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**SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

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Title - Sujet Nouveau havre à Harrington Harbour	
Solicitation No. - N° de l'invitation F3731-170101/A	Amendment No. - N° modif. 005
Client Reference No. - N° de référence du client F3731-170101	Date 2017-11-09
GETS Reference No. - N° de référence de SEAG PW-\$QCM-032-17241	
File No. - N° de dossier QCM-7-40184 (032)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2017-11-22	Time Zone Fuseau horaire Heure Normale du l'Est HNE
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Girard, Isabelle	Buyer Id - Id de l'acheteur qcm032
Telephone No. - N° de téléphone (418) 649-2847 ()	FAX No. - N° de FAX (418) 648-2209
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

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Signature	Date

AMENDMENT 005

Title: Development of a Fishing Harbour, Harrington Harbour

Included in the present amendment:

1. Questions and Answers 58 to 64
 2. Amendment of Section 01 29 00
-

QUESTIONS AND ANSWERS:

Question 58 : In Section 31 23 16.26 "Dredging and Rock Excavation": On page 5 of 22, Article 1.3.1.19, it is mentioned that rock blasting is not allowed. On the other hand, it seems very difficult, even almost impossible to excavate this type of pink granitoid rock without the use of explosives. Do you have a suggestion to excavate this rock?

Answer 58 : According to the geotechnical expert who did the study, it is possible to excavate the rock in place at Harrington Harbor. In order to maintain an acceptable rate of excavation, pre-drilling may be required to weaken the rock and clear holes done before excavating. It also depends on the machinery that will be used initially by contractor.

Question 59 : In Section 01 29 00 "Measurement for Payments": Storage of dredged sediment and excavated rock is included in 2 different positions, see the 2 pages attached.



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In which of the 2 positions should we include them?

Answer 59 : Rock excavation and sediment dredging, removal from the seabed and all required manipulations until their first open air deposition will be payable at item 3.1 (i.e., m³).

All subsequent manipulations (ie, after their first open air deposition), storage and final management of sediment and rock will be payable at item 3.3 (Lump Sum).

The two paragraphs of section 01 29 00 should be modified accordingly ; see the corrected section 01 29 00 attached.

Question 60 : Submission slip, article 6.1.2 "Modifications to the 14 existing pontoons":

Since there may be many differences between pontoon repairs, and it is impossible for us to make a fair assessment at this stage of the project, it may be appropriate to enter a budget amount for this item, say 14 one. x \$ 5,000 for a total of \$ 70,000. What would you think of this idea?

Answer 60 : We prefer to let each tenderer evaluate the average cost of the changes to be made and fix himself the budget amount he deems appropriate.

Question 61 : Amendment 002, Answer 6, concerning the water intake:

Here is our understanding of the work to be included in Item 9.3: We have a turbidity curtain to install around the temporary water intake installed by fishermen. We have to remove the said curtain at the end of our work. We also have a section of approximately 6 m. of water pipe to be installed in the extension of the wharf

inside our work, the rest being devolved to the fishermen, that is to say the part in the water and the connection to the existing pipe.

Here are 3 questions related to answer 6 of amendment 002:

- a) Is our interpretation correct?
- b) What is the type and diameter of pipe to install?
- c) Do we have to supply these materials, pipes and fittings?

Answer 61 : a) Yes indeed
b) The pipes are made of PVC 75 mm (2X)
c) The contractor shall supply all hoses and fittings to both ends of the hoses so that they can be adequately extended by the fishermen.

Question 62 : Drawing 17, "Mooring bollard":
On the top right is the description of the concrete base 1000 x 800 x 1291. On the other hand, in the plan and elevation view, the base is 1000 x 1000 x 1800 in height. What are the right dimensions?

Also on the bottom right there is a plan view of 580 x 975 but we do not know where it's going and there is no detail. In general, the details of the mooring terminals do not agree with each other. What are the true dimensions of the bollards?

Answer 62 : The size of the concrete bases for the bollards is 1000X1000X1800.

Question 63 : On page 18 of the plans, a note states that the 16 mm steel plates will have welded ties for the fenders. Is there a detail of these fasteners on the plates?

