

**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving
PWGSC
33 City Centre Drive
Suite 480
Mississauga
Ontario
L5B 2N5
Bid Fax: (905) 615-2095**

**Request For a Standing Offer
Demande d'offre à commandes**

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

Canada, as represented by the Minister of Public Works and Government Services Canada, hereby requests a Standing Offer on behalf of the Identified Users herein.

Le Canada, représenté par le ministre des Travaux Publics et Services Gouvernementaux Canada, autorise par la présente, une offre à commandes au nom des utilisateurs identifiés énumérés ci-après.

Comments - Commentaires

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

Issuing Office - Bureau de distribution
Public Works and Government Services Canada
Ontario Region
33 City Centre Drive
Suite 480
Mississauga
Ontario
L5B 2N5

Title - Sujet Storage Tanks	
Solicitation No. - N° de l'invitation K3D33-121331/A	Date 2013-02-21
Client Reference No. - N° de référence du client K3D33-121331	GETS Ref. No. - N° de réf. de SEAG PW-\$TOR-015-6211
File No. - N° de dossier TOR-2-35308 (015)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2013-04-03	
Time Zone Fuseau horaire Eastern Daylight Saving Time EDT	
Delivery Required - Livraison exigée See herein	
Address Enquiries to: - Adresser toutes questions à: Abela, Aaron	Buyer Id - Id de l'acheteur tor015
Telephone No. - N° de téléphone (905)615-2061 ()	FAX No. - N° de FAX (905)615-2060
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF THE ENVIRONMENT 4905 DUFFERIN STREET DOWNSVIEW Ontario M3H5T4 Canada	
Security - Sécurité This request for a Standing Offer does not include provisions for security. Cette Demande d'offre à commandes ne comprend pas des dispositions en matière de sécurité.	

Instructions: See Herein

Instructions: Voir aux présentes

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

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Solicitation No. - N° de l'invitation

K3D33-121331/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

tor015

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

K3D33-121331

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TOR-2-35308

CCC No./N° CCC - FMS No/ N° VME

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PART 1 - GENERAL INFORMATION

1. Introduction

The Request for Standing Offers (RFSO) is divided into seven parts plus attachments and annexes, as follows:

Part 1 General Information: provides a general description of the requirement;

Part 2 Offeror Instructions: provides the instructions applicable to the clauses and conditions of the RFSO;

Part 3 Offer Preparation Instructions: provides offerors with instructions on how to prepare their offer to address the evaluation criteria specified;

Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria which must be addressed in the offer, and the basis of selection;

Part 5 Certifications: includes the certifications to be provided;

Part 6 Insurance Requirements: includes specific requirements that must be addressed by offerors; and

Part 7 7A, Standing Offer, and 7B, Resulting Contract Clauses:

7A, includes the Standing Offer containing the offer from the Offeror and the applicable clauses and conditions;

7B, includes the clauses and conditions which will apply to any contract resulting from a call-up made pursuant to the Standing Offer.

The Annexes include the Requirement, the Basis of Payment, the Periodic Usage Reports - Standing Offer, Insurance Requirement and the Financial Evaluation, and any other annexes.

2. Summary

To establish a Regional Individual Standing Offer (RISO) with a supplier on behalf of Environment Canada, Meteorological Services of Canada, located at Downsview, Ontario. This RISO is for the supply, manufacture and delivery of Hydrogen Gas Storage Tank Systems, and associated parts, built in accordance with the "build-to-print" drawing packages in Annex "A" Requirement on an "as and when requested" basis.

The estimated business volume is approximately four (4) tank systems per year, up to a maximum of ten (10) tank systems per year, while not exceeding twenty (20) tank systems over the period of the standing offer.

It is the intent to issue one standing offer as a result of this solicitation.

The standing offer period will be from the Date of the Standing Offer Issuance to March 31, 2015.

Pursuant to Section 01 of Standard Instructions 2006 and 2007, Offerors must submit a complete list of names of all individuals who are currently directors of the Offeror. Furthermore, as determined by the Special Investigations Directorate, Department Oversight Branch, each individual named on the list may be requested to complete a Consent to Criminal Record Verification form and related document.

The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), and the Agreement on Internal Trade (AIT).

3. Debriefings

After issuance of a standing offer, Offerors may request a debriefing on the results of the request for standing offers process. Offerors should make the request to the Standing Offer Authority within 15 working days of receipt of the results of the request for standing offers process. The debriefing may be in writing, by telephone or in person.

PART 2 - OFFEROR INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the Request for Standing Offers (RFSO) 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.

Offerors who submit an offer agree to be bound by the instructions, clauses and conditions of the RFSO and accept the clauses and conditions of the Standing Offer and resulting contract(s).

The 2006 (2013-01-28) Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the RFSO.

Subsection 5.4 of 2006, Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days
Insert: ninety (90) days

1.1 SACC Manual Clauses

1.1.1 Condition of Material

SACC Manual Clause M1004T (2011-05-16) Condition of Material

1.1.2 No Substitute Products

Bidders must provide products that are of the same description, brand name, model and/or part number as detailed in the item description of the bid solicitation. Bidders are advised that substitute products will not be considered.

2. Submission of Offers

Offers 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 Request for Standing Offers.

Due to the nature of the Request for Standing Offers, transmission of offers by facsimile to PWGSC will not be accepted.

3. Enquiries - Request for Standing Offers

All enquiries must be submitted in writing to the Standing Offer Authority no later than ten (10) calendar days before the Request for Standing Offers (RFSO) closing date. Enquiries received after that time may not be answered.

Offerors should reference as accurately as possible the numbered item of the RFSO to which the enquiry relates. Care should be taken by offerors 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 offerors do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all offerors. Enquiries not submitted in a form that can be distributed to all offerors may not be answered by Canada.

4. Applicable Laws

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Offerors may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their offer, 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 offerors.

PART 3 - OFFER PREPARATION INSTRUCTIONS

1. Offer Preparation Instructions

Canada requests that offerors provide their offer in separately bound sections as follows:

Section I: Technical Bid (3 hard copies)
Section II: Financial Bid (1 hard copy)
Section III: Certifications (1 hard copy)

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

Canada requests that offerors follow the format instructions described below in the preparation of their offer.

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to that of the Request for Standing Offers.

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, offerors should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and 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 Offer

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

Section II: Financial Offer

Offerors must submit their financial offer in accordance with the Annex "B" - Basis of Payment detailed below. The total amount of Goods and Services Tax or Harmonized Sales Tax must be shown separately, if applicable.

Section III: Certifications

Offerors must submit the certifications required under Part 5

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

(a) Offers will be assessed in accordance with the entire requirement of the Request for Standing Offers including the technical and financial evaluation criteria.

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

1.1. Technical Evaluation

1.1.1 Mandatory Technical Criteria

Offeror must demonstrate in its offer that it meets each and every mandatory technical criteria in order to be deemed responsive. Failure to provide the supporting documentation requested will result in the offer being deemed non-responsive.

The Offeror must clearly provide supporting document in the offer package with the corresponding technical requirement # listed below.

1.0 The Offeror's proposed Storage System Assembler/Manufacturer

1.1 The Offeror must provide the following information on the Offeror's proposed Storage System Assembler/Manufacturer:

- a) Company name
- b) Company address
- c) Company telephone number; and
- d) Name, address and telephone number of any sub-contractor

1.2 The Offeror must demonstrate their proposed Storage System Assembler/Manufacturer technician is certified by submitting the following in the offer submission:

- 1.2.1 Name of the proposed certified technician
- 1.2.2 A copy of the proposed technicians training certification

1.3 The Offeror must provide proof of 3 successful CRN registrations completed by the proposed Offeror's assembler/manufacturer - describe system registered (material used and size), date of CRN approval and CRN number

1.4 The Offeror must provide the following documentation for the Offeror's proposed Storage System assembler/manufacturer:

- 1.4.1 a) A copy of the current CSA B51 category H fittings certificate
b) Must demonstrate that the proposed storage system assembler/manufacturer has been certified for 3 years or longer from the date of bid closing.
- 1.4.2 a) A copy of the current SWAGELOK Certified Technician certificate
b) Must demonstrate that the proposed storage system assembler/manufacturer has been certified for 3 years or longer from the date of bid closing
- 1.4.3 a) A copy the current of ASME B31.3 certificate
b) Must demonstrate that the proposed storage system assembler/manufacturer has been certified for 3 years or longer from the date of bid closing
- 1.4.4 a) A copy of the current CWB company certification for CSA W47.1
b) Must demonstrate that the proposed storage system assembler/manufacturer has been certified for 3 years or longer from the date of bid closing
- 1.4.5 A copy of the proposed assembler/manufacturer's current CWB letter of Validation
- 1.4.6 a) A copy of the current CWB welder certification for stainless steel
b) Must demonstrate having had been certified for 3 years or longer from the date of bid closing

