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**Bid Receiving Public Works and Government
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Cabot Place, Phase II, 2nd Floor
Box 4600
St. John's, NF
A1C 5T2
Bid Fax: (709) 772-4603

Revision to a Request for a Standing Offer

Révision à une demande d'offre à commandes

Regional Individual Standing Offer (RISO)
Offre à commandes individuelle régionale (OCIR)

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

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

Comments - Commentaires

**Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution
PWGSC / TPSGC - Nfld. Region
Cabot Place, Phase II, 2nd Floor
Box 4600
St. John's, NF
A1C 5T2

Title - Sujet RISO Marine Netting, Ropes & Wire	
Solicitation No. - N° de l'invitation F6070-160010/B	Date 2016-08-18
Client Reference No. - N° de référence du client F6070-160010	Amendment No. - N° modif. 001
File No. - N° de dossier OLZ-6-39074 (010)	CCC No./N° CCC - FMS No./N° VME
GETS Reference No. - N° de référence de SEAG PW-\$OLZ-010-6669	
Date of Original Request for Standing Offer Date de la demande de l'offre à commandes originale	
2016-08-09	
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-08-25	
Time Zone Fuseau horaire Newfoundland Daylight Saving	
Address Enquiries to: - Adresser toutes questions à: Connolly, Carolyn	Buyer / Acheteur olz010
Telephone No. - N° de téléphone (709) 772-5396 ()	FAX No. - N° de FAX (709) 772-4603
Delivery Required - Livraison exigée	
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	
Security - Sécurité This revision does not change the security requirements of the Offer. Cette révision ne change pas les besoins en matière de sécurité de la présente offre.	

Instructions: See Herein

Instructions: Voir aux présentes

Acknowledgement copy required Accusé de réception requis	Yes - Oui <input type="checkbox"/>	No - Non <input type="checkbox"/>
The Offeror hereby acknowledges this revision to its Offer. Le proposant constate, par la présente, cette révision à son offre.		
Signature	Date	
Name and title of person authorized to sign on behalf of offeror. (type or print) Nom et titre de la personne autorisée à signer au nom du proposant. (taper ou écrire en caractères d'imprimerie)		
For the Minister - Pour le Ministre		

Solicitation No. - N° de l'invitation
F6070-160010/B

Amd. No. - N° de la modif.
001

Buyer ID - Id de l'acheteur
olz010

Client Ref. No. - N° de réf. du client
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AMENDMENT 001

1.1 Amendment 001

Amendment 001 is raised to include an electronic copy of Chapter 3 of the Trawl Specification Protocols as additional information for potential suppliers.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED

CHAPTER 3

TRAWL SPECIFICATION PROTOCOLS

3.1 INTRODUCTION

The Campelen 1800 shrimp trawl has been used as the annual multi-species bottom survey trawl at NAFC since the fall of 1995. The trawl, 'Campelen 1800 Super bottom trawl', as it is correctly known, was designed by Cosmos Trawl, Hirtshals/Skagen, Denmark who provided a copy of the design to NAFC in 1992. It is a 3-bridle, 4 panel, high opening polyethylene trawl with small rockhopper footgear and a small mesh liner in the codend. The trawl has a fishing circle of 1800 meshes of 60 mm twine with large side panels extending from ahead of the footgear back to the end of the 2nd belly. In this design the fore section of the lower trawl wing has been cut away, i.e., 'flying wing', leaving a bunt wing section that is in line with the top wing bunt.

The top and centre bridle merge into a single cable leaving only two main towing bridles connected to each door leg extension. By making the centre bridle shorter than the top and bottom bridles much of the strain is taken in the centre of the net allowing the top panel to rise up under the action of the floats and the lower panel to 'dig' in due to the footgear weight.

The footrope is of rockhopper construction consisting of 102×35.6 cm diameter tightly packed rubber disks, rubber and iron spacers and washers. The trawl is spread by 4.3 m^2 Morgère polyvalent trawl doors weighing 1400 kg.

This Chapter serves as an introduction to the Campelen Trawl Drawings and Parts List, and is integral to the protocols in the chapters on Procurement (4), Construction (6), Repair (7) and Quality Assurance (8).