Answer 63 : No, it is up to the contractor to propose them. We would see galvanized welded stirrups.

Question 64 : For the 16 mm steel plates on the platform, is it possible that they are in 2 pieces or they must be absolutely united according to the dimensions provided?

Answer 64 : They can be in two separate pieces horizontally.

AMENDMENT OF Section 01 29 00 :

"Section 01 29 00 Measurement for payment" of the specifications has been modified.

Therefore you must :

DELETE : "Section 01 29 00 Measurement for payment" in its entirety.

INSERT : The following "Section 01 29 00 Measurement for payment" :

***** All the other clauses and conditions remain unchanged *****

PART 1 GENERAL

1.1 METHOD OF MEASUREMENT

- .1 The supply of materials, labor, tools, equipment, protection, transport, administration, profits, financing, etc. that are needed to do this work, shall be included in each of the items described herein unless otherwise indicated.
- .2 No additional payment will be granted for quantities exceeding the guidance to plans and specifications without prior approval of the Department's representative.
- .3 The Contractor shall, within ten (10) days after the date of the notice of acceptance of the offer, the breakdown of the cost of lump sum items.
- .4 **The works which are measured according to a standard method are :**
 - .1 Item No.1 – Site Organization :
 - This item includes all elements of the 01 Division of the quote.
 - This item also includes the work indicated in the plans and specifications and for which payment is provided in another measuring Item.
 - .2 Item No.2 - Mobilization and Demobilization:
 - This item includes all costs related to the mobilization and demobilization to the site, and those related to transport equipment, materials, tools, machinery, and other required items.
 - .3 Item No.3.3 - Dredging and rock excavation - Materials Management
 - This item includes all subsequent manipulation of materials dredged and excavated (after their first aerial deposition), including their regulatory waiting and final managements (their reuse in the project or their transport at an authorized site).
 - This item includes the reuse of these materials and / or the disposal and / or reuse of these materials according to the decisions taken by the Contractor regarding the reuse options proposed for some categories of stone.
 - A volume of 4100 m³ of material to manage is expected.
 - This item excludes the disposal of all contaminated sediments.
 - .4 Item No.4 - Partial demolition of spur wharf :
 - This item includes all costs related to the partial demolition of the spur treated wood wharf , the concrete slab, the concrete bases, wheelguards, sheating, etc.
 - This item includes the protection of the section of the spur wharf to be kept in good condition near junction with the extension, protecting the electric equipment and other services that are in the wharf

- This item includes the removal and the setting aside of current fenders and current sheating which must be reinstalled after works.
- This item includes the disposal of concrete, treated wood and other demolition material according to environmental regulations. Mooring bollards and cleats shall be handed over to the Department's representative.
- This item includes the storage of man stones until they are reused.

.5 Item No. 5 .1 - Landfill - Demolition:

- This item includes all costs related to the demolition of the slab and the foundations of the existing building, as shown in the plans.
- This item includes the disposal or recycling of demolition materials, depending on the specifications.

.6 Item No. 5 .2 - Landfill - Materials:

- This item includes all costs related to the supply of protection stones and compactable granular materials in the landfill.
- An approximate volume of 1 600 m³ of stone is required for the landfill after compaction.
- An approximate volume of 450 m³ of armor stone 1-2 tm is required for the protection layer.
- This item includes the geotextile as specified in the plans.
- Materials can come from two sources :
 - Option # 1 Reuse of materials, sorted out of dredging and excavation of rock must be the preferred solution by Contractor :.
 - Material sorting and crushing may be required and should be included in this item. The materials consist mainly of natural quarry-run and protective stones of 1-2 tm.
 - Some contaminated materials dredged from the harbor has to be reused in the landfill in priority (see Section 35 20 23A).
 - The rest of the materials to insert in the landfill can come from natural uncontaminated materials recovered from the seabed. They should be granular and compactable in addition to be considered appropriate according to specified requirements.
 - Option # 2 if the option to reuse the seabed material is not considered by the Contractor, he must import the materials to build the actual landfill as specified in plans and specifications.
 - This option includes the supply, transportation and storage of materials, if applicable.
 - This option includes the environmental disposal offsite of the contaminated materials that would otherwise be reused in the landfill via Option # 1.