1.5 The Offeror must submit a Manufacturing work flow plan (flow chart) identifying any subcontractor(s) (by name) associated with each manufacturing process

2.0 The Offeror's proposed Pressure Vessel Assembler/Manufacturer

2.1 The Offeror must provide the following information on the Offeror's proposed Pressure Vessel Assembler/Manufacturer:

- a) Company name
- b) Company address
- c) Company telephone number; and
- d) Name address of any sub-contractor

2.2 The Offeror must demonstrate their proposed pressure vessel assembler/manufacturer technician is certified by submitting the following in the offer submission:

- 2.2.1 Name of the proposed certified technician
- 2.2.2 A copy of the proposed technicians training certification

2.3. The Offeror must meet 2.3.1 and 2.3.2 **OR** 2.3.3 and 2.3.4

2.3.1 The Offeror must provide the following documentation for the Offeror's proposed Pressure Vessel assembler/manufacturer

- a) A copy of the current CSA B51 for Pressure Vessel certificate
- b) Must demonstrate that the proposed Pressure Vessel assembler/manufacturer has been certified for 3 years or longer from the date of bid closing.

2.3.2 The Offeror's pressure vessel manufacturer must have a copy of the current CSA B51 for Pressure Vessel certificate of authorization

OR

- 2.3.3. The Offeror must provide the following documentation for the Offeror's proposed Pressure Vessel assembler/manufacture:
- a) A copy of the current ASME VIII Div 1 certificate
 - b) Must demonstrate that the proposed Pressure Vessel assembler/manufacture has been certified for 3 years or longer from the date of bid closing.

- 2.3.4 The Offeror's pressure vessel manufacturer must have a current ASME VIII Div 1 certificate of authorization - must have current certificate

3.0 The Offeror's proposed Tubing Assembly Assembler/Manufacturer

3.1 The Offeror must provide the following information on the Offeror's proposed Tubing Assembly Assembler/Manufacturer:

- a) Company name
- b) Company address
- c) Company telephone number; and
- d) Name address of any sub-contractor

3.2 The Offeror must demonstrate their proposed Tubing Assembly Assembler/Manufacturer technician is certified by submitting the following in the offer submission:

- 3.2.1 Name of the proposed certified technician
- 3.2.2 A copy of the proposed technicians training certification.

3.3 The Offeror must submit the following documents for the Offeror proposed Tubing Assembly assembler/manufacture:

- 3.3.1
 - a) A copy of the current CSA B51 category H fittings certificate
 - b) Must demonstrate that the proposed Tubing Assembly Assembler/Manufacturer has been certified for 3 years or longer from the date of bid closing
- 3.3.2
 - a) A copy of the current SWAGELOK Certified Technician certificate
 - b) Must demonstrate that the proposed Tubing Assembly Assembler/Manufacturer has been certified for 3 years or longer from the date of bid closing.
- 3.3.3
 - a) A copy of the current ASME B31.3 certificate
 - b) Must demonstrate that the proposed Tubing Assembly Assembler/Manufacturer has been certified for 3 years or longer from the date of bid closing.

4 The Offeror proposed Cage Fabrication Assembler/Manufacturer

4.1 The Offeror must provide the following information on the Offeror's proposed Cage Fabrication Assembler/Manufacturer :

- a) Company name
- b) Company address
- c) Company telephone number; and
- d) Name and address of any sub-contractor

4.2 The Offeror must demonstrate their proposed Cage Fabrication Assembler/Manufacturer technician is certified by submitting the following in the offer submission:

- 4.2.1 Name of the proposed certified technician
- 4.2.2 A copy of the proposed technicians training certification.

4.3 The Offeror must submit the following documents for the Offeror's proposed Cage Fabrication Assembler/Manufacturer:

- 4.3.1
 - a) A copy of the current CWB company certification for CSA W47.1
 - b) Must demonstrate that the proposed Cage Fabrication Assembler/Manufacturer been certified for 3 years or longer from the date of bid closing
- 4.3.2 A copy of the Offeror's proposed Assembler/Manufacturer CWB Letter of Validation.
- 4.3.3 The Offeror's assembler/manufacturer must have and provide:
 - a) A copy of the current CWB certificate demonstrating Stainless Steel certification
 - b) Must demonstrate that the proposed Cage Fabrication assembler/manufacturer has been certified for 3 years or longer from the date of bid closing.

1.2 Financial Evaluation

1.2.1 Mandatory Financial Criteria

The Offeror must complete and submit with its bid, Annex "B" - Basis of Payment, in Canadian Funds. Pricing must be provided for all firm and optional requirements.

1.2.2 The price used in the evaluation will be the Total Evaluated Cost, in Annex "E".

1.3 SACC Manual Clause

M0220T (2007-05-25), Evaluation of Price

2. Basis of Selection

2.1 An offer must comply with the requirements of the Request for Standing Offers and meet all mandatory technical evaluation criteria to be declared responsive. The responsive offer with the lowest evaluated price will be recommended for issuance of a standing offer.

PART 5 - CERTIFICATIONS

Offerors must provide the required certifications and related documentation to be issued a standing offer. Canada will declare an offer non-responsive if the required certifications and related documentation are not completed and submitted as requested.

Compliance with the certifications offerors provide to Canada is subject to verification by Canada during the offer evaluation period (before issuance of a standing offer) and after issuance of a standing offer. The Standing Offer Authority will have the right to ask for additional information to verify offerors' compliance with the certifications before issuance of a standing offer. The offer will be declared non-responsive if any certification made by the Offeror is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications, to provide the related documentation or to comply with the request of the Standing Offer Authority for additional information will also render the offer non-responsive.

1. Mandatory Certifications Required Precedent to Issuance of a Standing Offer

1.1 Code of Conduct and Certifications - Related documentation

1.1.1 By submitting an offer, the Offeror certifies, for himself and his affiliates, to be in compliance with the Code of Conduct and Certifications clause of the Standard instructions. The related documentation hereinafter mentioned will help Canada in confirming that the certifications are true. By submitting an offer, the Offeror certifies that it is aware, and that its affiliates are aware, that Canada may request additional information, certifications, consent forms and other evidentiary elements proving identity or eligibility. Canada may also verify the information provided by the Offeror, including the information relating to the acts or convictions specified herein, through independent research, use of any government resources or by contacting third parties. Canada will declare non-responsive any offer in respect of which the information requested is missing or inaccurate, or in respect of which the information contained in the certifications is found to be untrue, in any respect, by Canada. The Offeror and any of the Offeror's affiliates, will also be required to remain free and clear of any acts or convictions specified herein during the entire period of the Standing Offer and any call-ups made against the Standing Offer.

Offerors who are incorporated, including those submitting offers as a joint venture, must provide with their offer or promptly thereafter a complete list of names of all individuals who are currently directors of the Offeror. Offerors submitting offers as sole proprietorship, including those submitting offers as a joint venture, must provide the name of the owner with their offer or promptly thereafter. Offerors submitting offers as societies, firms, partnerships or associations of persons do not need to provide lists of names. If the required names have not been received by the time the evaluation of offers is completed, Canada will inform the Offeror of a time frame within which to provide the information. Failure to comply will render the offer non-responsive. Providing the required names is a mandatory requirement for issuance of a standing offer and award of a contract.

Canada may, at any time, request that an Offeror provide properly completed and Signed Consent Forms (Consent to a Criminal Record Verification form- PWGSC-TPSGC 229) (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>) for any or all individuals aforementioned within the time specified. Failure to provide such Consent Forms within the time period provided will result in the offer being declared non-responsive.

2. Additional Certifications Precedent to Issuance of a Standing Offer

The certifications listed below should be completed and submitted with the offer, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Standing Offer Authority will so inform the Offeror and provide the Offeror with a time frame within which to meet the requirement. Failure to comply with the request of the Standing Offer Authority and meet the requirement within that time period will render the offer 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 the issuance of a standing offer. If the Offeror, or, if the Offeror 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 issuance of a standing offer.

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 offers from ineligible contractors, including an offer from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

2. If the Offeror 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 Offeror 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 Offeror, or, if the Offeror is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Offeror 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 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.