3.2 TRAWL DRAWINGS

The trawl plan is the primary form of engineering and construction drawings used to visually convey the form and specification of the Campelen trawl. Technical specifications of the trawl drawings are not drawn to scale but are sufficient to give the impression of proportions and accuracy for assemblage. The Trawl Drawings are presented in a series of 28 pages (APPENDIX 1) with each drawing carrying an unique number and each component is cross-referenced with a Trawl Parts List number (APPENDIX 2). Twelve drawings describe the rigging of the Campelen trawl and an additional 16 drawings describe in detail various hardware (Parts List) used in the trawl.

Specification of wire, chain and rope include construction, Minimum Breaking Strength (MBS), and grade.

3.3 RUNNING LINES

3.3.1 BRIDLES (Drawing Number CAM*1.0)

The bridles are made up of upper (20 m), upper/middle bridle extension (20 m) and middle (20 m) bridles consisting of 16 mm diameter 6x19-9/9/1 fiber core, galvanized wire rope (MBS=12 mt) swaged at both ends with the lower (40 m) bridle having a larger 22 mm diameter (MBS=22 mt). The middle bridle has a 3.97 m extension made of 20 mm diameter combination rope (MBS=8.87 mt) swaged at both ends.

The sections are joined with 5/8" hammerlocks. The 39.4 cm eye splices are included in the overall length measurements. Length measurements do not include the hammerlocks.

3.3.2 DOOR LEGS AND EXTENSIONS (Drawing Number CAM*1.1)

The 3.05 m upper and lower door legs are made up of 16 mm mid-link chain (Grade 80 alloy steel; MBS=20 mt) and are hammerlocked into the forward hole of the door using a combination of 5/8 inch and 3/4 inch hammerlocks. The aft end of the door legs are attached to the door leg extension with a 3/4 inch hammerlock.

The 6.1 m door leg extensions for the CCGS *W. Templeman* and the 7.62 m door leg extensions of the CCGS *Teleost* are made up of 22 mm diameter 6x19-9/9/1 fiber core, galvanized wire rope (MBS=22 mt) swaged at both ends. The fore extension is connected to the bridles with a 1 1/4 inch G-hook-recess link combination which is hammerlocked (5/8 inch) into the upper-middle bridle extension, lower bridle and pennant wire. The 39.4 cm eye splices are included in the overall length measurements.

Hammerlocks are not included in any of the length measurements.

3.3.3 DOOR PENNANTS (Drawing Number CAM*1.2)

The 12.82 m pennant wires for the CCGS *W. Templeman* and the 13.80 m wires for the CCGS *Teleost* are made up of 19 mm diameter 6x19-9/9/1 fiber core, galvanized wire rope (MBS=16 mt) spliced at both ends. The forward end of the pennant wire is attached to the door frame using a combination of hammerlocks, G-hook-recess links and chain.

Hammerlocks are not included in any of the length measurements.

3.4 NETTING (Drawing Numbers CAM*2.0 to 2.5)

The webbing for all panel sections is single braided polyethylene knotted netting (with the exception of the codend cover which is double knotted polyethylene netting), pre-stretched, heat treated and dyed green. Mesh sizes are stretch measures using knot center- to - knot center. Trawl construction is of 4.0, 3.0 and 2.0 mm diameter polyethylene twine varying in mesh size from: 80 mm in top wings and corresponding 1st and 2nd side panels; 80 and 60 mm in lower wings; 60 mm in the square and 1st belly and 3rd and 4th side panels; and, 44 mm in 2nd and 3rd bellies, 5th side panel, codend extension and codend. There is little-to-no-slack in the netting panels with the exception of lower bunt wings (60mm), where the slack is mainly located, and this bunt section is 7 meshes longer than the corresponding side panel. Stretch lengths of panels do not include joining rounds. Panel widths include selvedge meshes.

The main netting has a single selvedge with the top and bottom sections of the net joined together at their sides by gathering three meshes (four knots) for each stop. (See Chapter 6:Trawl Construction Protocols). Specification of netting selvedges for gussets and guard meshes and the codend assembly is as follows:

