Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government Services Canada/Réception des soumissions Travaux publics et Services gouvernementaux Canada
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
B3J 1T3
Bid Fax: (902) 496-5016

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

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

Issuing Office - Bureau de distribution

Acquisitions
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
B3J 3C9

Title - Sujet MOBILE SHELVING SYSTEM	
Solicitation No. - N° de l'invitation K4B20-110364/A	**Date** 2012-09-07
Client Reference No. - N° de référence du client K4B20-110364	
GETS Reference No. - N° de référence de SEAG PW-$HAL-219-8759	
File No. - N° de dossier HAL-1-66775 (219)	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2012-10-22**	**Time Zone** **Fuseau horaire** Atlantic Daylight Saving Time ADT
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☐ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Richard, Linda K.	**Buyer Id - Id de l'acheteur** hal219
Telephone No. - N° de téléphone (902) 496-5261 ( )	**FAX No. - N° de FAX** (902) 496-5016

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
DEPARTMENT OF THE ENVIRONMENT
QUEEN SQ.17TH FL.
45 ALDERNEY DR.
DARTMOUTH
Nova Scotia
B2Y2N6
Canada

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein	**Delivery Offered - Livraison proposée**

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

Telephone No. - N° de téléphone
Facsimile No. - N° de télécopieur

Name and title of person authorized to sign on behalf of Vendor/Firm (type or print)
Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Signature **Date**

Canada

TABLE OF CONTENTS

PART 1 - GENERAL INFORMATION

1. Security Requirement

There is no security requirement associated with the requirement.

2. Requirement

The requirement is outlined in Annex “A”.

3. Debriefings

After contract award, bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2012-07-11) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

At Subsection 09 - Warranty, of 2010A (2012-07-16) is amended as follows:

DELETE: The warranty period will be twelve (12) months
INSERT: The warranty period will be five (5) years

2. Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than seven (7) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as

such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

4. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

5. Mandatory Site Visit

It is mandatory that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for site visit to be held on September 26, 2012 at 10:00 a.m., 15th Floor, 45 Alderney Drive, Dartmouth, Nova Scotia. Bidders must communicate with the Contracting Authority no later than three (3) days before the scheduled visit to confirm attendance and provide the names of the person(s) who will attend. Bidders will be required to sign an attendance form. Bidders should confirm in their bids that they have attended the site visit. Bidders who do not attend or send a representative will not be given an alternative appointment and their bids will be rejected as non-compliant. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (2 hard copies)
Section II: Financial Bid (1 hard copy)
Section III: Certifications (1 hard copy)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

(a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
(b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement

(http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html). To assist Canada in reaching its objectives, bidders are encouraged to:

1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and/or containing minimum 30% recycled content; and

2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

In their technical bid, bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

1.1 Bidders must submit their financial bid in accordance with the Basis of Payment at Annex C. The total amount of Goods and Services Tax (GST) or Harmonized Sales Tax (HST) must be shown separately, if applicable.

1.2 Bidders must submit their total firm lot price Delivered Duty Paid (DDP) destination; Canadian customs duties and excise taxes included, as applicable; and GST or HST excluded.

1.3 When preparing their financial bid, bidders should review Part 6, The Basis of Payment and clause 1.1, Financial Evaluation, of Part 4.

1.4 Exchange Rate Fluctuation

The requirement does not provide for exchange rate fluctuation protection. Any request for exchange rate fluctuation protection will not be considered and will render the bid non-responsive.

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

(a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.

(b) An evaluation team composed of representatives of Canada will evaluate the bids.

1.1 Financial Evaluation

The price of the bid will be evaluated in Canadian dollars, the Goods and Services Tax or the Harmonized Sales Tax excluded, FOB destination, Canadian customs duties and excise taxes included.

2. Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract**.**

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications to be awarded a contract. Canada will declare a bid non-responsive if the required certifications are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

1. Code of Conduct Certifications - Consent to a Criminal Record Verification

1.1 Bidders must submit with their bid, by the bid solicitation closing date:

(a) a complete list of names of all individuals who are currently directors of the Bidder;

(b) a properly completed and signed form Consent to a Criminal Record Verification (PWGSC-TPSGC 229), for each individual named in the list.

2. Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to

meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

2.1 Federal Contractors Program - Certification

1. The Federal Contractors Program (FCP) requires that some suppliers, including a supplier who is a member of a joint venture, bidding for federal government contracts, valued at $200,000 or more (including all applicable taxes), make a formal commitment to implement employment equity. This is a condition precedent to contract award. If the Bidder, or, if the Bidder is a joint venture and if any member of the joint venture, is subject to the FCP, evidence of its commitment must be provided before the award of the Contract.

   Suppliers who have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive government contracts over the threshold for solicitation of bids as set out in the Government Contracts Regulations. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than the reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

2. If the Bidder does not fall within the exceptions enumerated in 3.(a) or (b) below, or does not have a valid certificate number confirming its adherence to the FCP, the Bidder must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, to the Labour Branch of HRSDC.

3. The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Bidder or the member of the joint venture

a. ( ) is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;
b. ( ) is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c. 44;
c. ( ) is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC (having not bid on requirements of $200,000 or more), in which case a duly signed certificate of commitment is attached;
d. ( ) is subject to the FCP, and has a valid certificate number as follows: _____ (e.g. has not been declared an ineligible contractor by HRSDC).

Further information on the FCP is available on the HRSDC Web site.

PART 6 - RESULTING CONTRACT CLAUSES

1. Security Requirement

There is no security requirement associated with the requirement.

2. Requirement

The Contractor must provide Mechanical Assist Mobile Shelving in accordance with the Requirement at Annex “A” and the Contractor’s technical bid entitled _____, dated _____.

3. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

3.1 General Conditions

2010A (2012-07-16) General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

4. Term of Contract

4.1 Delivery Date

While delivery is requested as soon as possible, the best delivery that could be offered is _____ .

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Linda Richard
Title: Supply Officer
Public Works and Government Services Canada
Acquisitions Branch
Address: 1713 Bedford Row, Halifax, NS B3J 3C9

Telephone: (902) 496-5261
Facsimile: (902) 496-5016
E-mail address: linda.k.richard@pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

5.2 Project Authority

The Project Authority for the Contract is to be advised upon award of contract.

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

5.3 Contractor's Representative (to be completed by bidder)

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone : ___ ___ _____
Facsimile: ___ ___ _____
E-mail address: _____

6. Payment

6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm lot price, as specified in Annex C for a cost of $ _____ insert the amount at contract award). Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.2 Single Payment

SACC Manual Clause H1000C (2008-05-12) Single Payment

6.3 *SACC Manual* Clauses

W0002D (2000-12-01) Delivery Requirements Outside a CLCSA
W0003D (200-12-01) FOB Destination Outside CLCSAs
A9068C (2010-01-11) Government Site Regulations
B1505C (2006-06-16) Shipment of Hazardous Materials
G1005C (2008-05-12) Insurance
A2000C (2006-06-16) Foreign Nationals (Canadian Contractor)
A2001C (2006-06-16) Foreign Nationals (Foreign Contractor)

7. Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

2. Invoices must be distributed as follows:

   a. The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.
   b. One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

8. Certifications

8.1 Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

9. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.

10. Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

(a) the Articles of Agreement;
(b) 2010A (2012-07-16) General Conditions - Goods (Medium Complexity);
(c) Annex A, Requirement;
(d) Annex C, Basis of Pricing;
(f) the Contractor's bid dated _____ (*insert date of bid*)

11. Deficiency Procedures

The Contractor must adhere to the following deficiency procedures:

1. The Contractor must notify the Identified User/Consignee when the installation is completed;
2. The Identified User/Consignee must arrange for the initial walk-through inspection with the Contractor;
3. The walk-through inspection must take place no later than three business days after installation is completed;
4. If the call-up is for a phased installation, the walk-through inspection must take place no later than three business days after the completion of each phase.
5. The Identified User/Consignee in consultation with the Contractor must prepare the deficiency list documenting all problems in every area.
6. The deficiency list must be forwarded to the Identified User/Consignee to the Contractor.
7. Within three business days of receipt of this deficiency list, the Contractor must complete all minor deficiencies and make all adjustments not requiring new parts;

8. For all deficiencies other than those identified in point 7, the Contractor must submit the plan of action with delivery dates or completion dates within fourteen calendar days from receipt of the deficiency list from the Identified User/Consignee; and
9. The Contractor must notify the Identified User/Consignee when all deficiencies have been completed. If satisfied, the identified User/Consignee must provide the Offeror a final sign-off that the deficiencies have been satisfied.

12. Installation Services

1. Receive, unload, store and transport all products/pieces to the staging and/or installation site;
2. Unpack all pieces and inspect products for shipping damage;
3. Install all products in accordance with the manufacturer's specifications;
4. Ensure all products function properly and make minor adjustment/repairs;
5. Touch up all minor nicks and scratches on the product that may have occurred during installation;
6. Clean the products once installed;
7. Clean up the installation site. The site must present a neat, orderly and workmanlike appearance at all times. This must be accomplished by the removal of scrap material, debris and the like from the site, as frequently as is necessary;
8. Upon completion of the installation and at the convenience of the Project Authority, the Contractor (or his authorized representative) must walk through the installation site with the Project Authority (or an authorized representative of the Project Authority) to verify the operating condition of all products in accordance with the Deficiency Procedures.
9. Installers are expected to follow all safety precautions and practices which are standard for installation work in a building under construction.
10. Installers must be aware of other work underway in the building. A building orientation session will be provided by the building contractor, co-ordinated through the Project Authority, on day one of installation, prior to access.
11. Installation must be supervised on a daily basis by the factory trained installation supervisor.
12. Installers may be required to wear safety equipment such as hard hats, safety boots, safety glasses and reflective vests. Installers will be responsible for their own safety equipment.
13. Supplier must repair all damage to building caused by work of this contract;
14. Installation contractor must be an experienced installer who is a manufacturer's authorized representative for the specified project.

ANNEX "A"

REQUIREMENT

1.0 SCOPE

1.1 This purchase description applies to the supply, delivery and installation of a mechanical assist mobile shelving system to meet the requirements for Environment Canada Library and Records Services, 45 Alderney Drive, Dartmouth, NS B2Y 2N6.

1.2 The Environment Canada current file load in the Library is 26,100 total linear inches, additional shelving is required for maps and atlases, microfiche and multimedia. The Records file load is 7380 total linear inches. Two new and separate mechanical assist systems are required to house these 2 separate collections.

1.3 Mechanical assist system must be HRSDC Requirements for mobile shelving installed in federal facilities. Total installation including shelving, carriages, deck and track assembly must be performed by factory authorized Service Technicians, leaving installation complete, clean and ready to use.