2.2 Status and Availability of Resources

The Offeror certifies that, should it be issued a standing offer as a result of the Request for Standing Offer, every individual proposed in its offer will be available to perform the Work resulting from a call-up against the Standing Offer as required by Canada's representatives and at the time specified in a call-up or agreed to with Canada's representatives. If for reasons beyond its control, the Offeror is unable to provide the services of an individual named in its offer, the Offeror may propose a substitute with similar qualifications and experience. The Offeror must advise the Standing Offer Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Offeror: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Offeror has proposed any individual who is not an employee of the Offeror, the Offeror certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Offeror must, upon request from the Standing Offer Authority, provide a written confirmation, signed by the individual, of the permission given to the Offeror and of his/her availability.

2.3 Education and Experience

The Offeror certifies that all the information provided in the résumés and supporting material submitted with its offer, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Offeror to be true and accurate. Furthermore, the Offeror warrants that every individual offered by the Offeror for the requirement is capable of performing the Work resulting from a call-up against the Standing Offer.

PART 6 - INSURANCE REQUIREMENTS

1. Insurance Requirements

The Offeror must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Offeror, if issued a standing offer as a result of the request for standing offer, can be insured in accordance with the Insurance Requirements specified in Annex "D".

If the information is not provided in the offer, the Standing Offer Authority will so inform the Offeror and provide the Offeror with a time frame within which to meet the requirement. Failure to comply with the request of the Standing Offer Authority and meet the requirement within that time period will render the offer non-responsive.

PART 7 - STANDING OFFER AND RESULTING CONTRACT CLAUSES

A. STANDING OFFER

1. Offer

1.1 The Offeror offers to fulfill the requirement in accordance with the Requirement at Annex "A".

2. Standard Clauses and Conditions

All clauses and conditions identified in the Standing Offer and resulting contract(s) 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.

2.1 General Conditions

2005 (2012-11-19) General Conditions - Standing Offers - Goods or Services, apply to and form part of the Standing Offer.

2.2 Standing Offers Reporting

The Offeror must compile and maintain records on its provision of goods, services or both to the federal government under contracts resulting from the Standing Offer. This data must include all purchases, including those paid for by a Government of Canada Acquisition Card.

The Offeror must provide this data in accordance with the reporting requirements detailed in Annex "C". If some data is not available, the reason must be indicated. If no goods or services are provided during a given period, the Offeror must still provide a "nil" report.

The data must be submitted on a quarterly basis to the Standing Offer Authority.

The quarterly reporting periods are defined as follows:

1st quarter: April 1 to June 30;

2nd quarter: July 1 to September 30;

3rd quarter: October 1 to December 31;

4th quarter: January 1 to March 31.

The data must be submitted to the Standing Offer Authority no later than 15 calendar days after the end of the reporting period.

3. Term of Standing Offer

3.1 Period of the Standing Offer

The period for making call-ups against the Standing Offer is from the Date of the Standing Offer Award to March 31, 2015.

3.2 Extension of Standing Offer

If the Standing Offer is authorized for use beyond the initial period, the Offeror offers to extend its offer by up to two (2) additional one (1) year periods, under the same conditions and at the rates or prices specified in the Standing Offer, or at the rates or prices calculated in accordance with the formula specified in the Standing Offer.

The Offeror will be advised of the decision to authorize the use of the Standing Offer for an extended period by the Standing Offer Authority at any time before the expiry date of the Standing Offer. A revision to the Standing Offer will be issued by the Standing Offer Authority.

4. Authorities

4.1 Standing Offer Authority

The Standing Offer Authority is:

Name: Aaron Abela
Title: Supply Officer
Public Works and Government Services Canada
Acquisitions Branch
Directorate: Ontario Region
Address: 33 City Centre Drive Suite 480C
Mississauga, Ontario L5B 2N5
Telephone: (905) 615-2061
Facsimile: (905) 615-2060
E-mail address: aaron.abela@pwgsc.gc.ca

The Standing Offer Authority is responsible for the establishment of the Standing Offer, its administration and its revision, if applicable. Upon the making of a call-up, as Contracting Authority, he is responsible for any contractual issues relating to individual call-ups made against the Standing Offer by any Identified User.

Solicitation No. - N° de l'invitation

K3D33-121331/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

tor015

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

K3D33-121331

File No. - N° du dossier

TOR-2-35308

CCC No./N° CCC - FMS No/ N° VME

4.2 Project Authority

The Project Authority for the Standing Offer is:
(TBA at time of Standing Offer issuance)

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone: ____ - ____ - _____

Facsimile: ____ - ____ - _____

E-mail address: _____

The Project Authority is the representative of the department or agency for whom the Work will be carried out pursuant to a call-up under the Standing Offer and is responsible for all the technical content of the Work under the resulting Contract.

4.3 Offeror's Representative

(TBA at time of Standing Offer issuance)

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone: ____ - ____ - _____

Facsimile: ____ - ____ - _____

E-mail address: _____

5. Identified Users

The Identified User authorized to make call-ups against the Standing Offer is: Environment Canada.

6. Call-up Instrument

The Work will be authorized or confirmed by the Identified User(s) using form Call-up Against a Standing Offer or an electronic version.

7. Limitation of Call-ups

Individual call-ups against the Standing Offer must not exceed \$180,000.00 (Goods and Services Tax or Harmonized Sales Tax included).

8. Financial Limitation

The total cost to Canada resulting from call ups against the Standing Offer must not exceed the sum of \$_____ (Goods and Services Tax or Harmonized Sales Tax excluded) unless otherwise authorized in writing by the Standing Offer Authority. The Offeror must not perform any work or services or supply any articles in response to call ups which would cause the total cost to Canada to exceed the said sum, unless an increase is so authorized.

The Offeror must notify the Standing Offer Authority as to the adequacy of this sum when 75 percent of this amount has been committed, or 4 months before the expiry date of the Standing Offer, whichever

comes first. However, if at any time, the Offeror considers that the said sum may be exceeded, the Offeror must promptly notify the Standing Offer Authority.

9. 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 call up against the Standing Offer, including any annexes;
- b) the articles of the Standing Offer;
- c) the general conditions 2005 (2012-11-19), General Conditions - Standing Offers - Goods or Services
- d) the general conditions 2010A (2012-11-19); General Conditions - Goods (Medium Complexity)
- e) Annex A, Requirement;
- f) Annex B, Basis of Payment;
- g) Annex C, Periodic usage Report - Standing Offer
- h) Annex D, Insurance Requirements;
- i) the Offeror's offer dated _____

10. Certifications

10.1 Compliance

Compliance with the certifications and related documentation provided by the Offeror is a condition of authorization of the Standing Offer and subject to verification by Canada during the term of the Standing Offer and of any resulting contract that would continue beyond the period of the Standing Offer. In the event that the Offeror does not comply with any certification, provide the related documentation or if it is determined that any certification made by the Offeror in its offer is untrue, whether made knowingly or unknowingly, Canada has the right to terminate any resulting contract for default and set aside the Standing Offer.

10.2 SACC Manual Clause

M3020C (2010-01-11) Status and Availability of Resources

11. Applicable Laws

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____.

B. RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from a call-up against the Standing Offer.

1. Requirement

The Contractor must provide the items detailed in the call-up against the Standing Offer.

2. Standard Clauses and Conditions

2010A (2012-11-19), General Conditions - Goods (Medium Complexity) apply to and form part of the Contract.

3. Term of Contract

3.1 Delivery Date

Delivery must be made within 8-10 weeks from receipt of a call-up against the Standing Offer.

4. Payment

4.1 Basis of Payment - Firm Lot Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price, as specified in Annex "B" for the cost as stipulated in the call-up document. 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.

4.2 Limitation of Price

C6000C (2011-05-16) Limitation of Price

4.3 Multiple Payments

H1001C (2008-05-12) Multiple Payments

5. 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.

6. Insurance Requirements

The Contractor must comply with the insurance requirements specified in Annex "D". The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

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The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

ANNEX "A"

REQUIREMENT

The following statement of work describes manufacturing and certification requirements for hydrogen storage tanks with integrated control panel.

1. Scope/Objective

The Meteorological Service of Canada (MSC) is seeking to have Hydrogen gas storage systems manufactured for use in Upper Air climate observation stations. The storage system includes a pressure vessel, surrounding cage and tank control panel. The design of the panel and tank is completed and approved; the drawing and calculation package is attached. All materials are specified as Stainless Steel. The product must meet the CSA B51, ASME, and CWB requirements for pressure vessel construction and meet the requirements to achieve a national level Canadian Registration Number certification and compliance.

The Standing Offer holder must obtain a national Canadian Registration Number for the product.

