafastening Installation Review (Lump Sum)

This task covers periodic site visits by Liftech and McKay engineers and Leader Firm services for on-site manufacturing audit, reviewing the manufacturing and assembly of the primary Cranes components, reviewing voyage bracing installation prior to departure, and for shop testing and commissioning of mechanical and electrical systems prior to Cranes shipment as described herein. Liftech and County personnel will witness the testing of the first Cranes. County personnel will witness the commissioning of the subsequent Cranes.

a. **On-Site Audit**

Liftech, through its sub-consultant Leader Firm International Limited (Leader Firm) located in Shanghai, will review project documents, review material testing, monitor ZPMC's quality control function, witness work quality and manufacturer quality control work, spot check the quality of Cranes parts and assemblies being produced, and provide weekly reports documenting the progress of the work, along with the status of identified discrepancy issues. Leader Firm services in Shanghai is budgeted for 10 months.

b. **Review Leader Firm Reports**

Leader Firm will provide weekly reports to Liftech for review. Liftech and McKay will review the reports for structural, mechanical, and electrical content and provide comments or suggest corrective measures when necessary. Liftech estimates 52 weekly reports.

c. **Punch List Maintenance**

Leader Firm will initiate and maintain the manufacturing punch list (non-conformity items) for work performed at ZPMC's facilities. Liftech and Leader Firm will update and finalize the punch list throughout the manufacturing and testing phases of the Cranes project for County's eventual use.

Task 2.10.3B Manufacturing, Assembly, Shop Testing, Seafastening Installation Review (Not-to-Exceed)

a. Manufacturing Kickoff Meeting

A Liftech engineer and a Liftech Shanghai Co. Ltd. engineer, Leader Firm auditors, and County personnel will attend a meeting with ZPMC personnel at ZPMC's manufacturing site to familiarize ZPMC with the quality requirements expected and to review ZPMC's manufacturing, erection, testing, shipping/commissioning plans and schedule, and QA/QC and other fabrication documents, and the audit program. Liftech expects two days at the site for the meeting. A McKay engineer will attend a portion of the meeting, in person or by phone. ZMPC has built two sets of low profile cranes in the recent past. Boom fabrication is complicated and challenging. Liftech has worked with ZPMC for the previous low profile crane boom design and fabrication. The booms for the Cranes would be the largest and heaviest built to date. Liftech will discuss the boom fabrication with ZPMC engineers. The Liftech team will also discuss the boom fabrication procedures during the manufacturing kickoff meeting.

b. Manufacturing Audit Site Visits to ZMPC

Liftech and McKay will provide the following site visits:

1. **Structural Fabrication Audit**
A Liftech engineer will make three site visits during Cranes manufacturing period. Liftech has budgeted three days of travel and two days at the site for each visit. A Liftech Shanghai Co. Ltd. engineer will make one-day visits every week on average during the Cranes manufacturing period. The Liftech engineer will meet with ZPMC's QA/QC personnel and Leader Firm personnel, review the fabrication status, and observe parts of the primary structural components. Liftech's observations will be visual only and be limited to the conditions present at the time. The Liftech engineer will prepare a site visit report for each visit, including a list of items to be corrected.
2. **Additional Site Visits, if required**
Liftech has included two additional structural visits and one mechanical visit, if required.
3. **Mechanical Workmanship Audit**
A McKay mechanical engineer will perform a three-day manufacturing review trip approximately half-way through the manufacture of the mechanical components to review the manufacturing process, identify and work to resolve observed deficiencies, and to support the on-site inspectors by addressing any

issues that require engineering. The trip will include a written report with updated punch list.

A McKay mechanical engineer will perform a three-day manufacturing review trip toward the end of the manufacturing and installation of the mechanical components. The trip will include a written report with updated punch list.

4. Electrical Workmanship Audit

A McKay engineer will perform a three-day review trip during the assembly phase of the first Cranes as the conduit and wire are being installed. A written report with punch list will be included. Leader Firm will follow McKay audit procedures for the subsequent Cranes with support from County personnel.