1.4 The installation of new carpet onto the mobile system deck and ramp will be performed by a flooring contractor and is not the responsibility of the supplier. There will be a co-ordination of efforts between multiple responsibilities.

1.5 Contractor will provide shop drawings to project authority for review and approval.

1.6 Duplex outlets by other for binding machines and microfiche machine, will rest on new fixed shelving, contractor will coordinate with landlord’s electrician so that shelving cutouts allow access to the electrical receptacles.

1.7 Contractor must confirm total carriage width and length.

1.8 The requirement may call for the use of materials and or equipment that could be hazardous. The requirement does not purport to address all the safety aspects associated with its use. Contractors have the responsibility to consult with the appropriate authorities and establish appropriate health and safety practices in conjunction with any existing applicable regulatory requirements prior to its use.

1.9 There will be a co-ordination of efforts between multiple responsibilities including but not limited to a representative from Public Works and Government Services Canada, the Contractor, Environment Canada representative from Accommodations, Real Property, Security and Facilities Environment Canada representative for Procurement and Contracting and Environment Canada representative from Information Management

2.0 REQUIREMENT

The Contractor will carry out the following Work on the Environment Canada site ("on-site activities").

2.1 Training

The Contractor will be responsible for training the end users in the operation of the mobile shelving unit.

2.2 Operation and Maintenance Manuals

Upon contract award, the Contractor will be responsible for supplying one complete set of operating and maintenance instructions. As a minimum, these manuals must include instructions for operating, cleaning and maintenance of all components and finishes and the names, addresses and telephone numbers for parts and services.

3.0 SCHEDULE

3.1 The Contractor must provide no less than 72 hours notice to the Project Authority advising that on-site activities will commence.

4.0 GENERAL

4.1 Design Flexibility

The manufacturer must have the ability to install the entire system in any normal construction including a raised floor.

4.2 Workmanship

4.2.1 Manufacturer must be ISO 9001 certified for the design, production, installation and service of carriage mounted high-density mobile storage units and storage rails. Furnish certificate attesting to manufacturer's ISO 9001 quality system registration.

4.2.2 Framing parts must be straight, square, and plumb. All parts must be aligned and securely fastened. Any connections requiring welding or bolting must be finished and non-abrasive. Any exposed surface of the installation with which personnel may come in contact must be smooth and non-abrasive.

4.2.3 Note all field conditions including examination of existing floor surface for compliance with requirements for installation tolerances and other conditions affecting performance of mobile storage units and verification of site dimensions before fabrication of shelving where field dimensions cannot be made without delaying work, establish dimensions in co-ordination with Project Authority.

4.3 Environmental

4.3.1 Waste Material from the manufacturing process must be minimized and/or recycled.

4.3.2 The packaging must be designed to minimize waste, e.g. Bulk, reusable such as blanket wrap.

4.4 Colours/Finish

4.4.1 Steel carriages and shelves must be painted and finished with factory power coat pain in textured colours specified by the customer. All aluminium components must be anodized, painted or otherwise treated to prevent oxidation. Bidders must provide a list of available colours with their submission and the colour choice will be confirmed at contract award.

4.5 Finishes

4.5.1 The metal components must meet the following performance requirements:

1. Adhesion - The adhesion rating of the finish must not be less than 4B when tested in accordance with ASTM D3359 Method B.
2. Abrasion Resistance - The loss of the finish must not exceed 0.020 g per 500 cycles, using at least a CS-10 wheel tested in accordance with ASTM D4060.
3. Scratch Resistance - The finish must meet the requirements of ASTM D3363, hardness H.

5.0 Delivery

5.1 Contractor must provide tailgate service delivery and/or hand delivery -- no loading dock.

5.2 Elevator Size and Dimensions:

Height:	87 in.
Width:	80 in., between handrails 73 in.
Depth:	56 in., between handrails 53 in.
Door Height:	83 in.
Door Width:	42 in.
Capacity:	3000 lbs.

5.3 Travel and Accommodations costs will not be covered

6.0 APPLICABLE PUBLICATIONS

6.1 American Society for Testing and Materials (ASTM)

D 3359 Standard Test Method for Measuring Adhesion by Tape Test
D 3363 Standard Test Method for Film Hardness by Pencil Test
D 4060 Standard Test Method for Abrasion Resistance of Organic Coating by the Taber Abraser

6.2 Human Resources and Skills Development Canada (HRSDC) - Mobile Shelving - Fire Protection Design Requirements

6.3 Reference to the above publications, or test methods described, is to the latest issue.

D 3359 Standard Test Method for Measuring Adhesion by Tape Test
D 3363 Standard Test Method for Film Hardness by Pencil Test
D 4060 Standard Test Method for Abrasion Resistance of Organic Coating by the Taber Abraser
HRSDC - Mobile Shelving - Fire Protection Design Requirements
National Building Code of Canada

GDP-9 High density mobile shelving mechanical, electrical and manual systems, Public Works and Government Services Canada.

7.0 TERMINOLOGY

7.1 Live Load - The weight of the entire mobile storage system applied to the floor area.
7.2 Abnormal - Irregular and not typical or usual function of normal working operation.
7.3 Range - One or more shelving bays, single or double faced, connected together and supported by a carriage to form a single movable section.
7.4 Bay - A unit of shelving, single or double faced, consisting of horizontal shelves between uprights or upright frames.

8.0 GENERAL REQUIREMENTS

8.1 General - System

8.1.1 The moveable and stationary ranges must be compatible and consistent in overall height, overall length, shelving design, construction and configuration.

8.1.2 The carriages, shelves and related components must be designed, constructed, tested and furnished to support and operate within the specified weight load as stated in the carriage portion of the Detailed Requirements section.

8.1.3 Rails, tracks, wheel and all drive components must exhibit no abnormal friction, abrasion, binding or wear on or between the contact surfaces.

8.1.4 Under normal environmental and use conditions, components must not rust or exhibit any other type of corrosion.

8.2 General - Tracks and Rails

8.2.1 Rails must exhibit no movement or deflection during operation of mobile ranges.

8.2.2 All track and rail lengths must extend under all stationary and mobile ranges.

8.2.3 All rail connection joints must provide horizontal and vertical continuity between rail sections.

8.2.4 Rail sections underneath the stationary ranges must be attached in a manner to equally disburse the loaded ranges weight to the rail and to the grout, in a manner of equal or greater surface disbursement, as a moveable range.

8.2.5 Rail guidance gaps must be 12.70mm (1/2 in.) or less.

8.2.6 Assure track remains permanently level and eliminates the possibility of carriage drift

8.3 General - Decking and Ramp

8.3.1 The deck must be constructed of 19.05 mm (¾ in.) thick, 6 ply underlayment grade plywood.
8.3.2 Flush deck to the rails to eliminate any obstructions on the floor, tripping or material falling underneath system. A solid floor allows for use of carts and library ladders/step stools.
8.3.3 There must be no open gaps or spaces between the decking and the track and rail except for anti-tip mechanisms
8.3.4 Decking and ramp must be installed in a manner that will prevent warping and deformation from normal operation and loading.
8.3.5 The ramp must not extend past the front of the units into the main access aisle. The ramp must have a minimum slope of 1:12.

8.4 General - Carriages

8.4.1 Fixed carriages must be of the same construction and height as the moveable carriages and anchored to the rails.
8.4.2 Carriage splices must be the bolted type designed to maintain proper unit alignment
8.4.3 Carriage straightness must have no more than 6.53mm (1/4 in.) maximum deviation from a true straight line. There must be no permanent set or slippage in any joint when exposed to forces encountered in normal operation circumstances.
8.4.4 Carriage construction must allow the shelving uprights to be secured to the carriage frame.
8.4.5 Each drive wheel must have an axle of appropriate size considering the properties of the material used, and the stress and fatigue factors.
8.4.6 Drive shaft and wheel assemblies must exhibit no play or looseness over the entire length of that assembly.
8.4.7 Mobile shelving units must be provided with bumpers to provide a fixed clearance between mobile shelving carriages in accordance with the HRSDC - Mobile Shelving - Fire Protection Design Requirements.

8.5 General – Shelving, Uprights and Other

8.5.1 Safety brake installed (if necessary for type of shelving)
8.5.2 Ten (10) Side panels for all outward facing single rows/range (4 for Records [2 for A1 and 2 for A2] and 6 for Library [3 for B1, 1 for C1, 1 for C2, 1 for D1]) – See Annex B.
8.5.3 End panels for each end of every row/range. 10 end panels for single sided rows for Records [4 for A1, 6 for A2] and 6 end panels for double sided rows [6 for A1] for Records. 26 end panels for double sided rows in Library [26 for B1], 6 end panels for single sided rows in library [6 for B1], two 483 mm (19 in.) wide end panels [2 for C1]. Two 483 mm (19 in.) wide end panels [2 for C2], two 711 mm (28 in.) wide end panels for maps [2 for D1].
8.5.4 Shelving must have a clean appearance without holes on exposed surfaces except where shelves, back stops and centre stops are slotted or punched for dividers and centre is punched for centre stops
8.5.5 Front and back of the shelves are flush with the outside face of the post
8.5.6 Shelving must be customized/designed to meet the needs of the business and must be adjustable.
8.5.7 The successful supplier will provide plans and elevation at time of tender submission.
8.5.8 Supplier shop drawings must show :
a. fabrication, assembly and installation details including descriptions of procedures and diagrams
b. complete extent of installation layout including clearances, spacing and relation to adjacent construction in plan, elevations and sections

c. indicate clear exit and access aisle widths
d. access to concealed components, assemblies connections, attachments, reinforcements and anchorage and deck details
e. edge conditions and extent of finish floor within area where units are installed
f. show installation details at non-standard conditions

9.0 DETAILED REQUIREMENTS

9.1 Detail - General

9.1.1 Mobile storage system must not exceed the allowable live load in the effected area which is 100 pounds per square foot.
9.1.2 The system alignment must be 6.53 mm (1/4 in.) maximum variation, measured between the edges of end panels within each range in all modules, in all aisle positions.