1.1 Acronym Summary

MSC - Meteorological Service of Canada
 CSA - Canadian Standards Association
 CSA B51 - Pressure Vessel Code
 ASME - American Society of Mechanical Engineers
 CWB - Canadian Welding Bureau
 CRN - Canadian Registration Number
 BOM - Bill of Materials
 P & ID - Piping and Instrumentation Diagram

2. Background

The design and engineering calculations have been certified by a Professional Engineer. The design and engineering calculations will be provided to allow the standing offer holder to achieve CRN registration in all Canadian provinces and territories.

3. Technical Requirements

The final product must have documentation demonstrating compliance with all codes and regulations relating to manufacturing of pressure vessels and hydrogen gas systems. All documentation listed with deliverables for each system must be submitted to the Environment Canada Project Authority.

Refer to the attached drawing package for details.

3.1 STORAGE SYSTEM:

- 3.1.1 Must be assembled according to drawing UA-TANK-0000 and UA-TANK-0010
- 3.1.2 Obtain Canadian Registration Number for all Canadian provinces and territories
- 3.1.3 The assembler must have a certificate of authorization for Category H fittings in accordance with CSA B51
- 3.1.4 Tubing assembly must be performed by a certified SWAGELOK technician in accordance with SWAGELOK MS-13-151
- 3.1.5 PTFE tape must be used for all NPT connections.
- 3.1.6 Pressure test in accordance with ASME B31.3 to 250PSI using Helium and submit report including the following:
 - 3.1.6.1 Assembly technician name - must have valid ASME B31.3 certificate

- 3.1.6.2 Inspector name and number - must have valid ASME B31.3 certificate
- 3.1.6.3 test pressure used
- 3.1.6.4 test gas used
- 3.1.7 All leaks during the pressure test must be corrected and retested
- 3.1.8 Assembly of tank to cage must be performed by a CWB certified company and welder for CSA W47.1
 - 3.1.8.1 Current CWB letter of validation must be available upon request
 - 3.1.8.2 CWB stamped stainless steel welding procedures must be available upon request
 - 3.1.8.3 Individual welder CWB certification for stainless steel must be available upon request (multi-position or flat table are acceptable depending on 3.1.8.2)
- 3.1.9 All certificates must be maintained as valid for the duration of the standing offer

3.2 PRESSURE VESSEL:

- 3.2.1 Must be manufactured according to drawing UA-TANK-0011
 - 3.2.2 The tank must be manufactured in compliance with CSA B51. The tank manufacturer must meet either 3.2.2.1 and 3.2.2.2 OR 3.2.2.3 and 3.2.2.4
 - 3.2.2.1 Manufacturer must have a current and valid CSA B51 for Pressure vessel certificate and have had certification for 3years or more.
 - 3.2.2.2 Manufacturer must have a current and valid CSA B51 for Pressure Vessel Certificate of Authorization
- OR**
- 3.2.2.3 Manufacturer must have a current and valid ASME VIII Div 1 certificate and have had certification for 3years or more prior to the date of bid closing
 - 3.2.2.4 Manufacturer must have a current and valid ASME VIII Div 1 Certificate of Authorization
- 3.2.3 Tank serial numbers must start as: UA-H2-TANK-0001 and increment sequentially
 - 3.2.4 CRN must be placed on the name plate for vessel
 - 3.2.5 A completed copy of the CSA B51 Manufacturer's test report must be submitted with each pressure vessel to Environment Canada's Project Authority.
 - 3.2.6 All certificates mentioned under 3.2 must be maintained as valid for the duration of the standing offer

3.3 TANK PANEL:

- 3.3.1 All components must be the same part number as listed in the BOM of the drawing
- 3.3.2 The assembler must have a valid certificate of authorization for Category H fittings in accordance with CSA B51 and have had certification for 3 years or more
- 3.3.3 Tubing assembly must be performed by a certified SWAGELOK technician in accordance with SWAGELOK MS-13-151 and have had certification for 3years or more
- 3.3.4 PTFE tape must be used for all NPT connections.
- 3.3.5 The panel must be pressure tested in accordance with ASME B31.3 to 300PSI using Helium prior to assembly to the pressure vessel
 - 3.3.5.1 The regulator must be in a full open condition
 - 3.3.5.2 Use SWAGELOK "SNOOP" for leak detection
- 3.3.6 A leak test report must be to be submitted to Environment Canada Project Authority with each assembly, including:
 - 3.3.6.1 Assembly technician name - must have ASME B31.3 certificate
 - 3.3.6.2 Inspector name and number - must have ASME B31.3 certificate
 - 3.3.6.3 test pressure used
 - 3.3.6.4 test gas used
- 3.3.7 All leaks during the pressure test must be corrected and retested

- 3.3.8 All panel check valves must be orientated in accordance with Piping and Instrumentation Diagram (P&ID) - (refer to STORAGE_TANK_P&ID.pdf)
- 3.3.9 The Standing Offer Holder must attach a "LOGO" plate (dwg UA-TANK-0198) to the panel using stainless steel rivets prior to use.
- 3.3.10 A sample "LOGO" plate must be sent for approval to Environment Canada Project Authority.
- 3.3.11 All fasteners must be stainless steel and all threaded joints must have a stainless steel anti seize joint compound applied.
- 3.3.12 All certificates mentioned under 3.3 must be maintained as valid for the duration of the standing offer

3.4 TANK CAGE:

- 3.4.1 Cage must conform to drawing UA-TANK-0050 with additional details in component drawings
- 3.4.2 Cage must be manufactured by a CWB certified company and welder for CSA W47.1
 - 3.4.2.1 Current CWB letter of validation must be available upon request
 - 3.4.2.2 CWB stamped stainless steel welding procedures must be available upon request
 - 3.4.2.3 Individual welder CWB certification for stainless steel must be available upon request (multi-position or flat table are acceptable depending on 3.4.2.2)
- 3.4.3 Apply 'Loctite Nickel Anti-seize' compound to all bolted joints
- 3.4.4 All certificates mentioned under 3.4 must be maintained as valid for the duration of the standing offer

4. Out -of-scope

Development of non-standard manufacturing processes and methods. Any use of materials other than those listed in the drawings without written acceptance from Environment Canada's Project Authority.

5. Deliverables:

1. Completed Hydrogen Storage Tank systems (including pressure vessel, cage, and panel) conforming to drawing (UA-TANK-0000) must be delivered to Environment Canada, 4905 Dufferin St, Toronto, ON, Canada M3H 5T4
2. Dunnage and packaging concepts must be submitted for approval to Environment Canada Project Authority prior to shipping, similar to fig 1 is preferred. (shown with crate disassembled).



3. Each Tank System must be accompanied with the following documentation with reference to each serial #
 - a. Pressure Vessel Manufacturer's data report in accordance with CSA B51 Pressure Vessels or ASME VIII div 1
 - b. Panel leak check report (items 3.1.6 & 3.3.6)
 - c. CRN approval for all Canadian provinces and territories
4. CRN submittal must start immediately after standing offer issuance and completed with national registration within six (6) months
 - a. Provincial and territorial registration fees must be covered at cost by the Standing Offer holder, in addition to any registration administrative fees
5. Environment Canada reserves the right to visit all manufacturing or assembly facilities to review and discuss quality control practices and procedures to ensure that the final product is satisfactory to the operational needs.
6. The Standing Offer holder must provide a work flow plan (flow chart) identifying any subcontractor(s) (by name) associated with each manufacturing process 5 days after standing offer issuance for each of the components (Storage System, Pressure Vessel, Tubing Assembly and Cage Fabrication).

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APPENDIX "A-1"

STORAGE TANK ASSEMBLY

1. See attached document.

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APPENDIX "A-2"

STORAGE TANK ASSEMBLY P&ID

1. See attached document.

ANNEX "B"**BASIS OF PAYMENT**

The firm unit price must be an all inclusive price, in accordance with Annex "A" - Requirement, in Canadian funds including Canadian customs duties, excise taxes, F.O.B. destination, including all delivery charges specified. The total amount of Goods and Services Tax (GST) or Harmonized Sales Tax (HST) is not included.

While delivery must be made within 8-10 weeks after the call-up, the best delivery that could be offered is ___ weeks after the call-up.

Canada may purchase up to a maximum of 10 tanks per year, while not exceeding 20 tanks over the period of the standing offer, if required, at any time during the Standing Offer Period.

Standing Offer Holder is solely responsible for all the CRN registration costs including administrative fees and any other additional cost related to obtaining the CRN registration.