- A halfway solution between options # 1 and # 2 can be chosen by the Contractor.
 - • Regardless of the stone source option selected, this item must have only one lump sum value.
- .7 Item No. 5 .3 – Landfill - Construction:
- This item includes all expenses related to the landfill construction activities as shown on the plans.
 - This item includes the implementation of all the materials, the precautions and actions to be taken to ensure optimum compaction of fill, protection of existing structures at limits of the fill(wharf, bridge, etc.), adjustments so the landfill adjusts better to the existing structures and avoid problems at its limits.
 - A specific compaction method may be required to speed up the process and allow placement of the anchor blocks and the gangway block.
 - This Item excludes demolition and supply of materials for landfill.
- .8 Item No. 6. 3 - Floating docks System - Gangway :
- This item is subdivided as follows :
 - 6.3.1 : Supply
 - This item includes all costs related to the provision of the aluminum gangway as described in plans and specifications.
 - This item includes the provision of lower and upper fastening systems as described in plans, including the upper guide plate and hardware for attaching the block, and the lower slide plate and the hardware for a fix to wooden dock.
 - 6.3.2 : Transportation
 - This item includes all costs related to the transportation of the aluminum gangway on site and all parts listed in the previous paragraph.
 - This item does not include the construction of the bridge attachment block.
- .9 Item No. 6. 4 - Floating docks system - Gangway Block _ :
- This item is subdivided as follows :
 - 6.4 .1 : Supply
 - This item includes all costs related to the supply of equipment required to build the gangway block, including wood, hardware and aluminum railing, foundations, as described in plans and specifications.
 - 6.4 .2 : Transportation
 - This item includes all transportation costs related to materials from the gangway block on the site.
 - 6.4. 3 : Construction

- This item includes the construction and installation of all components of the gangway block listed above.
- .10 Item No. 6. 7 - Floating docks System - Installation of the Gangway :
 - This item includes all costs related to the installation of the gangway and its attachment system.
 - This Item includes the installation of the upper and lower attachment systems of the gangway, the upper guide plate and the lower slide plate on dock.
- .11 Item no 7.1 - Wharf Extension - Timber Cribs
 - This Item is divided as follows :
 - 7.1.1 : Supply of wood
 - This item includes all costs related to the supply of timber needed to build the spur wharf extension, including the section of the spur wharf demolished partially as shown on the plans.
 - This item includes wheel guard, ballast floor and the crowning pieces.
 - Contractor must verify the required pieces of timber himself and ensure that they are available on time to allow the project to be carried out.
 - 7.1.2 : Supply of other materials
 - This item includes all costs related to the supply of other necessary materials for the construction of cribs or hardware mainly, but also the junction plates, foundations, etc.
 - 7.1.3 : Transport on site
 - This item includes all costs associated with handling and transport for all materials related to timber cribs on site.
 - This item includes the safe storage of equipment and materials onsite awaiting the installation
 - 7.1.4 : Construction
 - This Item is measured by the unit and is presented in the next section.
 - This Item excludes ladders and sheating.
- .12 Item no 7.6 - Wharf Extension -Sheating
 - This item is subdivided as follows :
 - 7.6.1 : Supply :
 - This item includes expenses related to the supply of wood sheating as shown on the plans, including fasteners, hardware, the equipment needed for welding, etc.
 - This item could include the area of the partial demolition in the event that existing sheatings are

not sufficient and that new sheathing must be provided.

- 7.6.2 : Transport on site:
 - This item includes transportation costs for sheathing, and other materials listed onsite.
- 7.6.3 : Installation:
 - This position is measured as a unit and is presented in the next section.

.13 Item no 9.1- Services - Extension of crane _ :

- This item is subdivided as follows :
 - 9.1.1 : Dismantling
 - This item includes all costs related to the dismantling of the current crane and its control unit, including electrical disconnections.
 - This position includes the safe handling and transportation of all existing equipment from site to the workshop.
 - 9.1.2 : Modification
 - This item includes all expenses related to the expansion work required on crane, including labor, materials, equipment, test driving in the workshop, etc.
 - 9.1.3 : Transport on site
 - This item includes all costs associated with the safe handling and transportation onsite of the crane and its control unit.
 - This position includes the safe storage of all equipment related to crane onsite pending their installation.
 - 9.1.4 : Installation
 - This item includes all costs associated with the installation of the modified crane and its control unit as specified in the plans and specifications, including load tests and electrical tests onsite.
 - This item includes the hardware required to anchor the crane.