9.2 Detail - Tracks and Rails

9.2.1 Rails must be manufactured to carry a minimum load of 453.6 kg (1,000 pounds) per 0.30 linear meter of carriage.
9.2.2 If the width to height ratio exceeds 4 to 1, then the rails must have anti-tip channels to prevent tipping as a minimum safety requirement.
9.2.3 Rails must be attached to the top of a floor and must allow for adjustment so that rails can be leveled over an uneven floor.
9.2.4 The rail installation must be done in such manner to eliminate rail deflection, maintain alignment and eliminate separation.
9.2.5 Levelness of rails equals 1.59 mm (1/16 in.) maximum variation from true level within any module; 1.59 mm (1/16 in.) maximum variation between adjacent rails perpendicular to rail direction.
9.2.6 The rail must be 15.875 mm (5/8 in.) square cold-rolled steel. Each section to be a minimum of 243.84 cm (8 feet) with shorter sections used only to terminate each individual rail assembly. In addition, each end of the rail overlaps the track housing and is pinned to the track with a 6.35 mm (¼ in.) diameter roll pin.
9.2.7 All rail connection joints must provide horizontal and vertical continuity between rail sections and gradually transfer the concentrated wheel point load to and from adjoining rail sections.
9.2.8 Tracks must be designed to be attached on top of a floor and to allow for adjustment so tracks can be leveled over uneven floor.
9.2.9 Tracks must be located and positioned properly leveled and grouted, allowing at least (12.7 mm /½ in.) for grout under high point of floor. The void area between the track and floor must be completely filled with a non-shrink grout. Shimming of the rails for leveling and/or support purposes is not acceptable.
9.2.10 Each track must have a minimum base area of 101.6 mm (4 in.).
9.2.11 The track housing must be extruded from 6063-T5 aluminum alloy, or material of an equivalent strength and grade
9.2.12 The grout used must be a ready-mixed high strength, controlled expansive grout with superior dynamic load stability, which when mixed with water will harden rapidly to produce a permanent foundation for the system.
9.2.13 Grout must be non-corrosive and floor leveling instead of shims, nonmetallic and non-shrink. Specifications for the grout after curing are a minimum strength of 7000 PSI. Grout must be worked under the rail, any voids completely filled and trimmed up sides flush with the rails
9.2.14 Grout will reduce rail deflection, maintain alignment and eliminate separation.

9.3 Detail - Carriages

9.3.1 All carriages must be capable of supporting a minimum load of 453.6 kg (1,000 pounds) per 0.30 meter without any distortion.
9.3.2 All carriage components must be capable of moving a carriage load of 453.6 kg (1,000 pounds) per 0.30 linear meter of carriage.
9.3.3 All carriages are to be unit welded steel construction capable of supporting a minimum load of 1000 pounds per carriage foot without distortion
9.3.4 Fixed carriages must be of the same construction and height as the movable carriages and anchored to the rails for a complete, homogenous system
9.3.5 Carriage construction must be designed to allow any type of shelving to be securely anchored to the carriages with vibration proof fasteners
9.3.6 Each drive shell must be fitted with two permanently sealed and shielded bearings housed in a self-aligning flanged pillow block. Drive wheels with a single centre-wheel bearing are unacceptable.
9.3.7 A minimum of 4 guide wheels is required per movable carriage.
9.3.8 All mobile carriages must be fitted with full length solid stress proof steel drive shafts connecting all wheels on the drive side of the carriage with couplings.
9.3.9 Complete drive shaft and wheel assemblies must exhibit no play or looseness over the entire length of the carriage
9.3.10 All splices and connections between drive shafts and axles must be done by means of a securely retained coupling method.
9.3.11 Rubber bumpers must be mounted to the carriage fact to protect material that may extend beyond the shelf fact and provide a positive stop for all moveable carriages
9.3.12 All carriages are constructed from 12 gauge steel.
9.3.13 Mechanical assist systems are moved mechanically by means of a chain and sprocket reduction drive system, which is operated by hand. Each moveable carriage is provided with a continuous drive shaft driving all wheels.
9.3.14 The mechanical assist handle must be of a 3-spoke design. The transfer of power from the mechanical handle to the drive shaft must be direct drive chain driven.
9.3.15 All chains and sprockets must be concealed for safety, yet readily available for ease of maintenance. Exposed chains and sprockets are unacceptable.
9.3.16 The gearing mechanism of the drive assembly must be easily accessible and able to accept larger or small sprockets depending on media weight changes
9.3.17 The gearing mechanism must be covered by an easily removable panel to provide access for adjustments to the chain tension.

9.4 Detail - Wheels and Drive

9.4.1 All wheels must be the appropriate size considering the properties of the material used, and the stress and fatigue factors and must be equipped with two permanently lubricated bearing assemblies.
9.4.2 There must be no friction between the wheels and the carriage.
9.4.3 All wheels on one side of the carriage must be driven by a steel drive shaft.
9.4.4 Minimum load capacity per wheel 3200 pounds. Wheels shall be precision ground and balanced. All bearings shall be permanently shielded and balanced.

9.5 Detail - Controls

9.5.1 Each movable unit must be equipped with a handle on the end panel which transmits power through a direct drive to all drive wheels.
9.5.2 One pound of effort on the handle must move a minimum of 1814.4kg (4,000 pounds) carriage weight and a maximum of eight (8) turns must open a 1408 mm (55.4 in.) wide aisle.
9.5.3 There must be no drifting or rolling of stopped ranges.
9.5.4 There must be at least one safety locking pin on each movable carriage.

9.5.5 Provide drive system which prevents carriage whipping, binding and excessive wheel/rail wear under normal operation.

9.6 Detail - Decking and Ramp

9.6.1 A 16 gauge stainless steel ramp threshold must be attached, providing smooth entry from existing floor to system floor.
9.6.2 Finished flooring must be flush and level with the top of the rails. There will be no open gaps or spaces between the decking and tracks. The ramp must be constructed and finished in the same material as the deck with the exception of the stainless steel threshold.
9.6.3 Decking and ramp must be installed in a manner that will prevent warping, deformation and movement during normal operation and loading.

10.0 Detail – Shelving and uprights

10.1 All shelving sections must be available as a 4-post design consisting of three basic parts; uprights, shelves and shelf supports. Parts must be assembled without nuts, bolts, studs or clips; and without the need for tools of any kind.
10.2 Overall maximum height of mobile storage system must not exceed 2083mm (82 in.) in height
10.3 Shelving ranges must be complete with tops.
10.4 There will be shelving designated for Records purposes and shelving designated for Library purposes as follows:

10.4.A Records

10.4.A.1 Critical note: Shelving 'A' to be 419 mm (16.5") clear inside depth and 914 mm (36") clear useable shelving width sections. And 324 mm (12.75") clear height dimension between each shelf. The carriage height will not exceed 2083 mm (82 in.).

10.4.A.2 The total linear requirement is 187452 mm (7380 in.). Additional requirements are as follows :

- One retractable work shelf per bay at the second shelf level from the top of the unit
- Standard locks
- All bays must have five (5) openings (shelves) in height with three (3) file dividers per opening
- A1 - There are 3 rows of double sided mobile shelving. Each row has 4 double sided bays and each shelf is 914 mm (36 in.) in clear usable length. Clear inside depth is 419 mm (16.5 in.) per side. Shelving contractor to confirm total carriage width and length.
- A1 - There is 1 row of single sided fixed shelving. Each row has 4 single sided bays and each shelf is 914 mm (36 in.) in clear usable length. Clear inside depth is 419 mm (16.5 in.) This row has a solid panel the length of the row. See Annex for details. Shelving contractor to confirm total carriage width and length.
- A1 - There is 1 row of single sided mobile shelving. Each row has 4 single sided bays and each shelf is 914 mm (36 in.) in clear usable length. Clear inside depth is 419 mm (16.5 in.) This row has a solid panel the length of the row. Shelving contractor to confirm total carriage width and length. See Annex for details.
- A2 - There is 1 row of single sided mobile shelving. Each row has 3 single sided bays and each shelf is 914 mm (36 in.) in clear usable length. Clear inside depth is 419 mm (16.5 in.) per side. This row has a solid panel the length of the row. Shelving contractor to confirm total carriage width and length. See Annex for details.
- A2 - There is 1 row of single sided mobile shelving. Each row has 3 single sided bays and each shelf is 914 mm (36 in.) in clear usable length. Clear inside depth is 419 mm (16.5 in.). Shelving contractor to confirm total carriage width and length.
- There is 1 row of single sided fixed shelving. Each row has 3 single sided bays and each shelf is 914 mm (36 in.) in clear usable length. Clear inside depth is 419 mm (16.5 in.).

This row has a solid panel the length of the row. Shelving contractor to confirm total carriage width and length. See Annex for details.

10.4.A.3 Shelves must be slotted on 76mm (3 in.) centers to receive dividers. Slots must coincide with the inside edge of the posts so a file divider can be used to provide a flush condition with the post at the shelf end.
10.4.A.4 The front and back flange of the shelf must be flush with the outside face of the post.
10.4.A.5 Shelves must be adjustable on no more than 38mm (1.5 in.) centers.
10.4.A.6 Back Stop - The face of the back stop must be slotted on the same centers as the shelf to receive and retain file dividers. Back stop must be full height of shelf opening.
10.4.A.7 Center Stop - must be securely fastened at the center of double entry shelves and must be slotted on the same centers as the shelf to receive and retain file dividers.
10.4.A.8 File Dividers - must be a flat shape with at least two tabs to enter slots in shelf and a retaining tab on the back edge to stabilize the dividers against the back stop or center stop.
10.4.A.9 Dividers must be self locking and 152 mm (6 in.) high and 254 mm (10 in.) deep and must be solid without any holes. The tolerance allowed for divider height and depth is -/+ 25.4mm (-/+ 1 in.).
10.4.A.10 Eleven (11) card holders and all necessary hardware for a complete installation must be provided.

10.4.B Library

10.4.B.1 Critical Note: Excepting microfiche, map and shelves fixed to side walls all ‘B1’ shelves in the library must be 305 mm (12 in.) clear inside depth and 914 mm (36 in.) clear useable length. And 324 mm (12.75”) clear height dimension between each shelf. The height for all library shelving (B1, C1, C2 and D1) will not exceed 2083 mm (82 in.) in carriage height. For other library shelving including microfiche, maps/atlases, multimedia are different and specified below.

10.4.B.2 Total linear requirement is 662940 mm (26100 in.) for ‘B1’ shelves. Additional requirements for shelving unit ‘C1’ (printed material and binding machines), ‘C2’ (microfiche/multimedia/printed material), ‘D1’ (maps) are as below.

- Requirement of integration of various mediums – paper (books), microfiche, CD, DVD, video, atlases and maps. Appropriate shelving and pull-out drawers for various mediums will be required. See Annex and below for detailed description.

- B1 - There are 13 rows of double sided mobile shelving (B1). Each row has 5 double sided bays and each shelf is 914 mm (36 in.) in clear usable length. Clear inside depth is 305 mm (12 in.) per side. Clear height dimension between each shelf is 324 mm (12.75 in.) Shelving contractor to confirm total carriage width and length.
- B1 - There are 3 rows of single sided mobile shelving (B1). Each row has 5 single sided bays and each shelf is 914 mm (36 in.) in clear usable length. Clear inside depth is 305 mm (12 in.) per side. Clear height dimension between each shelf is 324 mm (12.75 in.). Shelving contractor to confirm total carriage width and length.