5. Commissioning Support

A McKay mechanical engineer and electrical engineer will attend final commissioning and acceptance testing of the first Cranes at ZPMC's production facilities. Liftech estimates eight work days at the site. County personnel will also review the Cranes commissioning. McKay will work with County personnel to witness those acceptance tests performed prior to shipment and assist with resolution issues which arise that require engineering support. The trip will include a written report, updated punch list, and listing of tests witnessed and results. County personnel will follow McKay audit procedures to witness testing of the subsequent Cranes with support from Leader Firm.

6. Seafastening Installation Review

A Liftech engineer will make one two-day visit to review the seafastening installation of one or more of the Cranes on board ship prior to voyage. A Liftech Shanghai Co. Ltd. engineer and Leader Firm personnel will review the seafastening installation of the three Cranes once secured on board the ship. The Liftech and Leader Firm review will be for alignment of the Cranes and structural braces with the vessel structure, in accordance with the design drawings approved by Liftech. Liftech will not make an independent review of the ZPMC's voyage accelerations.

Task 2.10.4A Crane Receiving, Commissioning Audit, and Acceptance at Port Everglades (Lump Sum)

A Liftech engineer will observe Cranes offload and review wharf structure for loads from Cranes offload. A Liftech engineer will also observe the Cranes structures after the seafastening braces are removed and areas repaired. A McKay mechanical engineer and electrical engineer will witness the commissioning of the first Cranes and support County with acceptance testing of the remaining Cranes. County will coordinate and witness the final testing and commissioning of the Cranes and accept each of the Cranes. County will inventory and accept the Cranes spare parts. McKay will provide support as required.

County will manage the commissioning activities daily. Liftech will provide remote engineering support.

a. Punch List Development

Liftech team will transfer their list of Cranes and contract deficiencies to County for County to finalize and administer following Cranes conditional acceptance. Maintenance and resolution of punch list and warranty items is left to County; engineering support can be provided on an as-needed basis but is not included in this scope of services.

Task 2.10.4B Crane Receiving, Commissioning Audit, and Acceptance at Port Everglades (Not-to-Exceed)

a. Crane Offload Review

After seafastenings between the Cranes and the ship are removed, a Liftech engineer will review the Cranes and the offload of the Cranes onto the wharf and placement on the dock rail system.

b. Crane Walkthrough Review after Shipment

Liftech will review the primary structure for visible structural damage due to the voyage and due to seafastenings removal. Liftech will also review structural punch list items that may have been completed prior to shipping. Liftech assumes two days at Port Everglades.

c. **Crane Acceptance Testing Support**

One mechanical and one electrical engineer will attend final acceptance testing of the Cranes at Port Everglades. Liftech estimates ten work days at Port Everglades. Liftech will work with ZPMC and County to identify and expedite resolution of mechanical and electrical non-conformance and performance issues.

d. **Retain Inspection Company**

If necessary, Liftech will retain a local structural inspection company to inspect Cranes structures, perform non-destructive testing, and inspect any structural repair work, as necessary.

e. **Support After Crane Acceptance**

Liftech will provide engineering support regarding Cranes operation to County for three months after the Cranes are accepted.

Task 2.10.5 Process ZPMC Payment Requests (Lump Sum)

Liftech will review and approve the payment requests from ZPMC. ZPMC will be required to submit documents to support the payment requests to Liftech and Contract Administrator. Normal practice is to link the payment request to project milestones such as completing the design, ordering major components, and erecting frame structures. Liftech will work with Contract Administrator and ZPMC to tie the payments requests to milestones that reflect the anticipated manufacturing activities for the ZPMC contract duration. Once agreed, Liftech will review the payment requests against the milestones achieved and submit recommendation to the Contract Administrator with appropriate comments.