.14 Item no.9.2- Services - Electricity :

- This item is divided as follows :
 - 9.2.1 : Supply of materials
 - This item includes all costs related to the supply of all required materials including connections, controls, panels, spinning, drum, equipment, materials, lighting, lamps, electrical blocks, transformers, etc. , as specified in plans and specifications.

- 9.2.2 : Transport on site
 - This item includes all costs related to transport of electrical equipment onsite.
- 9.2.3 : Installation
 - This item includes all expenses related to electrical works and lighting as shown and described in plans and specifications.
 - This item includes the re-use of existing equipment as indicated.
 - This item includes the extension of wires required for the crane.
 - This item includes all the fixings of ducts that are needed to secure the ducts, whether outside or inside the wharf, on the wheel guard or a building. Attachments must be realized according to the rules of art.
- This item excludes works on crane.
- This item excludes installation of crane.

.15 Item No.9.3- Services - Sea water intake :

- This item includes all costs related to the supply, installation and afterwards the removal of a turbidity curtain around the temporary water intake, including all necessary diving activities, adjustments depending on the effectiveness of the curtain .

.5 **Items to be paid with a unit price measuring method go as follows :**

.1 Item No.3.1 - Dredging and rock excavation - Dredging and excavation

- This item will be measured in cubic meters of dredged or excavated material from the seabed, measured by comparing bathymetric surveys in the dredging area and in the vertical and horizontal limits specified on plans, whether these materials are sediment or rock.
- This item includes all operations in connection with dredging and rock excavation, such as excavation and dredging itself, removal of materials from bedrock, and all manipulations until their first open air deposition before their reuse or their transport offsite.
- Mobilization and demobilization of dredging and excavation equipment should be included in the item "Site Organization ".
- This item includes all costs related to additional bathymetric surveys conducted by the Contractor (see section 3 below).
- This item includes the dredging of all the contaminated sediments.
- This item includes the excavation of rock at the base of the protection stones layer outside the landfill.
- The quantities expected according to Department's information are 1,200 m³ of sediment and 2,900 m³ of rock.
- Only one unit price must be submitted for both categories of material.

- No payments will be made for the quantities of material that are over dredged or over excavated or below specified limits (vertical and horizontal).
 - This item excludes the excavation of rock for anchors of floating docks.
 - This item excludes the rock excavation for the marking lantern.
- .2 Item no 3.2 - Dredging and rock excavation – Disposal of contaminated sediments
- This item will be measured by metric tons of contaminated dredged material for which the contaminant concentration > CEF and that are disposed according to environmental regulations.
 - This item includes the temporary storage of contaminated sediment on site pending their disposal and their transport at an authorized site.
 - This item excludes the disposal of all contaminated sediments that could be reintegrated in the works, meaning those whose concentration is >CEO and <CEF.
- .3 Item No. 6 .1 - Floating docks system - Modifications to existing docks
- This item will be measured by the unit of docks.
 - This item is subdivided as follows :
 - 6.1.1 : Management of floating docks
 - This item includes all costs related to their handling and transportation between Kégaska and the workshop, if applicable.
 - 6.1.2 : Modifications
 - This item includes all costs related to the modification brought to 14 existing docks provided by the Department, as specified in plans and specifications.
 - This item includes the supply of all materials required for the modifications.
 - Each dock to be modified will be paid equally regardless of the type of modification.
 - This position includes all tests to be conducted on the modified docks.
 - 6.1.3 : Transport on site
 - This item includes all costs related to their handling and transportation between the workshop and the work site.
- .4 Item No. 6.2- Floating docks system - New floating docks
- This item will be paid by the new floating dock unit.
 - This item is subdivided as follows :
 - 6.2.1 : Supply of wood
 - This item includes all costs related to the supply of wood for the construction of new floating docks.
 - 6.2.2 : Supply of other materials

- This item includes all costs related to the supply of other necessary materials, hardware mainly.
- 6.2.3 : Construction
 - This item includes all costs related to the construction of new floating docks as specified in plans and specifications.
- 6.2.4 : Transport on site
 - This item includes all costs associated with handling and transport of new floating docks onsite.
 - This item includes the safe storage of floating docks onsite pending their installation.
- This item excludes the anchor arms.
- This item excludes hardware necessary to attach pontoons arms.
- This item excludes the necessary hardware for the anchors on the seabed.