- C1 - There is 1 row of single sided fixed shelving (C1). This row will house printed material and binding machines. There are 5 single sided bays in this row. One bay is 660 mm (26 in.) clear useable length for each shelf. One bay is 1118 mm (44 in.) of clear useable length for each shelf. Binding machines will sit 864 mm (34 in.) above the floor. The overall length of the ‘C1’ row will match ‘B1’ carriage length. Clear usable depth is 483 mm (19 in.) for the entire ‘C1” row. Clear height dimension of shelves excepting those bays with binding machines must be 324 mm (12.75 in.). There must be retractable shelves on the shelves containing binding machines. Shelving contractor

to confirm total carriage width and length. See Annex. Note: Should circumstances change and binding machines are no longer required, this area must be able to easily convert into standard bookshelves matching 'B1' dimensions excepting depth. Necessary shelving must accompany this acquisition.

- C2 - There is 1 row of single sided fixed shelving (C2). This row will house printed material, a microfiche machine, microfiche and multimedia (CD/VHS/DVD). There are 5 bays in this row. Three bays are 914 mm (36 in.) in clear usable length for each shelf. There will be a retractable shelf on the shelf containing the microfiche reader. There is one bay 914 mm (36 in.) in clear usable length for each shelf and/or drawer which has one 324 mm (12.75 in.) clear height dimension book shelf, one shelf to accommodate a microfiche reader and 4 microfiche roll out drawers – shelving contractor to confirm dimensions of drawers. There is one bay intended for books with a clear height dimension between each shelf 324 mm (12.75 in.), shelving contractor to determine clear usable shelf length for this bay. There are two bays 914 mm (36 in.) of clear usable length for each shelf and/or drawer, each of these bays contain one book shelf located at the top of the bay with a clear height dimension between the shelf is 324 mm (12.75 in.) and 9 microfiche rollout drawers – shelving contractor to determine dimensions of drawers. There is one bay for multimedia with one shelf intended for books with a clear height dimension between shelves as 324 mm (12.75 in.) and 9 multimedia roll out drawers, shelving contractor to determine clear shelf length for this bay. The overall length of 'C2" will match 'B1' carriage length. Depth is 483 mm (19 in.) of clear depth shelf. The overall height of 'C2' will match 'B1' height. See Annex. Shelving contractor to confirm total carriage width and length. Note: Should circumstances change and binding machines are no longer required, this area must be able to easily convert into standard bookshelves matching 'B1' dimensions excepting depth. Necessary shelving must accompany this acquisition.

- D1 - There is 1 row of singled sided mobile shelving (D1). This row will house maps and atlases. There are 5 bays in this row. Each bay is 914 mm (36 in.) of clear usable length for each shelf and/or drawer. Four of the bays have 14 rollout drawers each which must have a stop on the front face to prevent spillage. There is 102 mm (4 in.) clear dimension between each shelf. One bay is for oversized atlases and maps and will contain display style shelving to accommodate larger size maps and atlases. Shelving contractor must confirm total carriage width and length. The clear shelf depth is 711 mm (28 in.)

10.4.B.3 Library book shelves (B1) must be a clear depth of 305mm (12 in.) Binding machines and printed material shelving (C1) must be 483 mm (19 in.) in clear shelf depth. Microfiche enclosed roll out drawers and multimedia and remaining shelving (C2) must be 483 mm (19 in.) of clear shelf depth. Library map/atlas roll out drawers (D1) must be 711 mm (28 in.) of clear shelf depth.

10.5.B.4 Row 'C1' – This is a row of custom wall mounted shelving which will house the binding machine and printed material. Shelving Contractor must verify weight of binding machines and design shelving to accommodate. Shelving contractor must coordinate location of electrical receptacles for binding machine with Landlord's electrician. Shelving contractor must provide cutouts in shelving panels to allow for access to receptacles.

10.4.B.5 Row 'C2' – This is a custom wall mounted shelving with shelves and drawers integrated into mobile shelving. Microfiche roll out drawers must have solid fixed dividers between rows of microfiche and each row must accommodate microfiche. Each row within the drawer must have an adjustable sliding stop and fixed dividers to accommodate material. Rows will run vertically within the drawer. Shelving contractor must verify size requirements of all material and allow for in drawer sizes with adjustable stoppers and fixed dividers. The rows within the drawers must be even in nature. Shelving contractor must verify shelf depth requirement to allow for microfiche machine. Shelving contractor must verify weight of microfiche machine and design shelving to accommodate. Shelving contractor must coordinate location of electrical receptacle for

microfiche machine with landlord's electrician; shelving contractor to provide cutouts in shelving panels to allow for access to receptacle. Unit must also accommodate multimedia (CD, DVD, Video, etc.) and must be contained within enclosed rollout drawers. Drawers must have solid fixed dividers between rows of multimedia and each row must accommodate multimedia. Each row within the drawer must have an adjustable sliding stop and fixed divider. The rows must be even in nature and must accommodate the size variations between CD, DVD and videos (VHS). Rows will run vertically within the drawer. The multimedia shelving must have a clear shelf depth of 483 mm (19 in.). Shelving contractor must verify size requirements of all material and allow for in drawer sizes

10.4.B.6 Row 'D1' - Unit must also accommodate atlases/maps and must be open faced pull out drawers with a stop on the front face to prevent spillage. The display style shelves for the oversized maps and atlases must have a stop to prevent spillage.

10.4.B.7 Shelves must be slotted on 76mm (3 in.) centers to receive dividers. Slots must coincide with the inside edge of the posts so a file divider can be used to provide a flush condition with the post at the shelf end.

10.4.B.8 The front and back flange of the shelf must be flush with the outside face of the post.

10.4.B.9 Shelves must be adjustable on no more than 38mm (1.5 in.) Centers.

10.4.B.10 Back Stop - The face of the back stop must be slotted on the same centers as the shelf to receive and retain file dividers. Back stop must be full height of shelf opening.

108.4.B.11 Center Stop - must be securely fastened at the center of double entry shelves and must be slotted on the same centers as the shelf to receive and retain file dividers.

10.4.B.12 File Dividers - must be a flat shape with at least two tabs to enter slots in shelf and a retaining tab on the back edge to stabilize the dividers against the back stop or center stop.

10.4.B.13 Dividers must be self locking and 152mm (6 in.) high and 254mm (10 in.) deep and must be solid without any holes. The tolerance allowed for divider height and depth is -/+ 25.4mm (-/+ 1 in.).

10.4.B.14 Thirty-two (32) card holders and all necessary hardware for a complete installation must be provided.

11.0 PERFORMANCE CRITERIA

11.1 Metal Finishes - The metal components must meet the following performance requirements:

11.1.1 Paint Adhesion - The adhesion rating of the finish must not be less than 4B when tested in accordance with ASTM D 3359 Method B.

11.1.2 Abrasion Resistance - The loss of the finish must not exceed 0.04g per 500 cycles, using at least a CS-10 wheel tested in accordance with ASTM D 4060.

11.1.3 Finish Hardness - The finish must meet the requirements of ASTM D3363, hardness H.

11.1.4 Horizontal Surface Deflection Test- Load the shelf surface in accordance with ANSI/BIFMA X5.5 and ANSI/BIFMA X5.9 functional distributed load test. Average the height of the end points

and subtract the height of the centre. The resulting dimension is the deflection. The maximum acceptable shelf deflection must be no more than its length divided by 180 (L/180).

11.1.5 All exposed and semi-exposed surfaces must have the same colour and finish as rest of the system

11.2 Fire Design Requirements

11.2.1 The mobile storage units must comply with HRSDC – Mobile Shelving – Fire Protection Design Requirements.

ANNEX ‘B’
TECHNICAL DRAWINGS

See attached drawings

(7 pages)

ANNEX "C"
BASIS OF PRICING

Mechanical Assist Shelving System

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm lot price, as specified in the contract. Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable. Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

Price is to include all delivery charges, administration, costs and risks of transport and customs clearance, including the payment of customs duties and taxes to the destination.

Bidders are to bid a total firm lot price for the supply, delivery and installation of a Mechanical Assist Shelving System for Environment Canada as detailed in Annex “A” - Requirement.

Item	Price
Supply of Mechanical Assist Mobile Shelving System as detailed in Annex “A” Requirement	$ _____(a)
Installation of Mechanical Assist Mobile Shelving as detailed in Annex “A” Requirement	$ _____(b)
Delivery of Mechanical Assist Mobile Shelving as detailed in Annex “A” Requirement	$ _____(c)
TOTAL	**$ _____(a+b+c)**

ANNEX 'D'

MANDATORY TECHNICAL REQUIREMENTS CROSS-REFERENCE

Bidders are requested to provide cross-reference below to identify the page(s) where each mandatory specification can be demonstrated in their technical documentation provided with their bid. Canada reserves the right to verify any and all information relating to mandatory requirements.

Reference Section	Technical Requirement	Cross Reference from Literature (ie: brochure title, page)
1.3	System must be HRSDC Requirements for mobile shelving installed in federal facilities	
1.5	Contractor will provide shop drawings to project authority for review and approval.	
1.6	Duplex outlets by other for binding machines and microfiche machine will rest on new fixed shelving, contractor will coordinate with landlord's electrician so that shelving cutouts allow access to the electrical receptacles.	
1.7	Contractor must confirm total carriage width and length.	
2.1	The Contractor will be responsible for training the end users in the operation of the mobile shelving unit.	
2.2	Contractor will be responsible for supplying one complete set of operating and maintenance instructions. As a minimum, these manuals must include instructions for operating, cleaning and maintenance of all components and finishes and the names, addresses, and telephone numbers for parts and services.	
3.1	The Contractor must provide no less than 72 hours notice to the Project Authority advising that on-site activities will commence.	
4.1	The manufacturer must have the ability to install the entire system in any normal construction including a raised floor.	
4.2.1	Manufacturer must be ISO 9001 certified for the design, production, installation and service of carriage mounted high-density mobile storage units and storage rails. Furnish certificate attesting to	

	manufacturer's ISO9001 quality system registration.	
4.2.2	Framing parts must be straight, square and plumb. All parts must be aligned and securely fastened. Any connections requiring welding or bolting must be finished and nonabrasive. Any exposed surface of the installation with which personnel may come in contact must be smooth and nonabrasive.	
4.2.3	Note all field conditions including examination of existing floor surface for compliance with requirements for installation tolerances and other conditions affecting performance of mobile storage units and verification of site dimensions before fabrication of shelving where field dimensions cannot be made without delaying work, establish dimensions in coordination with Project Authority.	
4.3.1	Waste Material from the manufacturing process must be minimized and/or recycled.	
4.3.2	The packaging must be designed to minimize waste, e.g. Bulk, reusable such as blanket wrap.	
4.4.1	Steel carriages and shelves must be painted and finished with factory power coat paint in textured colours specified by the customer. All aluminum components must be anodized, painted or otherwise treated to prevent oxidation. **Bidders must provide a list of available colours with their submission** and their colour choice will be confirmed at contract award.	
4.5.1	The metal components must meet the following performance requirements: 1.Adhesion - The adhesion rating of the finish must not be less than 4B when tested in accordance with ASTM D3359 Method B. 2.Abrasion Resistance - The loss of the finish must not exceed 0.020 g per 500 cycles, using at least a CS-10 wheel tested in accordance with ASTM D4060. 3.Scratch Resistance - The finish must meet the requirements of ASTM D3363, hardness H.	
5.1	Contractor must provide tailgate service delivery and/or hand delivery - no loading dock.	