1.0 FIRM REQUIREMENT

Item	Description	Maximum Quantity	Firm Unit Price	Extended Price
1	Initial Standing Offer Period Date of Award to March 31, 2014 Hydrogen Gas Storage System	Up to 4 units	\$	\$
2	Initial Standing Offer Period April 1, 2014 to March 31, 2015 Hydrogen Gas Storage System	Up to 4 units	\$	\$

2.0. OPTIONAL GOODS

While deliverables for the optional goods, if required, must occur within 8-10 weeks from the date of notice to exercise any portion of the option, the best delivery that could be offered is: _____ weeks after the call-up.

Item	Description	Maximum Quantity	Firm Unit Price	Extended Price
1	Initial Standing Offer Period Date of Award to March 31, 2014 Hydrogen Gas Storage System	Up to 6 units	\$	\$
2	Initial Standing Offer Period April 1, 2014 to March 31, 2015 Hydrogen Gas Storage System	Up to 6 units	\$	\$
3	Option Period 1 April 1, 2015 to March 31, 2016 Hydrogen Gas Storage System	Up to 10 units	\$	\$
4	Optional Period 2 April 1, 2016 to March 31, 2017 Hydrogen Gas Storage System	Up to 10 units	\$	\$

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ANNEX "C"

PERIODIC USAGE REPORT - STANDING OFFER

Standing Offer Number:			Start Date of SO (DD/MM/YYYY)		End Date of SO (DD/MM/YYYY)	
Total Call-Up Value to Date (\$)			Start Reporting Period (DD/MM/YYYY)		End Reporting Period (DD/MM/YYYY)	
Invoice Number	Date of Order	Date of Delivery	Call-up Number	Item Description (Name, Part #)	Item Quantity (In Lot)	Total Value of Call-Up
						\$
						\$
						\$
						\$
						\$
						\$
						\$
Reporting Period Total						\$

Reports must be submitted as per Part A, 2.2 Standing Offers Reporting.

ANNEX "D"**INSURANCE REQUIREMENTS****1. Commercial General Liability Insurance**

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence and in the annual aggregate.

2. The Commercial General Liability policy must include the following:

- a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
- b) Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
- c) Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
- d) Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
- e) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
- f) Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
- g) Employees and, if applicable, Volunteers must be included as Additional Insured.
- h) Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)
- i) Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
- j) Notice of Cancellation: The Insurer will endeavor to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
- k) If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
- l) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
- m) Non-Owned Automobile Liability - Coverage for suits against the Contractor resulting from the use of hired or non-owned vehicles.

n) Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8

For other provinces and territories, send to:

Senior General Counsel,
Civil Litigation Section,
Department of Justice
234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

Automobile Liability Insurance

1. The Contractor must obtain Automobile Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence.
2. The policy must include the following:
 - a. Third Party Liability - \$2,000,000 Minimum Limit per Accident or Occurrence
 - b. Accident Benefits - all jurisdictional statutes
 - c. Uninsured Motorist Protection
 - d. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.

ANNEX "E"

FINANCIAL EVALUTION

The Total Evaluated Cost will be the sum of the Extended Prices Calculated by multiplying the Offeror's proposed firm unit price with the estimated quantities.

The prices detailed in Annex B will be input into Annex E for Price Evaluation Purposes.

The evaluated price will be the sum of the Offeror's proposed Extended Price for the firm Standing Offer Period and Option Years for items 1, 2, 3, 4, 5 and 6

1.0 FIRM REQUIREMENT

Item	Description	Estimated Quantity	Firm Unit Price	Extended Price
1	Initial Standing Offer Period Date of Award to March 31, 2014. Hydrogen Gas Storage System	Up to 4 units	\$	\$
2	Initial Standing Offer Period of April 1, 2014 to March 31, 2015. Hydrogen Gas Storage System	Up to 4 units	\$	\$
Total Firm Requirement Evaluated Cost			\$	

2.0. OPTIONAL GOODS

Item	Description	Estimated Quantity	Firm Unit Price	Extended Price
3	Initial Standing Offer Period. Date of Award to March 31, 2014. Hydrogen Gas Storage System	Up to 6 units	\$	\$
4	Initial Standing Offer Period April 1, 2014 to March 31, 2015 Hydrogen Gas Storage System	Up to 6 units	\$	\$
5	Option Period 1 April 1, 2015 to March 31, 2016 Hydrogen Gas Storage System	Up to 10 units	\$	\$
6	Option Period 2 April 1, 2016 to March 31, 2017 Hydrogen Gas Storage System	Up to 10 units	\$	\$

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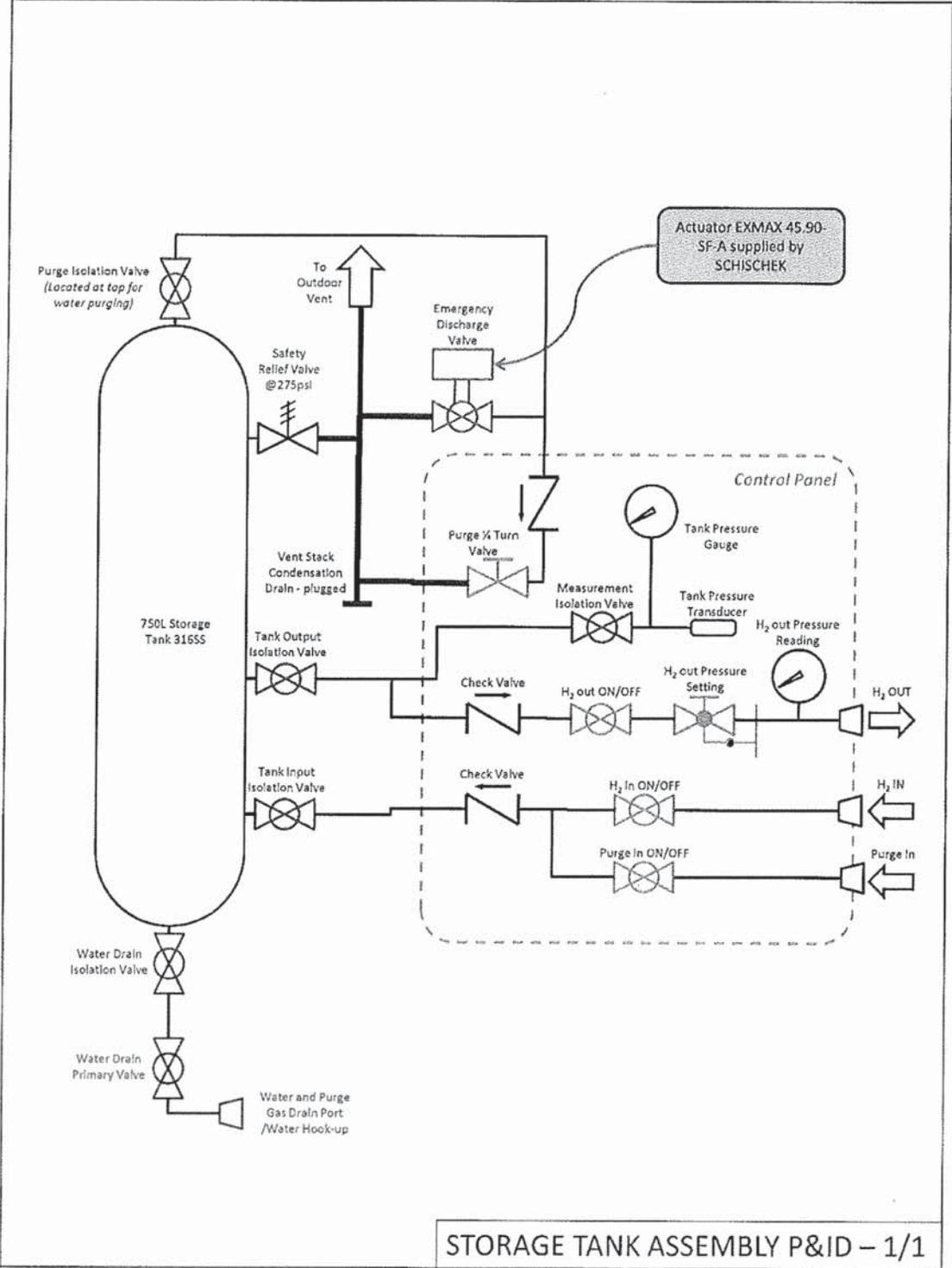
tor015

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Total Optional Requirement Evaluated Cost	\$
Total Firm Requirement Evaluated Cost + Total Optional Requirement Evaluated Cost	
= TOTAL EVALUATED COST: \$ _____	