Task 2.10.6 Assist with Resolving Disputes between County and ZPMC, Review Change Order Requests (Not-to-Exceed)

Liftech will assist with resolving claims and disputes arising between County and ZPMC during manufacturing, shipping, and commissioning of the Cranes from the technical interpretation of the specifications, and with processing requests for changes to the Cranes project and reviewing change order requests, as directed by the Contract Administrator.

Task 2.10.7 Potential Manufacturing Delay (Not-to-Exceed)

The estimated cost for Leader Firm is based on 10 months of manufacturing and commissioning period at ZPMC. The estimated cost for Liftech is based on 12 months of such activities. If these activities are delayed for any reason, Leader Firm and Liftech will incur additional costs. Liftech has included a not-to-exceed labor budget to two months' delay for Liftech and four months' delay for Leader Firm.

MANUFACTURING DOCUMENT REVIEW CLARIFICATION

Liftech's review of any ZPMC documents will be for compliance with Cranes project specifications, agreed deviations, design documents reviewed previously, and industry practices. Liftech will provide comments where Liftech believes the fabrication does not comply with the specification or reviewed design drawing requirements. If practical, Liftech will provide suggestions that Liftech believes will comply. Based on our experience, Liftech might provide other comments that may not be strictly required but would, in our opinion, improve the reliability of the structure. Liftech will generally provide its comments directly on ZPMC's documents. Liftech understands that ZPMC is fully responsible for the entire Cranes design and fabrication and will independently verify the adequacy of the design, including any Liftech suggestions. Should ZPMC reject a suggestion made by Liftech, the County is requested to require ZPMC to provide calculations demonstrating compliance with the specification requirement.

INFORMATION PROVIDED BY COUNTY

County shall ask ZPMC to provide the following information in English:

- Design and fabrication schedules-schedules shall include a baseline for tracking progress and demonstrating adherence to schedule milestones
- QA/QC, inspection and test protocol, and manufacturing process documents
- All additional data deemed necessary by Liftech to complete the Cranes project

DELIVERABLES

Liftech will provide the following:

Comments for fabrication drawings and other documents

Reports for manufacturing and commissioning site visits

Leader Firm weekly reports with Liftech and McKay comments

Review and recommend ZPMC payment requests

EXCLUSIONS

The following items are excluded from this scope of services:

- Reviewing safety procedures by Liftech during construction observation at ZPMC sites or the Port Everglades site
- Review of operating and maintenance instructions
- Reviewing fabrication of buy-out or proprietary components, including but not limited to the spreader
- Reviewing details of non-structural or ancillary components, such as access ways, walkways and platforms, cabs and machinery house
- Reviewing ZPMC's equipment to move assembled Cranes
- Follow-up work that is identified beyond 90 days following Crane acceptance for each of the Cranes

CONSTRUCTION OBSERVATION AND JOBSITE SAFETY

Liftech Site visits and observation of work are not intended to be exhaustive or detailed inspections of ZPMC's work, but are to allow Liftech engineers to become familiar with the work in progress and to determine if the work is in general accordance with the contract documents. Liftech observations are limited to the accessible areas and components randomly selected at the time of the visits.

Safety Review – ZPMC will be required to provide OSHA certifications. Liftech expects ZPMC to retain a US based OSHA approved inspector to inspect the nearly finished Cranes at place of manufacturer and certify the completed Cranes after they are shipped to County. While Liftech may comment on safety related issues, Liftech is not a safety or ergonomic expert and review of the design for compliance with safety regulations, such as OSHA, or ergonomics is not included in this scope of services.

Leader Firm will witness the Non-Destructive Testing (NDT) of structural fabrication performed by ZPMC but will not perform the NDT other than visual inspections.

Liftech will not supervise, direct, or have control over ZPMC's work, nor have any responsibility for the construction means, methods, techniques, sequences, or procedures selected by the contractor, nor for the contractor's safety programs in connection with the work. Liftech will be responsible for the safety of Liftech personnel only.

FEE BASIS

Fee estimates are based on 12 months of manufacturing and testing audit service at ZPMC and three months of commissioning audit service at Port Everglades for each of the Cranes, except that Leader Firm costs are based on ten months of manufacturing schedule.