8.1.1	The moveable and stationary ranges must be compatible and consistent in overall height, overall length, shelving design, construction and configuration.	
8.1.2	The carriages, shelves and related components must be designed, constructed, tested and furnished to support and operate within the specified weight load as stated in the carriage portion of the Detailed Requirements section.	
8.1.3	Rails, tracks, wheel and all drive components must exhibit no abnormal friction, abrasion, binding or wear on or between the contact surfaces.	
8.1.4	Under normal environmental and use conditions, components must not rust or exhibit any other type of corrosion.	
8.2.1	Rails must exhibit no movement or deflection during operation of mobile ranges	
8.2.2	All track and rail lengths must extend under all stationary and mobile ranges.	
8.2.3	All rail connection joints must provide horizontal and vertical continuity between rail sections.	
8.2.4	Rail sections underneath the stationary ranges must be attached in a manner to equally disburse the loaded ranges weight to the rail and to the grout, in a manner of equal or greater surface disbursement, as a moveable range.	
8.2.5	Rail guidance gaps must be 12.70 mm (1/2 in.) or less	
8.2.6	Assure track remains permanently level and eliminates the possibility of carriage drift.	
8.3.1	The deck must be constructed of 19.05 mm (3/4 in.) Thick, 6 ply underlayment grade plywood.	
8.3.2	Flush deck to the rails to eliminate any obstructions on the floor, tripping or material falling underneath system. A solid floor allows for use of carts and library ladders/step stools.	
8.3.3	There must be no open gaps between the decking and the track and rail except for anti-tip mechanisms.	
8.3.4	Decking and ramp must be installed in a manner that will prevent warping and deformation from normal operation and loading.	

8.3.5	The ramp must not extend past the front of the units into the main access aisle. The ramp must have a minimum slop of 1:12.	
8.4.1	Fixed carriages must be of the same construction and height as the moveable carriages and anchored to the rails.	
8.4.2	Carriage splices must be the bolted type designed to maintain proper unit alignment.	
8.4.3	Carriage straightness must have no more than 6.53 mm (1/4 in) maximum deviation from a true straight line. There must be no permanent set or slippage in any joint when exposed to forces encountered in normal operation circumstances.	
8.4.4	Carriage construction must allow the shelving uprights to be secured to the carriage frame.	
8.4.5	Each drive wheel must have an axle of appropriate size considering the properties of the material used, and the stress and fatigue factors.	
8.4.6	Drive shaft and wheel assemblies must exhibit no play or looseness over the entire length of that assembly.	
8.4.7	Mobile shelving units must be provided with bumpers to provide a fixed clearance between mobile shelving carriages in accordance with the HRSDC - Mobile Shelving - Fire Protection Design Requirements.	
8.5.1	Safety brake installed (if necessary for type of shelving)	
8.5.2	Ten (10) Side panels for all outward facing single rows/range (4 for Records [2 for A1 and 2 for A2] and 6 for Library [3 for B1, 1 for C1, 1 for C2, 1 for D1]) – See Annex A.	
8.5.3	End panels for each end of every row/range. 10 end panels for single sided rows for Records [4 for A1, 6 for A2] and 6 end panels for double sided rows [6 for A1] for Records. 26 end panels for double sided rows in Library [26 for B1], 6 end panels for single sided rows in library [6 for B1], two 483 mm (19 in.) wide end panels [2 for C1]. Two 483 mm (19 in.) wide end panels [2 for C2], two 711 mm (28 in.) wide end panels for maps [2 for D1].	
8.5.4	Shelving must have a clean appearance without holes on exposed surfaces except	

	where shelves, back stops and centre stops are slotted or punched for dividers and centre is punched for centre stops	
8.5.5	Front and back of the shelves are flush with the outside face of the post	
8.5.6	Shelving must be customized/designed to meet the needs of the business and must be adjustable	
8.5.7	The successful supplier will provide plans and elevation at time of tender submission.	
8.5.8	Supplier shop drawings must show: a. Fabrication, assembly and installation details including descriptions of procedures and diagrams b. Complete extent of installation layout including clearances, spacing and relation to adjacent construction in plan, elevations and services. c. Indicate clear exit and access aisle widths. d. Access to concealed components, assemblies connections, attachments, reinforcements and anchorage and deck details. e. Edge conditions and extent of finish floor within area where units are installed. f. Show installation details at non-standard conditions.	
9.1.1	Mobile storage system must not exceed the allowable live load in the effect area which is 100 pounds per square foot.	
9.1.2	The system alignment must be 6.53 mm (1/4 in) maximum variation, measured between the edges of end panels within each range in all modules, in all aisle positions.	
9.2.1	Rails must be manufactured to carry a minimum load of 453.6 kg (1,000 pounds) per 0.30 linear meter of carriage.	
9.2.2	If the width to height ratio exceeds 4 to 1, then the rails must have anti-tip channels to prevent tipping as a minimum safety requirement.	
9.2.3	Rails must be attached to the top of a floor and must allow for adjustment so that rails can be leveled over an uneven floor.	
9.2.4	The rail installation must be done in such manner to eliminate rail deflection, maintain alignment and eliminate separation.	
9.2.5	Levelness of rails equals 1.59 mm (1/16 in)	

	maximum variation from true level within any module; 1.59 mm (1/16 in) maximum variation between adjacent rails perpendicular to rail direction.	
9.2.6	The rail must be 15.875 mm (5/8 in.) square cold-rolled steel. Each section to be a minimum of 243.84 cm (8 feet) with shorter sections used only to terminate each individual rail assembly. In addition, each end of the rail overlaps the track housing and is pinned to the track with a 6.35 mm (¼ in.) diameter roll pin.	
9.2.7	All rail connection joints must provide horizontal and vertical continuity between rail sections and gradually transfer the concentrated wheel point load to and from adjoining rail sections.	
9.2.8	Tracks must be designed to be attached on top of a floor and to allow for adjustment so tracks can be leveled over uneven floor.	
9.2.9	Tracks must be located and positioned properly leveled and grouted, allowing at least (12.7 mm/1/2 in.) For grout under high point of floor. The void area between the track and floor must be completely filled with a non-shrink grout. Shimming of the rails for leveling and/or support purposes is not acceptable.	
9.2.10	Each track must have a minimum base area of 101.6 mm (4 in.)	
9.2.11	The tracking housing must be extruded from 6063-T5 aluminum alloy, or material of an equivalent strength and grade.	
9.2.12	The grout used must be a ready-mixed high strength, controlled expansive grout with superior dynamic load stability, which when mixed with water, will harden rapidly to produce a permanent foundation for the system.	
9.2.13	Grout must be non-corrosive and floor leveling instead of shims, nonmetallic and non-shrink. Specifications for the grout after curing are a minimum strength of 7000 PSI. Grout must be worked under the rail, any voids completely filled and trimmed up sides flush with the rails.	
9.3.1	All carriages must be capable of supporting a minimum load of 453.6 kg (1,000 pounds) per 0.30 meter without any distortion.	
9.3.2	All carriage components must be capable	

	of moving a carriage load of 453.6 kg (1,000 pounds) per 0.30 linear meter of carriage.	
9.3.3	All carriages are to be unit welded steel construction capable of supporting a minimum load of 1000 pounds per carriage foot without distortion.	
9.3.4	Fixed carriages must be of the same construction and height as the movable carriages and anchored to the rails for a complete, homogenous system.	
9.3.5	Carriage construction must be designed to allow any type of shelving to be securely anchored to the carriages with vibration proof fasteners.	
9.3.6	Each drive shell must be fitted with two permanently sealed and shielded bearings housed in a self-aligning flanged pillow block. Drive wheels with a single centre-wheel bearing are unacceptable.	
9.3.7	A minimum of 4 guide wheels is required per movable carriage.	
9.3.8	All mobile carriages must be fitted with full length solid stress proof steel drive shafts connecting all wheels on the drive side of the carriage with couplings.	
9.3.9	Complete drive shaft and wheel assemblies must exhibit no play or looseness over the entire length of the carriage.	
9.3.10	All spices and connections between drive shafts and axles must be done by means of a securely retained coupling method.	
9.3.11	Rubber bumpers must be mounted to the carriage fact to protect material that may extend beyond the shelf fact and provide a positive stop for all moveable carriages.	
9.3.12	All carriages are constructed from 12 gauge steel.	
9.3.13	Mechanical assist systems are moved mechanically by means of a chain and sprocket reduction drive system, which is operated by hand. Each moveable carriage is provided with a continuous drive shaft driving all wheels.	
9.3.14	The mechanical assist handle must be of a 3-spoke design. The transfer of power from the mechanical handle to the drive shaft must be direct drive chain driven.	
9.3.15	All chains and sprockets must be concealed for safety, yet readily available	