- 3.3.1 **GUSSET and GUARD MESHES:** The 80 mm mesh size gussets/guard meshes in the top wings and 140 mm mesh size guard meshes in the lower wings are double braided polyethylene knotted netting. Two knots from guard netting and lower wing form the selvedge.
- 3.3.2 **CODEND:** The codend is a two panel construction with single braided polyethylene 44 mm stretched mesh knotted netting. The selvedge is created in the same manner as in the main netting. The codend is closed at terminal end using a series of knitted loops (~2 inches) constructed of braided nylon twine. Loops are hung to the codend using a general ratio of 1 loop to 2-3 meshes of codend and cover. A 3/4" Sampson braided nylon rope is passed through the nylon loops and the bag is then closed using a chain knot.
- 3.3.3 **CODEND LINER:** the 2 panel liner is 12.7 mm stretched meshed knotless white nylon netting. It is hung on the inside of the codend 2 meshes deep fore of the join of the codend and the extension section. It is attached to every mesh in the top of the codend. The selvedge of the liner is created by gathering the two panels and lacing an approximately 1/2" roll of the material. The liner is closed off with 3 mm poly twine near the section where it extends outside the codend.

- 3.3.4 **CODEND COVER:** The codend cover is a 140 mm stretched meshed two panel construction, 2 mm double braided polyethylene knotted netting covering the extension and codend. It is attached to the extension piece 20.5 meshes deep from where the extension joins the third belly. The selvage (3 meshes) is laced to the ribline.

3.4 FRAME LINES

3.4.1 **HEADLINE (Drawing Number CAM*2.0)**

The 29.5 m headline is made up of 3 sections¹ of 22 mm diameter combination rope (MBS=14 mt). The 2x13.5 m quarter and 1x 2.44 m bosom sections are swaged at both ends and hammer locked together. The length of the headline includes the length of the joining hammerlocks and all 39.4 cm eye splices.

3.4.2 **BOLSHLINES (Drawing Number CAM*2.0)**

The upper 29.95 m bolshline is made up of 3 sections of 16 mm diameter pre-stretched Kraft rope (MBS=5.8 mt). The 2x13.5 m quarter and 1x2.89 m bosom sections are seized together with nylon twine at the eye splices.

The lower 20.00 m bolshline is made up of 3 sections of 16 mm diameter Kraft rope. The 8.75 m quarter and 1x2.70 m bosom sections are seized together with nylon twine at the eye splices

The lower wingend bolshlines are 2.34 m length of 16 mm diameter Kraft rope.

All lines include the standard eye tucks of 12.7 cm at each end. The lengths of the upper and lower bolshline includes the length of the joins and all eye splices.

3.4.3 **BREASTLINES/WINGLINES (Drawing Number CAM*2.0)**

The 8.02 m upper wingline, and the 3.60 m upper and lower breastlines use 20 mm diameter combination rope (MBS=8.87 mt).

The 2.34 m lower winglines are made up of 22 mm diameter combination rope (MBS=14 mt).

¹ (6×12) polypropylene jacket over a steel core

The sections are swaged at both ends. The lengths includes the length of the 39.4 cm eye splices but no hammerlocks.

3.4.4 **RIBLINES (Drawing Number CAM*2.0)**

The riblines are made up of 4 sections of 20 mm diameter pre-stretched Kraft rope (MBS=10 mt). The 1x 16.0 m codend-extension section, 1x 4.0 3rd belly section, 2x10.22 m 2nd belly sections and 2x 10.59 m 1st belly and square sections are seized (butted) together with nylon twine at the eye splices. The latter two sections form the upper and lower riblines. The lengths of the riblines include the eye splices but not the joins. All riblines include the standard eye tucks of 12.7 cm at each end.

3.4.5 **FISHINGLINE (Drawing Number CAM*2.0 & 3.2)**

The 19.5 m headline is made up of 3 sections of 22 mm diameter combination rope (MBS=14 mt). The 2x8.43 quarter and 1x2.44 m bosom sections are swaged at both ends and hammer locked together.

The length of the fishing line includes the length of the hammerlocks and all 39.4 cm eye splices

3.5 **FOOTGEAR (Drawing Numbers CAM*3.0 to 3.2 & Appendix B)**

The footgear is symmetrical about the centre line 35.60 m (length includes hammerlocks) of 16 mm (5/8 inch) long mid-link galvanized Grade 80 alloy chain comprising 5 sections of the footgear. Onto the bosom (5.9 m) and quarter sections (6.85 m/each) are strung, under tension, 34x14 inch (356 mm) rubber rockhopper disks in sets separated by 34x7inch rubber and 39x8 inch iron spacers and 6x6 inch steel washers. The length of each footrope chain section is measured from centre hammerlock to centre hammerlock with the exception of the aft end of each flying wing chain eye splice where the hammerlock length is not included.