See Attachment 1 for fee estimates

Liftech proposes to invoice our services as below and as described in Attachment 1:

Lump Sum:

- Task 2.10.1 – Project Management (Lump Sum)
- Task 2.10.2 – Manufacturing and Crane Offload Documents Review (Lump Sum)
- Task 2.10.3A – Manufacturing, Assembly, Shop Testing, and Seafastening Installation Review (Lump Sum)
- Task 2.10.4A - Crane Receiving, Commissioning Audit, and Acceptance at Port Everglades (Lump Sum)
- Task 2.10.5 – Process ZPMC Payment Requests (Lump Sum)

Not-to-Exceed Labor:

- Task 2.10.3B – Manufacturing, Assembly, Shop Testing, Seafastening Installation Review (Not-to-Exceed)
- Task 2.10.4B - Crane Receiving, Commissioning Audit, and Acceptance at Port Everglades (Not-to-Exceed)
- Task 2.10.6 – Assist with Resolving Disputes between County and ZPMC, Review Change Order Requests (Not-to-Exceed)
- Task 2.10.7 – Potential Manufacturing Delay (Not-to-Exceed)

Reimbursable Costs:

Travel expenses for visits to ZPMC and Port Everglades

Travel Expense Basis:

Domestic air travel by economy class, China air travel by business class, non-stop US carrier flights to the extent practical. Tickets will be purchased in advance as appropriate for cheaper fares. Liftech will invoice for airfare change fees to accommodate ZPMC schedule changes.

Liftech will not invoice for travel time for visits to Port Everglades. For each visit to ZPMC, Liftech will invoice for three days at eight hours per day of travel time, plus time for preparation, project activities, and report preparation for each engineer. Liftech may work during travel, but will not invoice for this work time separately.

Hotel in Shanghai – Pudong Intercontinental (ZPMC negotiated rates) or hotels recommended by ZPMC for County inspectors.

PHASE 3 - TASK 2 - CRANE CONSTRUCTION SUPPORT SERVICES
Task 2.10 - Manufacturing Audit Services For The Cranes

Base Cranes - Lump Sum Portion

ATTACHMENT 1 to EXHIBIT A-2
15-May-18

Broward County PED, Project 2031

Page 1/2

Tasks	L = Liftech; M = McKay; LF = Leader Firm LS = Liftech Shanghai Ltd. Engineer		Lead	Liftech						McKay International Engineers				LF USD	Cost USD	Agreed Fee USD	Comments
	Sr. Princ	Proj Mgr		Sr Eng	Str Des	Tech Sup	Proj Mgr	M Eng	E Eng	Proj Adm							
	Rate*	235.56		198.27	173.25	182.67	88.68	205.38	146.57	198.75	78.76						
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	
2018 rates used for calculations																	

J:\LCR2031\2031\PM\Contract\Mfg Audit\02 Attach 1_Mfg Audit Fee 22 tab.xlsx Base Cranes

PHASE 3 - TASK 2 - CRANE CONSTRUCTION SUPPORT SERVICES
Task 2.10 - Manufacturing Audit Services For The Cranes