	for ease of maintenance. Exposed chains and sprockets are unacceptable.	
9.3.16	The gearing mechanism of the drive assembly must be easily accessible and able to accept larger or small sprockets depending on the media weight changes.	
9.3.17	The gearing mechanism must be covered by an easily removable panel to provide access for adjustments to the chain tension.	
9.4.1	All wheels must be the appropriate size considering the properties of the material used, and the stress and fatigue factors and must be equipped with two permanently lubricated bearing assemblies.	
9.4.2	There must be no friction between the wheels and the carriage.	
9.4.3	All wheels on one side of the carriage must be driven by a steel drive shaft.	
9.4.4	Minimum load capacity per wheel 3200 pounds. Wheels shall be precision ground and balanced. All bearings shall be permanently shielded and balanced.	
9.5.1	Each movable unit must be equipped with a handle on the end panel which transmits power through a direct drive all drive wheels.	
9.5.2	One pound of effort on the handle must move a minimum of 1814.4kg (4,000 pounds) carriage weight and a maximum of eight (8) turns must open a 1408 mm (55.4 in) wide aisle.	
9.5.3	There must be no drifting or rolling of stopped ranges.	
9.5.4	There must be at least one safety locking pin on each movable carriage.	
9.5.5	Provide drive system which prevents carriage whipping, binding and excessive wheel/rail wear under normal operation.	
9.6.1	A 16 gauge stainless steel ramp threshold must be attached, providing smooth entry from existing floor to system floor.	
9.6.2	Finished flooring must be flush and level with the top of the rails. There will be no open gaps or spaces between the decking and tracks. The ramp must be constructed and finished in the same material as the deck with the exception of the stainless steel threshold.	
9.6.3	Decking and ramp must be installed in a manner that will prevent warping,	

	deformation and movement during normal operation and loading.	
10.1	All shelving sections must be available as a 4-post design consisting of three basic parts; uprights, shelves and shelf supports. Parts must be assembled without nuts, bolts, studs or clips; and without the need for tools of any kind.	
10.2	Overall maximum height of mobile storage system must not exceed 2083 mm (82 in) in height.	
10.3	Shelving ranges must be complete with tops.	
10.4.A.2	The total linear requirement is 187452 mm (7380 in). Additional requirements are as follows: • One retractable work shelf per bay at the second shelf level from the top of the unit. • Standard locks • All bays must have five (5) openings (shelves) in height with three (3) file dividers per opening.	
10.4.A.3	Shelves must be slotted on 76 mm (3 in) centers to receive dividers. Slots must coincide with the inside edge of the posts so a file divider can be used to provide a flush condition with the post at the shelf end.	
10.4.A.4	The front and back flange of the shelf must be flush with the outside face of the post.	
10.4.A.5	Shelves must be adjustable on no more than 38 mm (1.5 in.) centers	
10.4.A.6	Back stop - the fact of the back stop must be slotted on the same centers as the shelf to receive and retain file dividers. Back stop must be full height of shelf opening.	
10.4.A.7	Center stop - must be securely fastened at the center of double entry shelves and must be slotted on the same centers as the shelf to receive and retain file dividers.	
10.4.A.8	File Dividers - must be a flat shape with at least two tabs to enter slots in shelf and a retaining tab on the back edge to stabilize the dividers against the back stop or center stop.	
10.4.A.9	Dividers must be self locking and 152 mm (6 in.) High and 254 mm (10 in.) Deep and must be solid without any holes. The tolerance allowed for divider height and depth is -/+ 25.4mm (-/+ 1 in.)	
10.4.A.10	Eleven (11) card holders and all necessary	

	hardware for a complete installation must be provided.	
10.4.B.1	Excepting microfiche, map and shelves fixed to side walls all “B1” shelves in the library must be 305 mm (12 in.) Clear inside depth and 914 mm (36 in.) Clear useable length, and 324 mm (12.75”) clear height dimension between each shelf. The height for all library shelving (B1, C1, C2, and D1) will not exceed 2083 mm (82 in.) In carriage height. For other library shelving including microfiche, maps/atlases, multimedia are different and specified below.	
10.4.B.2	Total linear requirement is 662940 mm (26100 in) for “B1” shelves. Additional requirements for shelving unit “C1” (printed material and binding machines); “C2” (microfiches/multimedia/printed material), “D1” (maps) are below: • Requirement of integration of various mediums - paper (books), microfiche, CD, DVD, video, atlases and maps. Appropriate shelving and pull-out drawers for various mediums will be required. • B1 - There are 13 rows of double sided mobile shelving (B1). Each row has 5 double sided bays and each shelf is 914 mm (36 in.) In clear usable length. Clear inside depth is 305 mm (12 in.) per side. Clear height dimensions between each shelf is 324 mm (12.75 in.) Shelving contractor to confirm total carriage width and length. • B1 - There are 3 rows of single sided mobile shelving (B1). Each row has 5 single 3 sided bays and each shelf is 914 mm (36 in.) In clear usable length. Clear inside depth is 305 mm (12 in.) Per side. Clear height dimensions between each shelf is 324 mm (12.75 in.) Shelving contractor to confirm total carriage width and length. • C1 - There is 1 row of single sided fixed shelving (C1). This row will house printed material and binding machines. There are 5 single sided bays in this row. One bay is 660 mm (26 in.) Clear usable length for each shelf. One bay is 1118 mm (44 in.) of clear useable length for each shelf. Binding machines will sit 864 mm (34 in.)	

Above the floor. The overall length of the “C1” row will match “B1” carriage length. Clear usable depth is 483 mm (19 in.) For the entire “C1” row. Clear height dimension of shelves excepting those bays with binding machines must be 324 mm (12.75 in.) There must be retractable shelves on the shelves containing binding machines. Shelving contractor to confirm total carriage width and length.

- C2 - There is 1 row of single sided fixed shelving (C2). This row will house printed material, a microfiche machine, microfiche and multimedia (CD/VHS/DVD). There are 5 bays in this row. Three bays are 914 mm (36 in.) In clear usable length for each shelf. There will be a retractable shelf on the shelf containing the microfiche reader. There is one bay 914 mm (36 in.) In clear usable length for each shelf and/or drawer which has one 324 mm (12.75 in.) clear height dimension book shelf, one shelf to accommodate a microfiche reader and 4 microfiche roll out drawers - shelving contractor to confirm dimensions of drawers. There is one bay intended for books with a clear height dimension between each shelf 324 mm (12.75), shelving contractor to determine clear usable shelf length for this bay. There are two bays 914 m m (36 in.) of clear usable length for each shelf and/or drawer, each of these bays contain one book shelf located at the top of the bay with a clear height dimension between the shelf is 324 mm (12.75 in) and 9 microfiche rollout drawers - shelving contractor to determine dimensions of drawers. There is one bay for multimedia with one shelf intended for books with a clear height dimension between the shelves is 324 mm (12.75 in.) And 9 multimedia roll out drawers, shelving contractor to determine clear shelf length for this bay. The overall length of “C2” will match “B1” carriage length. Depth is 483 mm (19 in.) Of clear depth shelf. The overall height of “C2” will match “B1” height. Shelving contractor to confirm total carriage

	width and length. Note: Should circumstances change and binding machines are no longer required, this area must be able to easily convert into standard bookshelves matching "B1" dimensions excepting depth. Necessary shelving must accompany this acquisition. • D1 - There is 1 row of single sided mobile shelving (D1). This row will house maps and atlases. There are 5 bays in this row. Each bay is 914 mm (36 in.) Of clear usable length for each shelf and/or drawer. Four of the bays have 14 rollout drawers each which must have a stop on the front face to prevent spillage. There is 102 mm (4 in.) clear dimension between each shelf. One bay is for oversized atlases and maps and will contain display style shelving to accommodate larger size maps and atlases. Shelving contractor must confirm total carriage width and length. The clear shelf depth is 711 mm (28 in.)	
10.4.B.3	Library book shelves (B1) must be a clear depth of 305 mm (12 in.) Binding machines and printed material shelving (C1) must be 483 mm (19 in.) In clear shelf depth. Microfiche enclosed roll out drawers and multimedia and remaining shelving (C2) must be 483mmm (19 in.) Of clear shelf depth. Library map/atlas roll out drawers (D1) must be 711 mm (28 in.) Of clear shelf depth.	
10.5.B.4	Row C1 - this is a row of custom wall mounted shelving which will house the binding machine and printed material. Shelving Contractor must verify weight of binding machines and design shelving to accommodate. Shelving contractor must coordinate location of electrical receptacles for binding machine with Landlord's electrician. Shelving contractor must provide cutouts in shelving panels to allow for access to receptacles.	
10.4.B.5	Row "C2" - This is a custom wall mounted shelving with shelves and drawers integrated into mobile shelving. Microfiche roll out drawers must have solid fixed dividers between rows of microfiche and each row must accommodate microfiche.	

	Each row within the drawer must have an adjustable sliding stop and fixed dividers to accommodate material. Rows will run vertically within the drawer. Shelving contractor must verify size requirements of all material and allow for in drawer sizes with adjustable stoppers and fixed dividers. The rows within the drawers must be even in nature. Shelving contractor must verify shelf depth requirement to allow for microfiche machine. Shelving contractor must verify weight of microfiche machine and design shelving to accommodate. Shelving contractor must coordinate location of electrical receptacle for microfiche machine with landlord's electrician; shelving contractor to provide cutouts in shelving panels to allow for access to receptacle. Unit must also accommodate multimedia (CD, DVD, Video, etc.) And must be contained within enclosed rollout drawers. Drawers must have solid fixed dividers between rows of multimedia and each row must accommodate multimedia. Each row within the drawer must have an adjustable sliding stop and fixed divider. The rows must be even in nature and must accommodate the size variations between CD, DVD and videos (VHS). Rows will run vertically within the drawer. The multimedia shelving must have a clear shelf depth of 483 mm (19 in.) Shelving contractor must verify size requirements of all material and allow for in drawer sizes.	
10.4.B.6	Row D - Unit must also accommodate atlases/maps and must be open faced pull out drawers with a stop on the front face to prevent spillage. The display style shelves for the oversized maps and atlases must have a stop to prevent spillage.	
10.4.B.7	Shelves must be slotted on 76 mm (3 in.) Centers to receive dividers. Slots must coincide with the inside edge of the posts so a file divider can be used to provide a flush condition with the post at the shelf end.	
10.4.B.8	The front and back flange of the shelf must be flush with the outside face of the post.	
10.4.B.9	Shelves must be adjustable on no more than 38 mm (1.5 in.) centers	
10.4.B.10	The face of the back stop must be slotted	

	on the same centers as the shelf to receive and retain file dividers. Back stop must be full height of shelf opening.	
10.4.B.11	Center Stop - must be securely fastened at the center of double entry shelves and must be slotted on the same centers as the shelf to receive and retain file dividers.	
10.4.B.12	File Dividers must be a flat shape with at least two tabs to enter slots in shelf and a retaining tab on the back edge to stabilize the dividers against the back stop or center stop.	
10.4.B.13	Dividers must be self locking and 152 mm (6 in.) High and 254 mm (10 in.) Deep and must be solid without any holes. The tolerance allowed for divider height and depth is -/+ 25.4 mm (-/+ 1 in.)	
10.4.B.14	Thirty-two (32) card holders and all necessary hardware for a complete installation must be provided.	
11.1.1	Paint adhesion - The adhesion rating of the finish must not be less than 4B when tested in accordance with ASTM D 3359 Method B.	
11.1.2	Abrasion Resistance - The loss of the finish must not exceed 0.04g per 500 cycles, using at least a CS-10 wheel tested in accordance with ASTM D 4060.	
11.1.3	Finish Hardness - The finish must meet the requirements of ASTM D3363, hardness H.	
11.1.4	Horizontal Surface Deflection Test - load the shelf surface in accordance with ANSI/BIFMA X5.5 and ANSI/BIFM X5.9 functional distributed load test. Average the height of the end points and subtract the height of the centre. The resulting dimension is the deflection. The maximum acceptable shelf deflection must be no more than its length divided by 180 (L/180).	
11.1.5	All exposed and semi-exposed surfaces must have the same colour and finish as the rest of the system.	
11.2.1	The mobile storage units must comply with HRSDC - Mobile Shelving - Fire Protection Design Requirements.	