.5 Item No. 6.5 - Floating docks System - Anchor Arm

- This item will be measured by the unit of anchor arms for floating docks.
- This item is subdivided as follows :
 - 6.5.1 : Supply
 - This item includes all costs related to the supply of anchor arms for docks as specified in plans and specifications.
 - This item includes the supply of fastening plates , which are the fixed plates located on the facade of the wharf and on the blocks.
 - This item includes the supply of the lower fastening plate, which is the plate located on the docks itself.
 - This station includes the hardware needed to attach the anchor arm to the dock and and to the block as well.
 - 6.5.2 : Transport on site
 - This item includes all costs related to the handling and transportation of the anchor arms at the site.
 - This item includes safe storage of the anchor arms onsite while awaiting installation.
 - 6.5. 3 : Installation
 - This item includes all expenses related to the installation of the anchor arm, preparing the surface of dock, cutting the sheating of wharf, and all adjustments necessary to ensure an equivalent elevation for all arms, etc.

- This item includes the installation of the fastening plates and the installation of the lower attachment plates.
 - This item excludes anchor blocks.
- .6 Item No. 6.6 - Floating docks Systeme - Installation of floating docks :
 - This item will be paid by the unit of dock installed in the harbour.
 - This item includes all costs related to the installation of 25 timber docks as described in plans and specifications.
 - This item includes cleats for docks, reflective strips, numbering plates, the plates between docks, the overlapping plates and hardware necessary at junctions between the docks themselves.
- .7 Item No. 6.8 - Floating docks system - Anchor blocks
 - This item will be measured by the unit of anchor blocks.
 - This item is subdivided as follows :
 - 6.8.1: Supply
 - This item includes all costs related to the supply of anchor blocks, including the reinforcement, the hardware wetted in block, as specified in the drawings and specifications.
 - This item excludes the tie plate arm.
 - 6.8.2 : Transport on site
 - This item includes all costs associated with the handling and transportation of the anchor blocks onsite.
 - This item includes safe storage of blocks onsite pending their installation.
 - 6.8.3 : Installation
 - This item includes all costs associated with installation of anchor blocks, including foundations, local adjustments, etc.
 - This item excludes the steel plate to attach the arms.
- .8 Item No. 6.9 - Floating docks system - Anchors to seabed
 - This item will be measured by the unit of anchor for docks attached to rock.
 - This item is subdivided as follows :
 - 6.9.1: Supply
 - This item includes all costs related to the supply of the anchors, including hardware, shackles, eye cage bolts, grout, chains, etc., as specified in plans and specifications.
 - 6.9.2 : Transport on site
 - This item includes all costs associated with handling and transport onsite of material required for anchors.

- This item includes the safe storage of material onsite awaiting installation.
- 6.9.3 : Tests
 - This item includes all expenses related to driving tests carried out on anchors to seabed, such as all requested loading tests.
- 6.9.4 : Installation
 - This item includes all costs related to the installation of anchors to seabed, diving activities, adjustments, including additional dredging (if required) and rock excavation necessary to install anchors to rock.

.9 Item No. 7.1.4- Wharf Extension - Cribs - Construction

- This item will be measured in cubic meters of timber cribs built and implemented, including the section of the spur wharf demolished partially as shown on plans.
- This item includes the installation of hardware, the crowning parts, wheel guards, leveling parts to the seabed, the ballast floor, etc.
- This item includes the construction of the junction with the existing spur wharf, and the three steel support plates, the wheel guard on the existing wharf and the extension and the relocation of the existing fenders on wharf.
- This item excludes ladders and sheathing.