Each quarter section is hammerlocked into the lower swivel/hole at one end of a 3 holed-triangular shaped delta plate. At the opposite lower end hole of the plate is attached an 8 m flying wing made up of 16 mm (5/8 inch) long mid-link galvanized Grade 80 alloy chain to which, at the aft end, is attached a 6 inch washer-14 inch rubber bunt bobbin-7 inch spacer arrangement. Upon assembly the fore end of the flying wing hammerlocks into the lower bridle.

Once the footgear is assembled a 19.5 m x 9.5 mm (3/8 inch) long mid-link galvanized Grade 80 alloy (travel) chain is strung through the top of each disk and

hammerlocked into the top swivel/hole of each delta plate above the footrope attachment. The 35 bobbin chains, each 393 mm (15.5 inches) long are wrapped once around the travel chain over the centre of each iron spacer, except where two sections of the footgear meet they are located over a rubber spacer. The total weight (in seawater) of the footgear is 503.41 kg.

The fishing line passes through both end rings of the bobbin chains. Into the top hole of the delta plate are hammerlocked the lower wingline, lower wingend bolshline, lower bolshline, and fishing line.

3.6 ATTACHMENTS

3.6.1 DOORS (Drawing Number CAM*1.1 & 1.2; CAM*4.0 to 4.2)

The trawl doors are 4.3m² Morgère² single slot, cambered, oval polyvalent doors painted black. Weight in air is 1400 kg. The doors have three (aft, middle and forward) removable shoes. A 38 mm (1 ½”) oval action swivel (Safe Working Load (SWL)=18 mt) connects the trawl warp to a 38 mm (1 ½”) bow shackle (SWL=17 mt) bolted into the centre brace of the door.

Each door will have a engraved number code and a Scanmar door sensor pocket installed.

3.6.2 FLOTATION (Drawing Number CAM*2.3)

Eighty-eight 8" (200 mm) deep-water (rated ~ 1400 m) yellow trawl floats (2.61 kg of buoyancy each) hung evenly to headline (10 in bosum and 39 along the quarters of the wings). Six extra floats (13.05 kg buoyancy) of the same dimensions are seized to backside of the headline on each wing end to counter the negative buoyancy of the Scanmar wing canisters. Total number of floats used on the headline is 100 (261 kg of buoyancy).

3.6.3 TRAWL WARPS (Drawing Number CAM*1.0)

The type of warp construction is a galvanized steel strand wire with a steel core (IWRC) and is composed of 6 steel strands containing 19 wires. The individual wires are twisted into a strand and the strand is then twisted around a steel core. Each warp diameter is 25.4 mm and its MBL is 49.5 mt. Weight is specified as 2.92 kg/m (± 3% tolerance).

² In the spring of 1996 the CCGS *Wilfred Templeman* purchased a new set of trawl doors meeting the same specifications, but not made by Morgère. After some days of fishing it was recognized that these doors were very unstable and were falling over. These doors were replaced with the spare set from the CCGS *Teleost* and after a few test trials they were found to work perfectly. It is for this reason that the Morgère brand is specified for the trawl doors.

The wire is generally purchased in 4000 m lengths on reels³ to satisfy the requirements of both vessels and is pre-lubricated with light petroleum or solvent-based penetrating lubricant before it leaves the factory. The warps are specified as one being left lay and the other right lay.

3.6.4 SCANMAR WING CANNISTERS AND CTD BOARD & CANNISTER (CAM* 4.3 & 4.4)

Although not a part of the Campelen trawl itself, special wing canisters each ~ 12 kg weight in water) were developed to house the SCANMAR wingend sensors. An additional 12 floats are used on the headline at each end to make them near neutral buoyant.

The Oceanographic conductivity-temperature-depth (CTD) probe is attached to the centre of the headline and sits in over the square. The 4.9 kg (weight in water) probe sits inside a shock absorbing canister (7.2 kg weight in water) connected to a UHMV polyethylene mounting board (1.4 kg weight in water). No extra floats are used since the upward lifting force of the board negates the weight of the unit. ***Note: the bosom floats on the headline remain in front of the CTD board; do not string them down the side of the board.***

³ At present CCGS *Teleost* can carry 4000 m and CCGS *W. Templeman* and her sister ship CCGS *A. Needler* can only accommodate 3500 m.