ANNEX "E"
CONSENT TO A CRIMINAL RECORD VERIFICATION

Bidders must submit with their bid, by the bid solicitation closing date:

(a) a complete list of names of all individuals who are currently directors of the Bidder;

(b) a properly completed and signed form Consent to a Criminal Record Verification (PWGSC-TPSGC 229), for each individual named in the list.

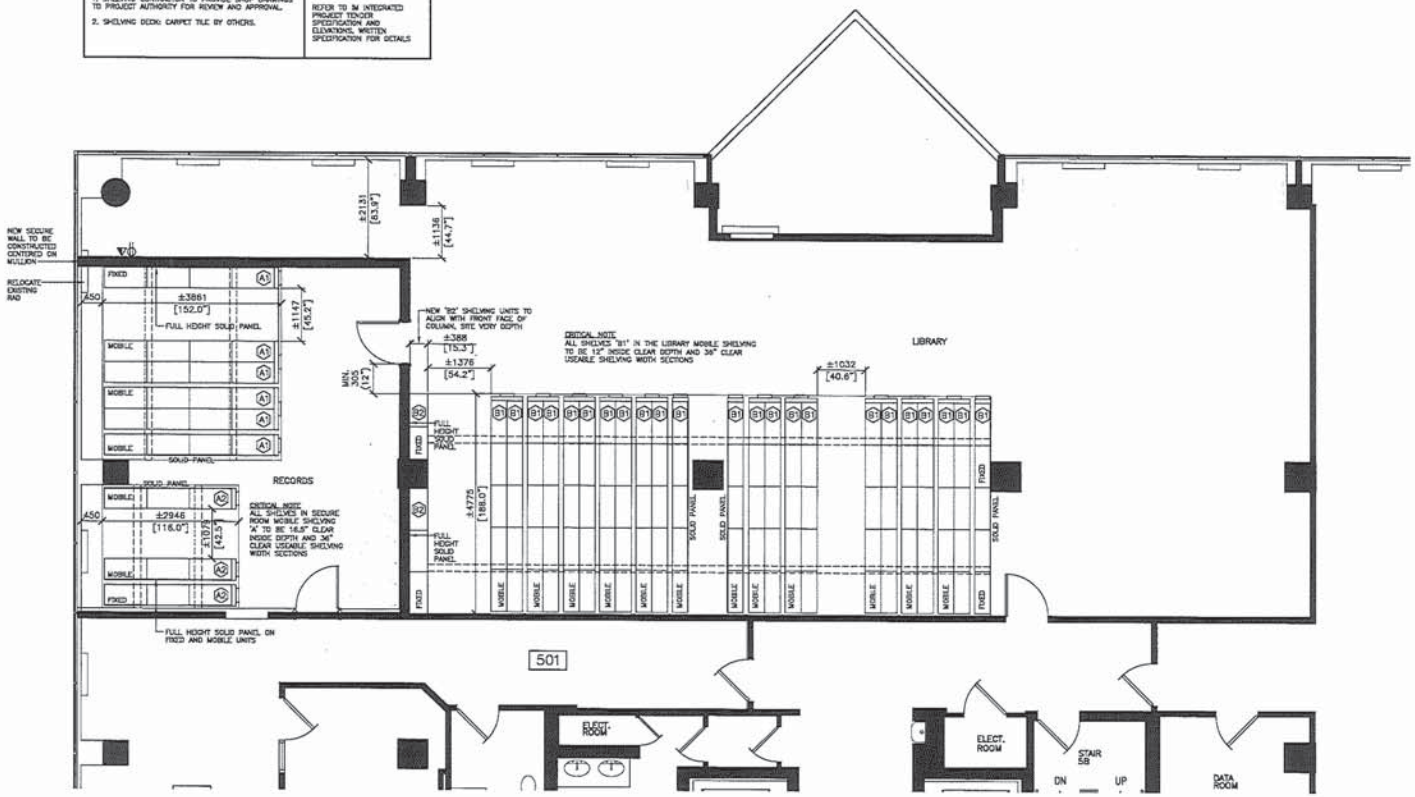
Directors: (Please print clearly)

NAME	NAME

Please see copy of form PWGSC-TPSGC 229 attached.

NOTES:
1. SHELVING CONTRACTOR TO PROVIDE SHOP DRAWINGS TO PROJECT AUTHORITY FOR REVIEW AND APPROVAL.
2. SHELVING DECK: CARPET TILE BY OTHERS.

SHELVING CONFIGURATIONS
A1, A2, B1 AND B2.
REFER TO 34 INTEGRATED PROJECT TENDER SPECIFICATION AND ELEVATIONS, WRITTEN SPECIFICATION FOR DETAILS



FURNITURE PLAN (MOBILE SHELVING CONFIGURATION)

SCALE 1:50

Public Works and Government Services Canada / Travaux Publics et Services gouvernementaux Canada

NORTH

no.	revisions / révisions	date
1	ISSUED FOR REVIEW AND SIGNOFF	JUN 12 2012

project / projet

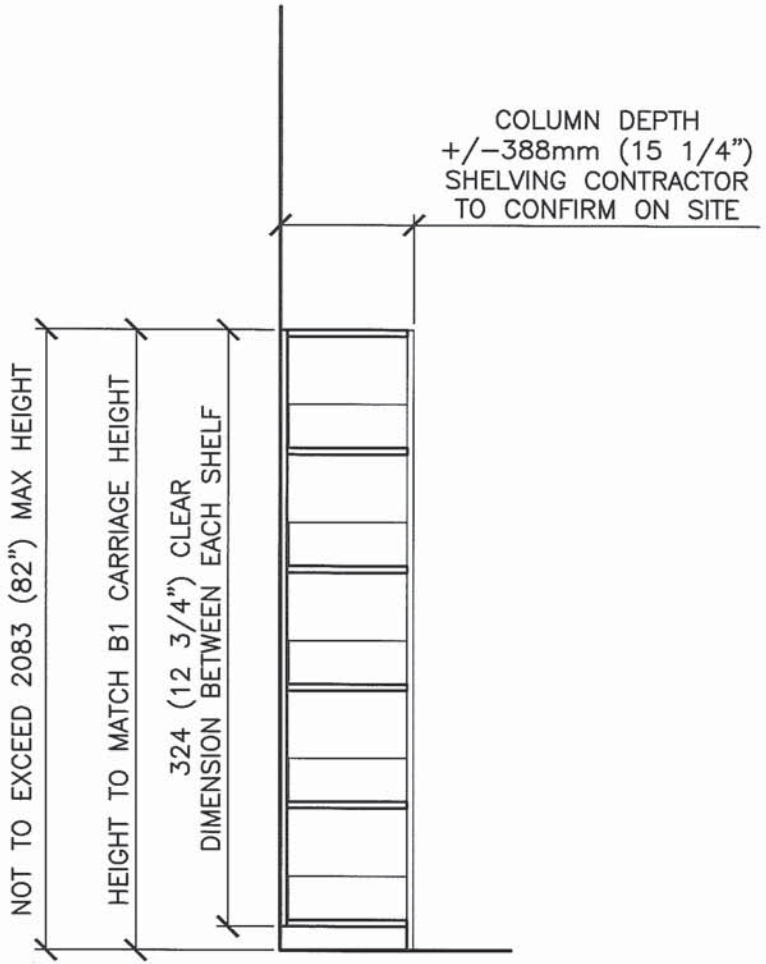
ENVIRONMENT CANADA
5TH FLOOR, QUEEN'S SQUARE
45 ALDERNEY DRIVE
DARTMOUTH, NOVA SCOTIA

drawing / dessin

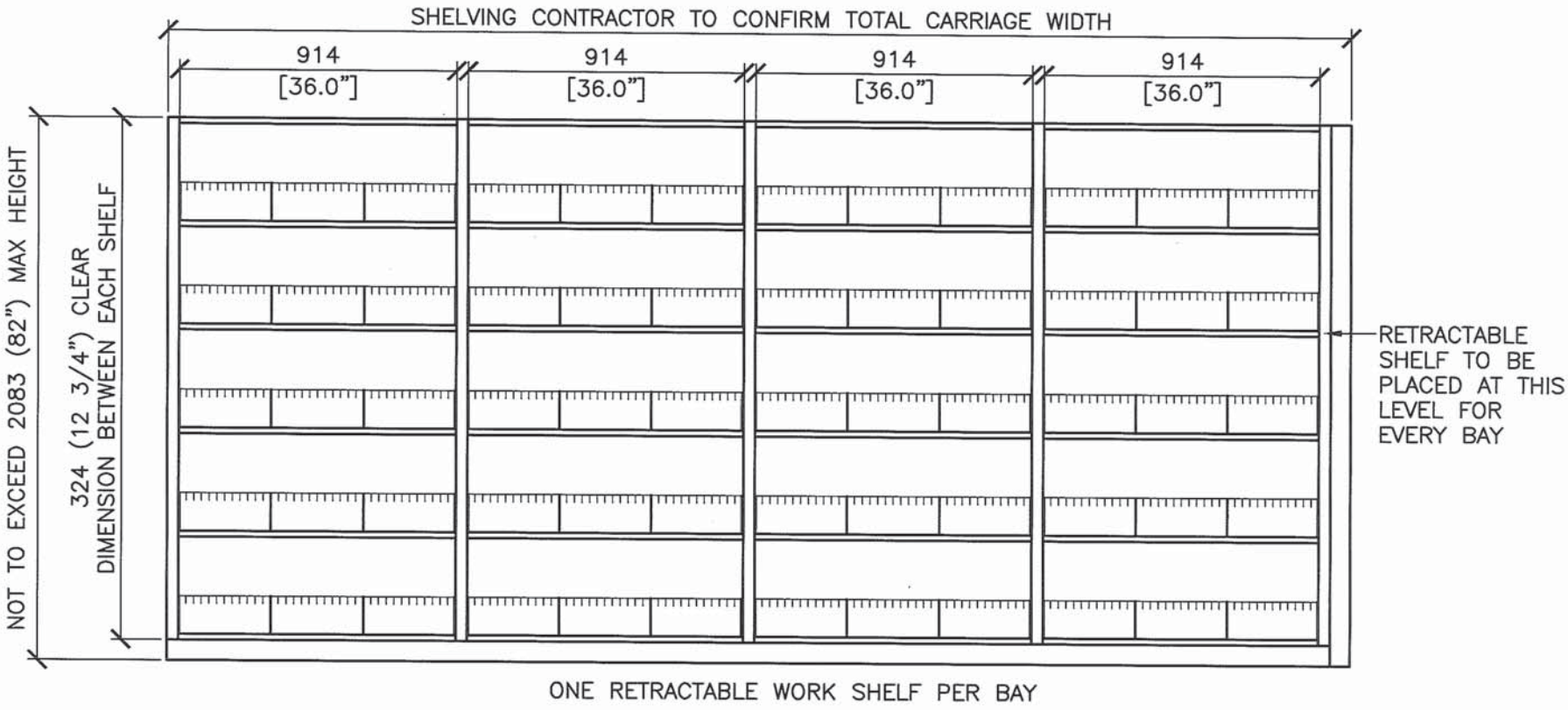
FURNITURE PLAN
(FOR CONFIGURATION OF MOBILE SHELVING)