.10 Item 7.2 - Wharf Extension - Man Stones

- This item will be measured in cubic meters of timber cribs built and set up, excluding the section of the spur wharf partially demolished.
- This item includes all costs related to the supply and installation of man stones in the extension of wharf.
- This item includes the temporary storage, reuse and implementation of existing man stones from demolition of wharf. All man stone from demolition must be reused in the spur wharf.
- Additional man stone supply can come from two sources :
 - Option # 1 : Man stone can come from natural elements removed from the seabed if they are made of individual rock unit of the appropriate size and are not contaminated. No block of composite nature can be used. Contractor must demonstrate the quality of each individual stone before inserting it into wharf.
 - Option # 2 : Man stone can be imported to the site if necessary. The stone must match the requirements from plans&specifications.
 - A mixed option between options # 1 and # 2 can be used.
- Contractor must submit a single unit price regardless of the option selected.

- .11 Item 7.3 - Wharf Extension - Foundations
- This item will be measured in metric ton of net stone put in the foundations under wharf within the listed specifications.
 - This item includes all costs related to supply and installation of the stone under the extension of wharf.
 - No amount will be awarded for volumes exceeding the dimensions specified in plans.
 - This item excludes the foundations of concrete bases in wharf.
- .12 Item 7.4 - Wharf Extension - Ladders
- This item will be measured at the unit of ladders built and implemented.
 - This item includes all costs related to the supply and installation of ladders and their vertical girders as shown on the plans.
- .13 Item No. 7.5.1- Wharf Extension - Concrete – Lamppost
- This item will be measured by unit of concrete lamppost put in place in wharf as specified in plans & specifications.
 - This item includes all costs related to the supply and installation of concrete bases as shown on the plans, including forms, frames, cast anchors, bolts, chamfers, geotextile, cure and foundations when required.
 - This item includes the reuse of all the granular materials for the construction of the bases provided by the Department, including their management from Kégaska to the manufacture and the installation of the bases.
- .14 Item No. 7.5.2 - Wharf Extension - Concrete – Mooring bollards
- This item will be measured by unit of concrete base put in place in wharf as specified in plans & specifications.
 - This item includes all costs related to the supply and installation of concrete bases as shown on the plans, including forms, the art frames, cast anchors, bolts, chamfers, the geotextile, the cure and foundations when required.
 - This item includes the reuse of all the granular materials for the construction of the bases provided by the Department, including their management from Kégaska to the manufacture and the installation of the bases.
- .15 Item No. 7.5.3 - Wharf Extension - Concrete - Crane
- This item will be measured in cubic meters of concrete placed in the base of the crane according to plans & specifications.
 - This item includes costs related to the supply and installation of concrete bases as shown on the plans, including forms, frames, cast anchors, bolts, chamfers, the geotextile, the cure and foundations when required.
- .16 Item No. 7.5.4 - Wharf Extension - Concrete -Wharf 's Slab
- This item will be measured in cubic meters of concrete placed in the slab of wharf, built according to plans & specifications.

- This item includes costs related to the supply and installation of concrete bases as shown on the plans, including forms, frames, cast anchors, bolts, chamfers, joints, the geotextile, the cure and foundations when required.
- This item includes the concrete allowances for electrical stations.

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Item No. 7.6.3- Wharf Extension – Sheating - Installation

- This item will be measured in m² of vertical surface of wharf covered with sheating as specified plans & specifications.
- This item includes costs related to the installation of wood sheating as shown on the plans, including the chamfer, paint, bolts and welds when required.
- This item includes the area of the spur wharf partially demolished, where all existing paneling must be reinstalled. This item includes their safe removal, their temporary storage and their installation.
- This item includes installation of sheating on the three steel junction plates, including the development of a method to be approved by the Department's Representative.

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Item no 8.1 - Artificial reefs - Stone supply

- This item will be paid in m³ of stone put in the artificial reefs according to plans & specifications and from bathymetric survey.
- This item includes all costs related to the supply of stone for artificial reefs, all sizes of stone, as well as their handling, storage and transport to the site.
- The stone for reefs can come from two sources :
 - Option # 1 : The stone can come from natural elements removed from the seabed if they are made of individual unit of rock of the appropriate size requested in plans & specifications and are not contaminated. No block of composite nature can be used. Contractor shall demonstrate the quality of each individual stone before inserting it into the wharf to allow verification of quantities.
 - Option # 2 : The stone can be produced in a quarry and be imported to the site.
 - A mixed option between options # 1 and # 2 can be used.
- Contractor must submit a single unit price regardless of the option selected.