Base Cranes, Not-to-Exceed Labor & Reimbursables Portion

ATTACHMENT 1 to EXHIBIT A-2
15-May-18
Page 2/2

L = Liftech, M = McKay, LF = Leader Firm											
Twice	Lead	Liftech				McKay International Engineers				LF	Cost USD
		Rate	Str. Princ	Proj Mgr	Str Eng	Str Des	Tech Sup	Proj Mgr	M Eng	E Eng	Proj Asst
			235.56	198.27	173.25	182.67	88.68	205.38	146.57	198.75	78.78
2018 rates used for base estimate											
a	Manufacturing Kickoff Meeting	L	8	50		40	8				
b	Manufacturing Audit Visits to ZPMC	L	8	162		624	80				
	1. Structural fabrication audit	L	8	108					54		26
	2. Additional site visits, if required	M				30		128			
	3. Mechanical workmanship audit	M				30			94	12	
	4. Electrical workmanship audit	M				80		108	120	32	
	5. Commissioning support	M				20					
	6. Seafastening installation review	L		54	8						
a	Crane offload review	L	8	30	4		4				
b	Crane walkthrough review after shipment	L	4	30	4		4				
c	Crane acceptance testing support	M	4	16				120	20	120	16
d	Retain inspection company	L									
e	Support after crane acceptance	L+M	20	60		12		40	40	8	
Used for budget only, actual unknown											
		L+M	80	80				20	20		
a	Liftech/McKay budget 2 mos		16	40	16	84	16	16	8	4	
b	Leader Firm budget 4 mos post initial 10 months										
	Subtotal Not-to-Exceed Labor		156	630	32	908	124	440	74	372	96
a	Manufacturing Kickoff Meeting										5,900
b	Manufacturing Audit Visits to ZPMC										17,700
	1. Structural fabrication audit										17,700
	2. Additional site visits, if required										12,500
	3. Mechanical workmanship audit										6,250
	4. Electrical workmanship audit										16,200
	5. Commissioning support										5,900
	6. Seafastening installation review										
a	Crane offload review										1,650
b	Crane walkthrough review after shipment										1,650
c	Crane acceptance testing support										8,200
	Subtotal Reimbursables										93,650
	Liftech Costs		36,747	124,810	5,544	165,854	10,996	90,367	10,848	73,935	7,718
	McKay Costs										
	Leader Firm Costs										
	Retain Inspection Company										
	Expenses										
	Team Total Hours		156	630	32	908	124	440	74	372	96
	Total Cost: Not-To-Exceed Labor + Reimbursables										
	Total Agreed Lump Sum + Not-To-Exceed Labor + Reimb										

Summary - Base Cranes	
2.10.1 Project Management	\$128,189
2.10.2 Manufacturing & Crane Offload Document Review	\$177,824
2.10.3 Manufacturing, Assembly, Shop Testing, and Seafastening Installation Review	\$275,337
2.10.4A Crane Accepting, Commissioning Audit, and Acceptance at Port	\$16,096
2.10.5 Process ZPMC Payment Requests	\$43,354
Subtotal Lump Sum	\$648,800
Not-to-Exceed Labor - 2.10.3 thru 2.10.7	\$610,929
Reimbursables - 2.10.3B - 2.10.4B	\$93,650
Subtotal Not-To-Exceed + Reimb	\$704,579
Total	\$1,344,579

Shanghai Trip Cost Estimates, per person	
Visit to Shanghai: No of Days	
	2 3 4 5 6 7 8 9 10
Airfare	\$5,000 \$5,000 \$5,000 \$5,000 \$5,000 \$5,000 \$5,000 \$5,000 \$5,000
Car/local transport	\$200 \$200 \$250 \$250 \$300 \$300 \$300 \$300 \$300
Lodging/Meals	\$700 \$1,050 \$1,400 \$1,750 \$2,100 \$2,450 \$2,800 \$3,150 \$3,500
Total	\$5,900 \$6,250 \$6,650 \$7,000 \$7,400 \$7,750 \$8,100 \$8,450 \$8,800
PED Trip Cost Estimates, per person	
Visit to PED No of Days	
	2 3 4 5 6 7 8 9 10
Airfare	\$800 \$800 \$800 \$800 \$800 \$800 \$800 \$800 \$800
Car/local transport	\$250 \$300 \$350 \$400 \$450 \$500 \$550 \$600 \$600
Lodging/Meals	\$600 \$900 \$1,200 \$1,500 \$1,800 \$2,100 \$2,400 \$2,700 \$2,700
Total	\$1,650 \$2,000 \$2,350 \$2,700 \$3,050 \$3,350 \$3,750 \$4,100 \$4,100

J:\CEN2017\2017\Connectivity Audit\2017_Audit_Fee_22.00.10.10 Base Cranes