designed	MAC INTERIOR DESIGN INC.	comps
date	JUNE 19, 2012	
drawn	MAC INTERIOR DESIGN INC.	dessiné
date	JUNE 25, 2012	
approved		approuvé
date		
Tender		Soumission
PWGSC Project Manager		Administrateur de projets TPSGC
project number		no. du projet
drawing no.	A–1	no. du dessin

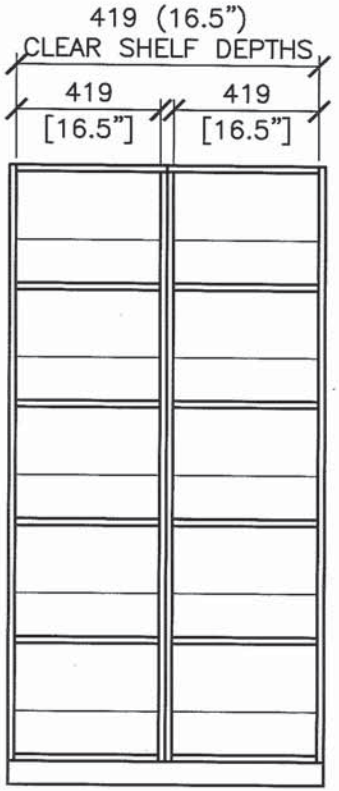
PWGSC A1 (2004)



SECTION THRU
SHELVING B2
(BOOK SHELVES)



FRONT ELEVATION
SHELVING A1



END ELEVATION WITHOUT PANEL
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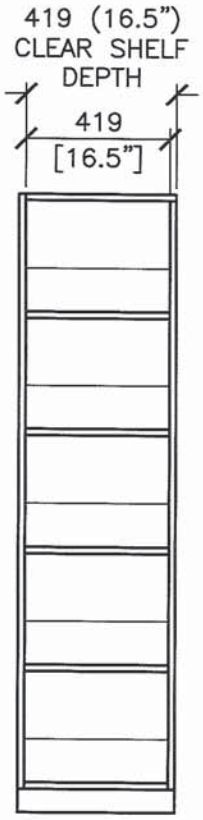

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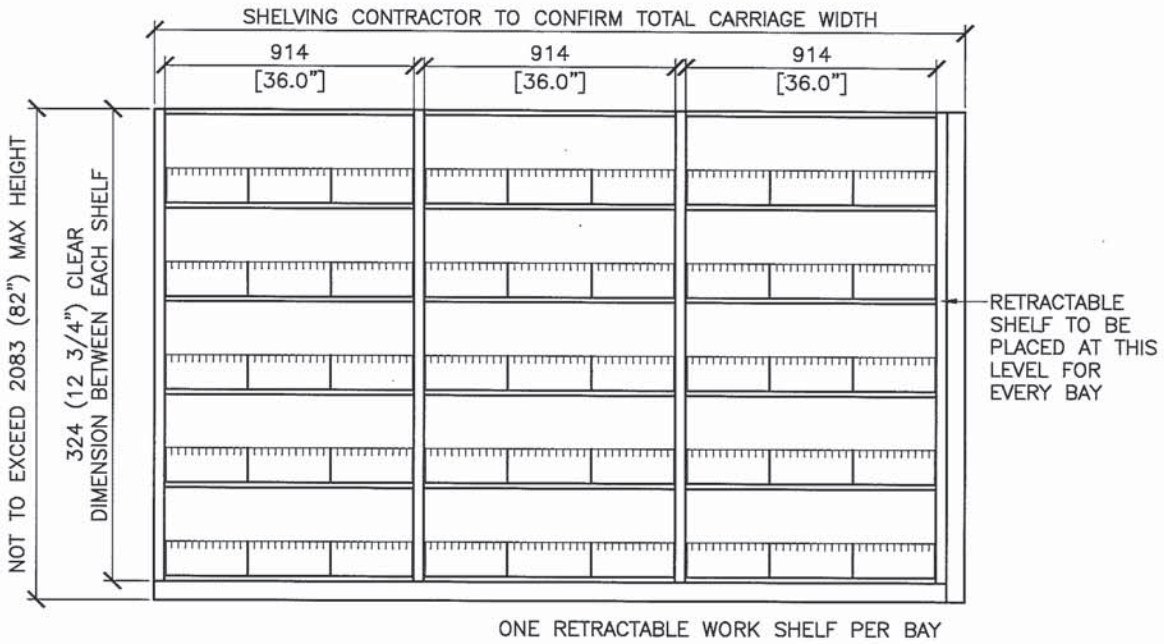

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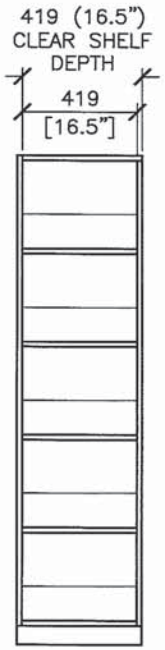
SHELVING A2



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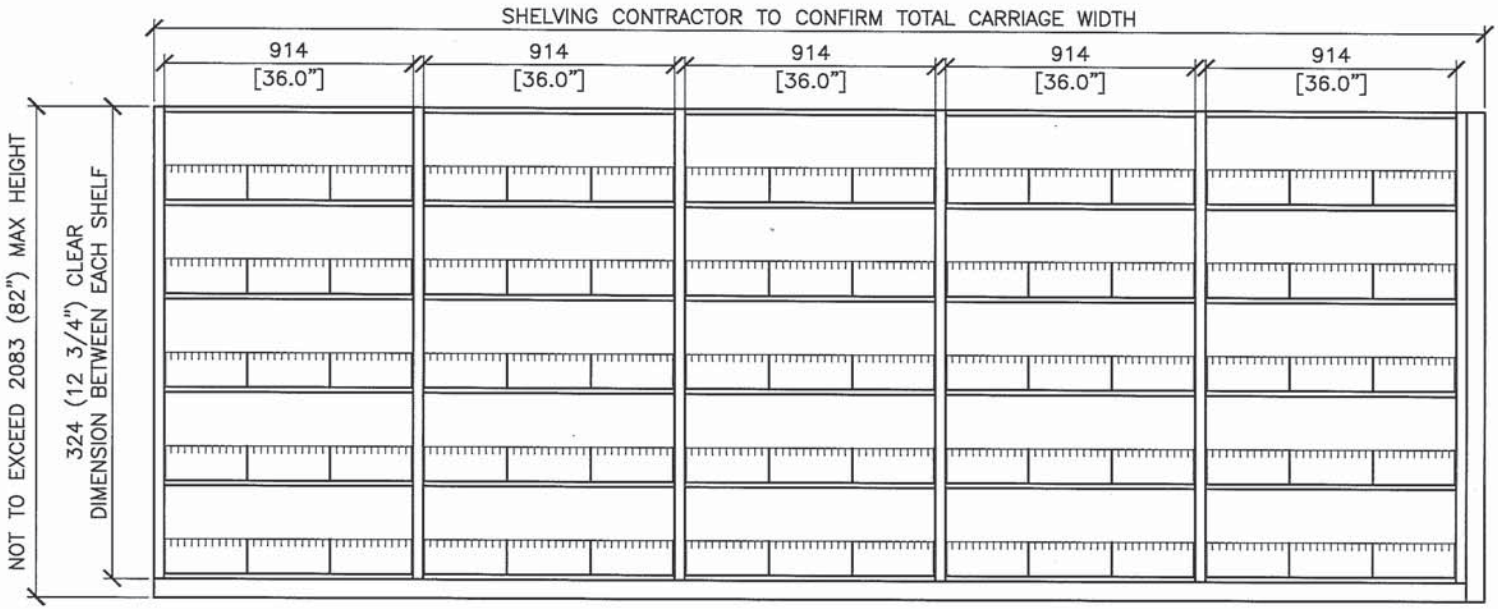
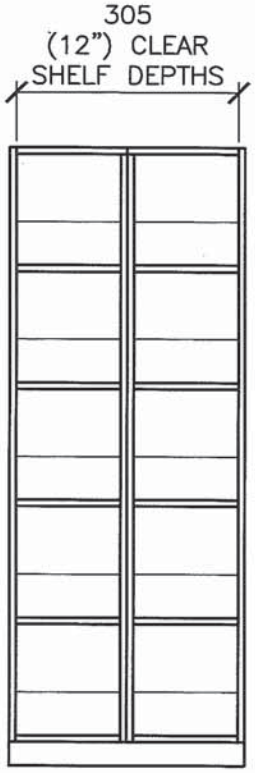


FRONT ELEVATION
SHELVING B1



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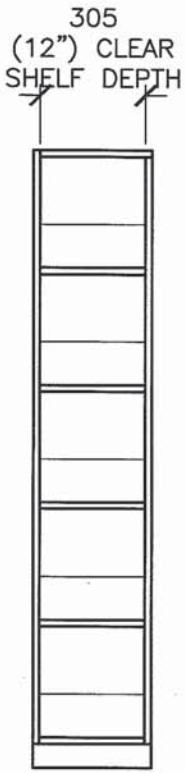
SHELVING B1 (DOUBLE)



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SHELVING B1 (SINGLE)