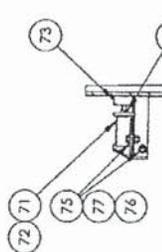
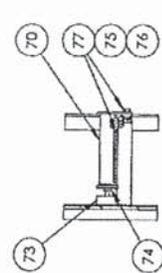
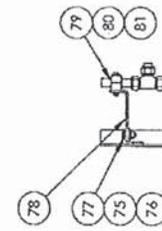
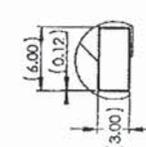
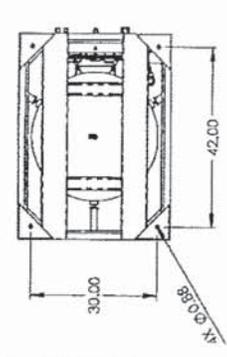
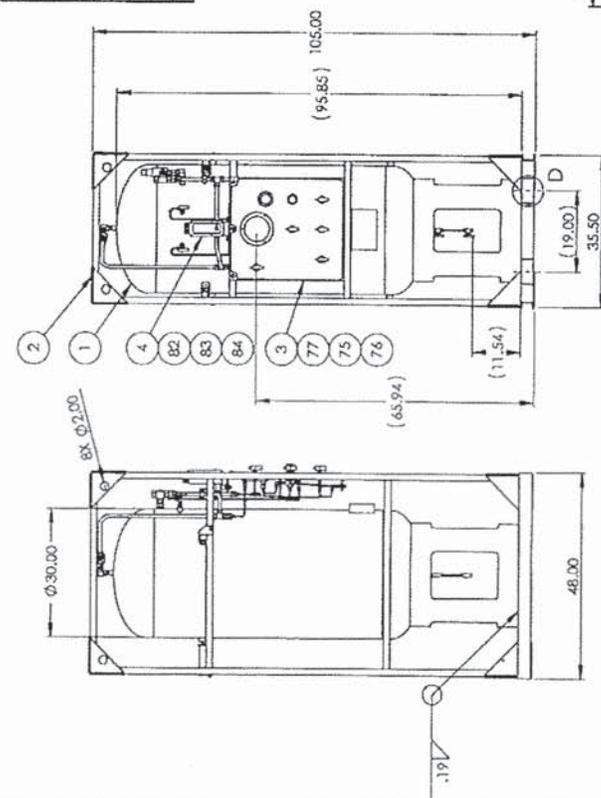
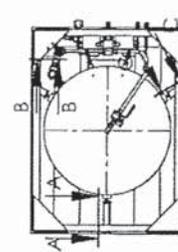


STORAGE TANK ASSEMBLY P&ID – 1/1



 OCT 27/2022

Item	QTY	PartNo	MATERIAL	CRN	DESCRIPTION	Notes
1	1	5828-0-D-Vessel	Stainless Steel		Vessel	See dwg UA-TANK-0010-00
2	1	5828-0-0-Frame	SS 304	N/A	Frame	See dwg UA-TANK-0050-00
3	1		See BOM	N/A	Panel	See dwg UA-TANK-0100-00
4	1	EMMix-45-90-SF-A-CSA		NA	Emergency Dump valve actuator - Schenck	CSA Cert. 2208465 - exp. 2044510 Made with UA-TANK-0200 and UA-TANK-0201 using Swagelok SS-M9-6B-06-17ISO-M
70	1				Pad Mount, Rear	
71	1				Pad Mount, Left	
72	1				Pad Mount, Right	
73	3	316-242 (Stainless)	Vulcanized Nitrile Rubber		Foot Pad	
74	3		SS 316		Nut, Hex, Jam - 375-16 UNC	
75	22		SS 316		Washer, Narrow - 375	
76	11		SS 316		Nut, Hex - 375-16 UNC	
77	11		SS 316		Block, Hex - 375-16 UNC x 1.00	
78	1		SS 304		Mag. Hous. - 1.8 x 2.50 x 0.00	
79	1	304-SS-PA-227	Polyamide		Clamp Support, Swagelok - 75 Tube	
80	2		SS 316		Washer, Narrow - 250	
81	2		SS 316		Nut, Hex - 25-20 UNF	
82	4		SS 316		Block, Hex - 50x13 UNC x 1.25	
83	4		SS 316		Nut, Hex - 50x13 UNC	
84	8		SS 316		Washer, Narrow - 50	



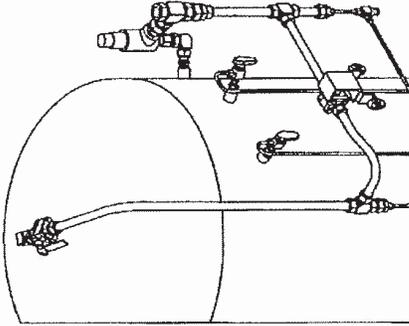
- NOTES:
1. ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.
 2. USE PTFE TAPE ON ALL NPT FITTINGS.
 3. USE LOCTITE NICKEL ANTI-SEIZE FOR ALL BOLTED JOINTS.
 4. ALL OPENINGS MUST BE CAPPED OR PLUGGED FOR STORAGE AND TRANSPORTATION.


 Environment Canada
 Environment Canada
 Meteorological Service of Canada
 Service Météorologique du Canada
 TITLE: HYDROGEN STORAGE TANK ASSEMBLY
 DRAWING NUMBER: UA-TANK-0000-00
 REVISION: (blank)
 DATE: (blank)

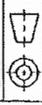
Item	QTY	Part No	MATERIAL	CRN	DESCRIPTION	Notes
1	1	508-O.G.Vessel	Stainless Steel	06787-2X0123678	Vessel	See drawing UA-TANK-0010-00
15	1	91800CEP18ME0275 1/2" x 3/4"	Brass	BTYN	Relief Valve - Kumble 275 psi	
36	1	Swagelok SS-LRST12-JL	SS 316	0A12577-5C	Valve - 750 Tube, 1/4 Turn	
37	2	Swagelok SS-1210-9	SS 316	0A12577-5C	Elbow, 90 - 75 Tube	
38	2	Swagelok SS-1214-PC	SS 316	0A12577-5C	Part Connector - 750 Tube	
39	2	Swagelok SS-121A-1-8	SS 316	0A12577-5C	Taper Adapter, Male - 750 OD, 1/2 NPT	
41	1	Swagelok SS-1810-1-12	SS 316	0A12577-5C	Str Male Conn - 1.00 Tube to 3/4 NPT	
42	1	Swagelok SS-0703	SS 316	0A12577-5C	Tri Union - 1.00 Tube	
43	1	Swagelok SS-1810-8-12	SS 316	0A12577-5C	Union - 1.00 Tube, 75 Tube	
44	2	Swagelok SS-1210-3	SS 316	0A12577-5C	The Union - 75 Tube	
45	2	Swagelok SS-1210-6-4	SS 316	0A12577-5C	Union - 75 Tube, 25 Tube	
46	1	Swagelok SS-1003-4TFT	SS 316	0A12577-5C	Tri. Run, Female - 25 Tube, 1/4 NPT	
47	2	Swagelok SS-40GSA-AH-SHD	SS 316	0A12577-5C	Valve - 250 Tube, 1/4 Turn	
48	2	Swagelok SS-47A-1-8	SS 316	0A12577-5C	Tube Adapter - 25 Tube 1/2 NPT	
49	2	Swagelok SS-062S-JH-SHD	SS 316	0A12577-5C	Valve 3 Way - 25 Tube	
50	1	TP116 SA-11	TP116 SMLS	NA	Tube - 750 OD 18 Ga. (049) x 37.59	See Detail on UA-TANK-0012-00
51	1	TP116 SA-11	TP116 SMLS	NA	Tube - 750 OD 18 Ga. (049) x 11.36	See Detail on UA-TANK-0012-00
52	1	TP116 SA-11	TP116 SMLS	NA	Tube - 750 OD 18 Ga. (049) x 9.44	
53	1	TP116 SA-11	TP116 SMLS	NA	Tube - 750 OD 18 Ga. (049) x 9.69	
54	1	TP116 SA-11	TP116 SMLS	NA	Tube - 750 OD 18 Ga. (049) x 4.00	
55	1	TP116 SA-11	TP116 SMLS	NA	Tube - 250 OD 20 Ga. (035) x 38.09	See Detail on UA-TANK-0012-00
57	1	TP116 SA-11	TP116 SMLS	NA	Tube - 250 OD 20 Ga. (035) x 8.29	See Detail on UA-TANK-0012-00
58	1	TP116 SA-11	TP116 SMLS	NA	Tube - 250 OD 20 Ga. (035) x 3.44	See Detail on UA-TANK-0012-00
59	1	TP116 SA-11	TP116 SMLS	NA	Tube - 250 OD 20 Ga. (035) x 3.72	See Detail on UA-TANK-0012-00
60	1	TP116 SA-11	TP116 SMLS	NA	Tube - 250 OD 20 Ga. (035) x 23.55	See Detail on UA-TANK-0012-00
61	1	TP116 SA-11	TP116 SMLS	NA	Plug - 1/4 NPT	
62	1	SA-121310184	SS 316	0A12577-5C	Connector, Port - 1.00 Tube	
63	2	Swagelok SS-121A-7-8	SS 316	0A12577-5C	Tube Adapter, Port - 75 Tube, 3/4 NPT	
64	1	Swagelok SS-121A-7-8	SS 316	0A12577-5C	Tube Adapter, Port - 75 Tube, 3/4 NPT	

NOTES:

1. ALL COMPONENTS ARE SWAGELOK SUPPLY UNLESS OTHERWISE NOTED.
2. ASSEMBLY BY SWAGELOK TRAINED TECHNICIAN ONLY.
3. USE PTFE TAPE ON ALL NPT FITTINGS.
4. USE LOC-TITE ANTI-SEIZE ON ALL BOLTED JOINTS.
5. USE ONLY SEAMLESS TUBING.