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Item No. 8.2 Artificial reefs -Construction

- This item will be paid by the unit of reef built as shown on the plans.
- This item includes all costs related to the construction of artificial reefs.
- This item includes the transportation of the stone to construction site.
- This item includes the establishment of bathymetry around the reefs after their construction and all costs for processing of data related to the bathymetry. It is the Contractor's responsibility to provide the bathymetric

survey, and as requested, at the earliest timeframe possible, to deliver the construction report before being paid for the construction of reefs.

- .20 Item no 9.4 - Services - Cleats
- This item will be measured by cleat unit.
 - This item is subdivided as follows :
 - 9.4 .1: Supply
 - This item includes all costs related to the supply of cleats, including hardware and anchors, as specified in plans and specifications.
 - 9.4.2: Transport onsite
 - This item includes all costs associated with handling and transportation onsite of cleats.
 - This item includes the safe storage of cleats onsite awaiting installation.
 - 9.4.3 : Installation
 - This item includes all expenses related to the cleats installation.
- .21 Item No. 9. 5 - Services - Mooring Bollards
- This item will be measured by the mooring bollard unit.
 - This item is subdivided as follows :
 - 9.5.1: Supply
 - This item includes all costs related to the supply of mooring bollards, including hardware and anchors, as specified in plans and specifications.
 - 9.5.2: Transport onsite
 - This item includes all costs associated with the handling and transportation of mooring bollards on site.
 - This item includes the safe storage of the cleats on the site pending their installation.
 - 9.5.3 : Installation
 - This item includes all costs related to the installation of mooring bollards.
- .22 Item No. 9.7 - Services - Marking Lantern
- This item will be measured by the unit of marking lantern installed as specified.
 - This item includes all costs related to the supply of wood, the lantern itself and any other required material, as well as its transport and installation as shown on the plans.
 - This item includes the rock excavation according to the specifications, the cleaning of the excavation hole, and the installation of the lantern on the mast.
- .23 Item no 9.8 - Services - Protection Bollards
- This item will be measured protective bollards unit set up on the dock as shown on plans.

- This item includes all costs related to the supply and installation of bollards, including steel, concrete, anchors, drilling, etc .

PART 2 PRODUCT

2.1 NOT APPLICABLE

- .1 N/A.

PART 3 EXECUTION

3.1 MEASUREMENT OF QUANTITIES AND EXCAVATED DREDGED

- .1 The Department will perform four (4) bathymetric surveys during the project in the fishing harbor, consisting in one verification survey at the beginning of the project and three (3) surveys during construction , which will be made to the dates chosen by Department's Representative during project . The dates of these surveys will be defined by the latter depending on the progress of activities by Contractor and will be used to check the project's progress and calculate the quantities of materials removed from the seabed.
- .2 The Department will also conduct one or two bathymetric surveys at the end of the project, including the entire harbour area and the artificial reefs area.
- .3 The bathymetric surveys conducted by the Department during the project will be used to calculate the amounts for the progressive payments. However no new progressive payment of items **3.1 - Dredging and Excavation of rock nor 8 – Artificial Reefs (8.1 and 8.2)** will be done if a new updated bathymetry was not carried out since the last progressive payment.
- .4 If the Contractor wishes to be paid before the Department's bathymetry is conducted, he must make himself bathymetric surveys as defined in Section 31 23 16.26 - Dredging and rock excavation (section 3 .4). At any time, the Contractor shall carry out its own bathymetric surveys in the presence of the Department's Representative for them to be judged as admissible.
- .5 Contractor must estimate the volume of dredged sediment and excavated rock on a daily basis, either directly in volume or through weight / density. He must submit his measurement method to Department's Representative at least ten (10) days before the start of dredging and get his approval. During all project, Contractor shall provide estimates of dredged and excavated volumes on a daily basis to the Department's Representative.

END SECTION