VIEW E



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TITLE:

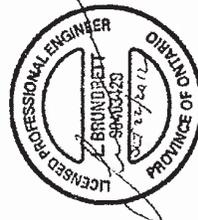
HYDROGEN STORAGE TANK

DRAWING NUMBER:

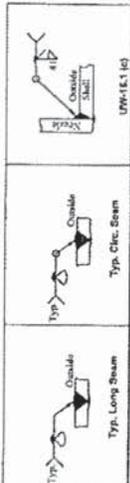
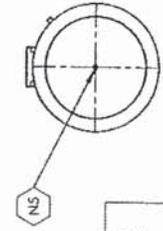
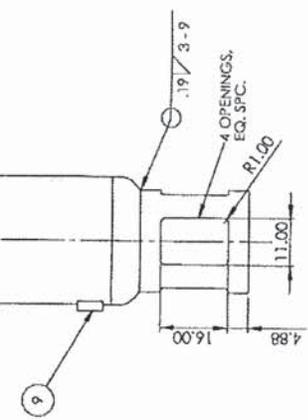
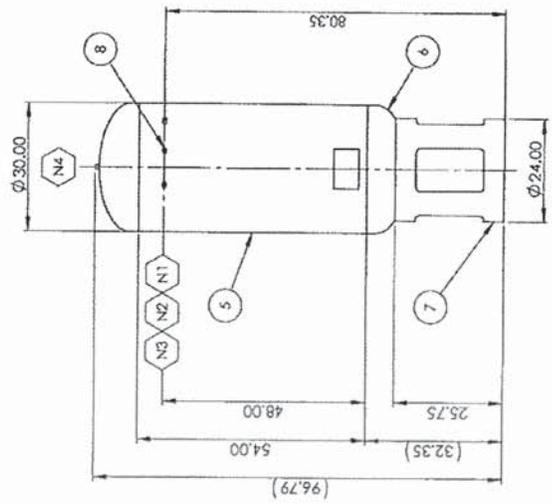
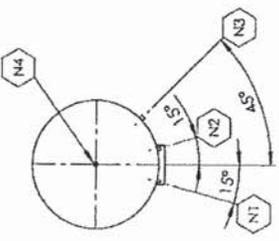
UA-TANK-0010-00

REVISION:

DATE:



ITEM QTY	DESCRIPTION	MATERIAL
3 1	Shell - 30.00 OD, 31 THK, 54.00 Long	SA-240 316
6 2	Skirt - 24.00 OD, 13 THK, 25.75 Long	SA-240 316
7 1	Skirt - 24.00 OD, 13 THK, 25.75 Long	SA-240 316
8 5	Thousand Mill Couplings, Class 3000, 0.50 NPS	SA-240 316
9 1	Flange, Hexagonal	SS



NOTES:

- All dimensions in inches.
- Material to be used in accordance with the material specification and all other details.
- Welds to be checked for scale, oil, weld spatter and all other foreign material, prior to hydrostatic test.
- Maximum stress in any part of the vessel shall not exceed the design stress.
- Maximum stress in any part of the vessel shall not exceed the design stress.
- All drawings conform to 916.11 Standards.
- All drawings conform to 916.11 Standards.
- MTIs required for all materials and fittings.
- All unspecified welds to be 25% fillet.
- Welding in accordance with ASME Section IX.
- External surfaces of the tank and skirt to have a uniform glass bead finish.



DESIGN DATA

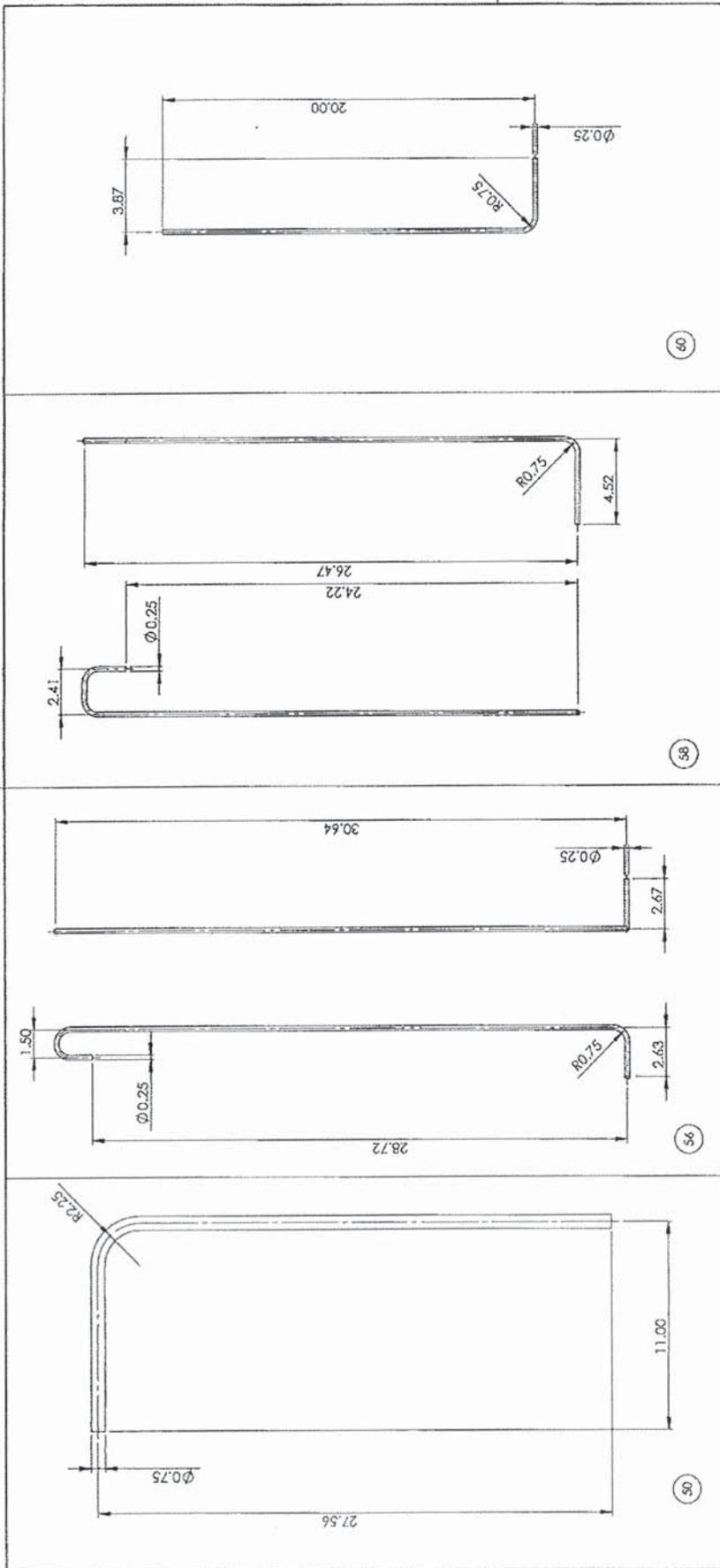
Code	
Design Code	ASME VIII-1 2018 ed. 2B11 add.
Service Code	UHC-1197
Wind Code	N/A
Design Conditions	
MAWP - Ht / Ex	300 / 6 psid @ 122 °F
MDMT	45 °F @ 340 psid
Corrosion Allowance	0 in. for non-corrosive service
Examinatee	
Inspection	Example per UHA-31(0)
Reinspection	RTCS - Spot Laps and Circ seams
PHWT	None
Hydro Test	200 psid
Service	Fluid: Hydrogen gas
	Capacity: 26.6 cu. ft./199 Gal/553.1 L.
	Weight - Empty: 730 lb
	Weight - Operating: 800 lbs



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TITLE:	HYDROGEN STORAGE VESSEL
DRAWING NUMBER:	UA-TANK-0011-00
REVISION:	
DATE:	

NOZZLE	Mark	Size	Qty.	Service	WELDS				BOM ITEM #
					Type	41	42	43	
N1	1/2"	1	Inlet	UW-16.1	138	-	-	8	
N2	1/2"	1	Outlet	UW-16.1	138	-	-	8	
N3	1/2"	1	Relief	UW-16.1	138	-	-	8	
N4	1/2"	1	Ports	UW-16.1	138	-	-	8	
N5	1/2"	1	Draw	UW-16.1	138	-	-	8	



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 Professional Engineer
 2000, Street of Commerce, Ltd.
 1000, Street of Commerce, Ltd.
 1000, Street of Commerce, Ltd.

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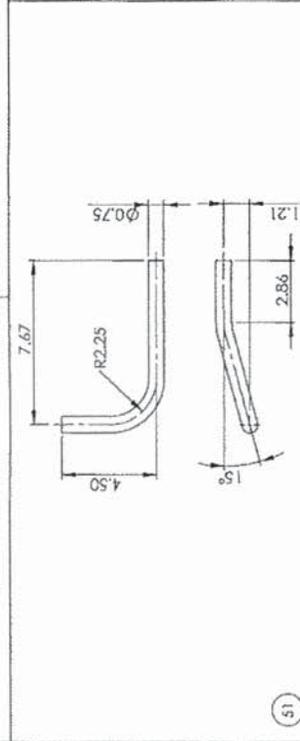
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 HYDROGEN STORAGE TANK
 PIPES

DRAWING NUMBER:
 UA-TANK-0012-00

REVISION:
 DATE:

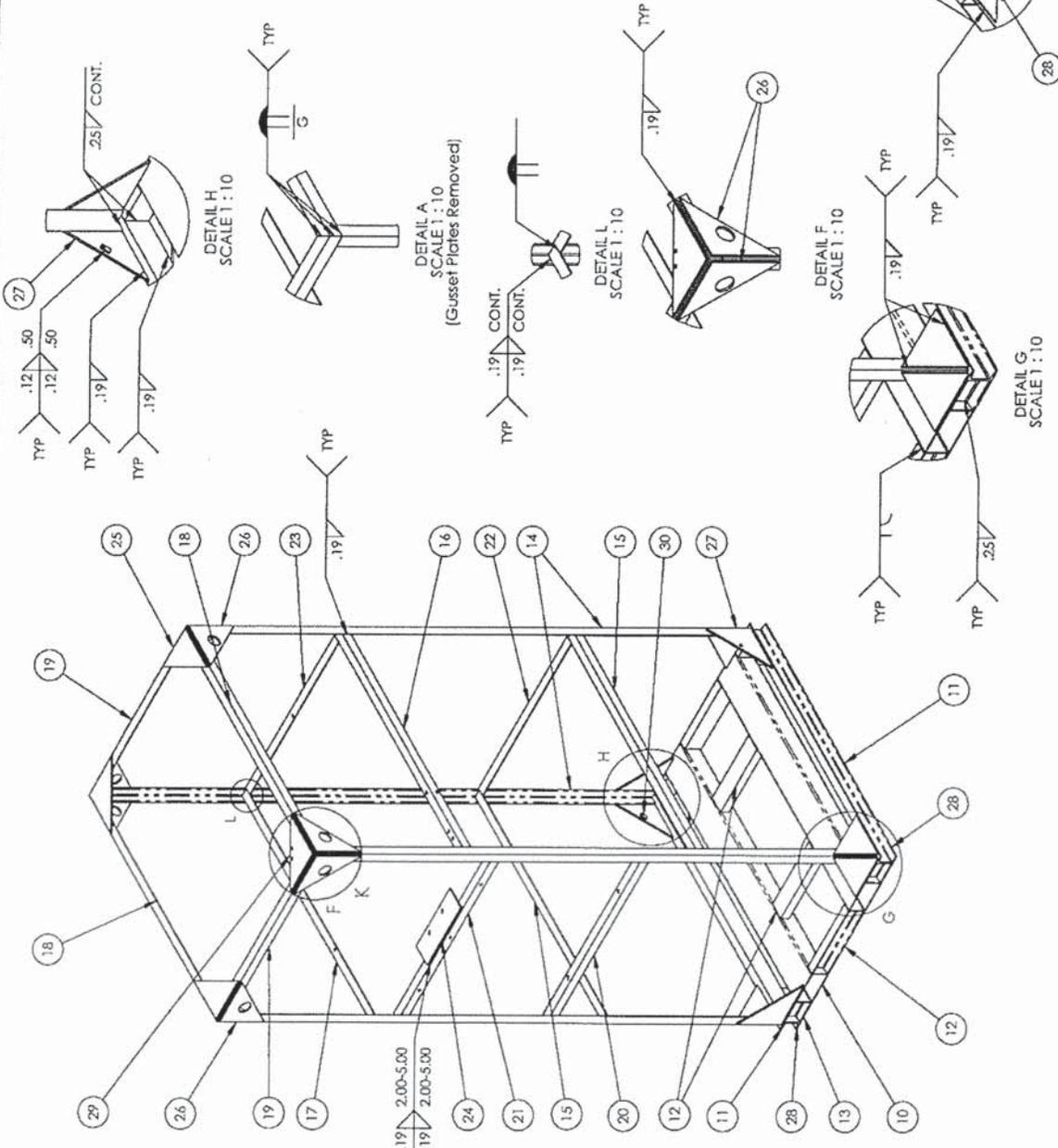
V. BRUNDRETT
 LICENSED PROFESSIONAL ENGINEER
 380033029
 2/7/04
 PROVINCE OF ONTARIO

$\phi 0.25$
 6.64
 2.97
 R0.75



BILL OF MATERIALS

Item	QTY	DESCRIPTION	MATERIAL
10	2	Tube, Rect. - 6.00 x 3.00 x .12 x 48.00	SS 304
11	2	Channel - C3 x 5 x 48.00	SS 304
12	4	Channel - C3 x 5 x 13.00	SS 304
13	4	Channel - C3 x 5 x 4.00	SS 304
14	4	Angle - 1.50 x 1.50 x .19 x 190.00	SS 304
15	2	Angle - 1.50 x 1.50 x .19 x 46.50	SS 304
16	1	Angle - 1.50 x 1.50 x .19 x 46.50	SS 304
17	1	Angle - 1.50 x 1.50 x .19 x 47.00	SS 304
18	2	Angle - 1.50 x 1.50 x .19 x 35.00	SS 304
19	2	Angle - 1.50 x 1.50 x .19 x 34.50	SS 304
20	1	Angle - 1.50 x 1.50 x .19 x 34.50	SS 304
21	1	Angle - 1.50 x 1.50 x .19 x 32.00	SS 304
22	1	Angle - 1.50 x 1.50 x .19 x 32.00	SS 304
23	1	Angle - 1.50 x 1.50 x .19 x 32.00	SS 304
24	1	Plate, Cover - .25 x 4.00 x 24.50	SS 304
25	9	Plate, Gasket - .25 x 8.00 x 8.00	SS 304
26	8	Plate, Lifting - .25 x 8.00 x 8.00	SS 304
27	2	Plate, Grid Lug - .25 x 8.00 x 8.00	SS 304
28	4	Plate, Mounting - .25 x 8.00 x 8.00	SS 304
29	1	Plate, Bore Mig - .25 x 8.00 x 8.00	SS 304
30	2	Weld Nut, Offset - .305-16 UNC (94-281A148)	16-8 SS



NOTES:

1. ESTIMATED WEIGHT: 320 LBS
2. ALL WELDS CONTINUOUS UNLESS OTHERWISE STATED
3. FIT-UP AND EDGE PREP AS REQUIRED
4. APPEARANCE OF ALL WELDS TO BE NEAT AND CLEAN IN APPEARANCE
5. DEBURR ALL HOLES AND REMOVE SHARP EDGES
6. EXTERNAL SURFACES OF THE FRAME TO HAVE A UNIFORM GLASS BEAD FINISH.

PV Eng
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 1000 Lakeshore Blvd. East
 Suite 1000
 Scarborough, Ontario
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 Tel: (416) 291-8888

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 Service Météorologique du Canada

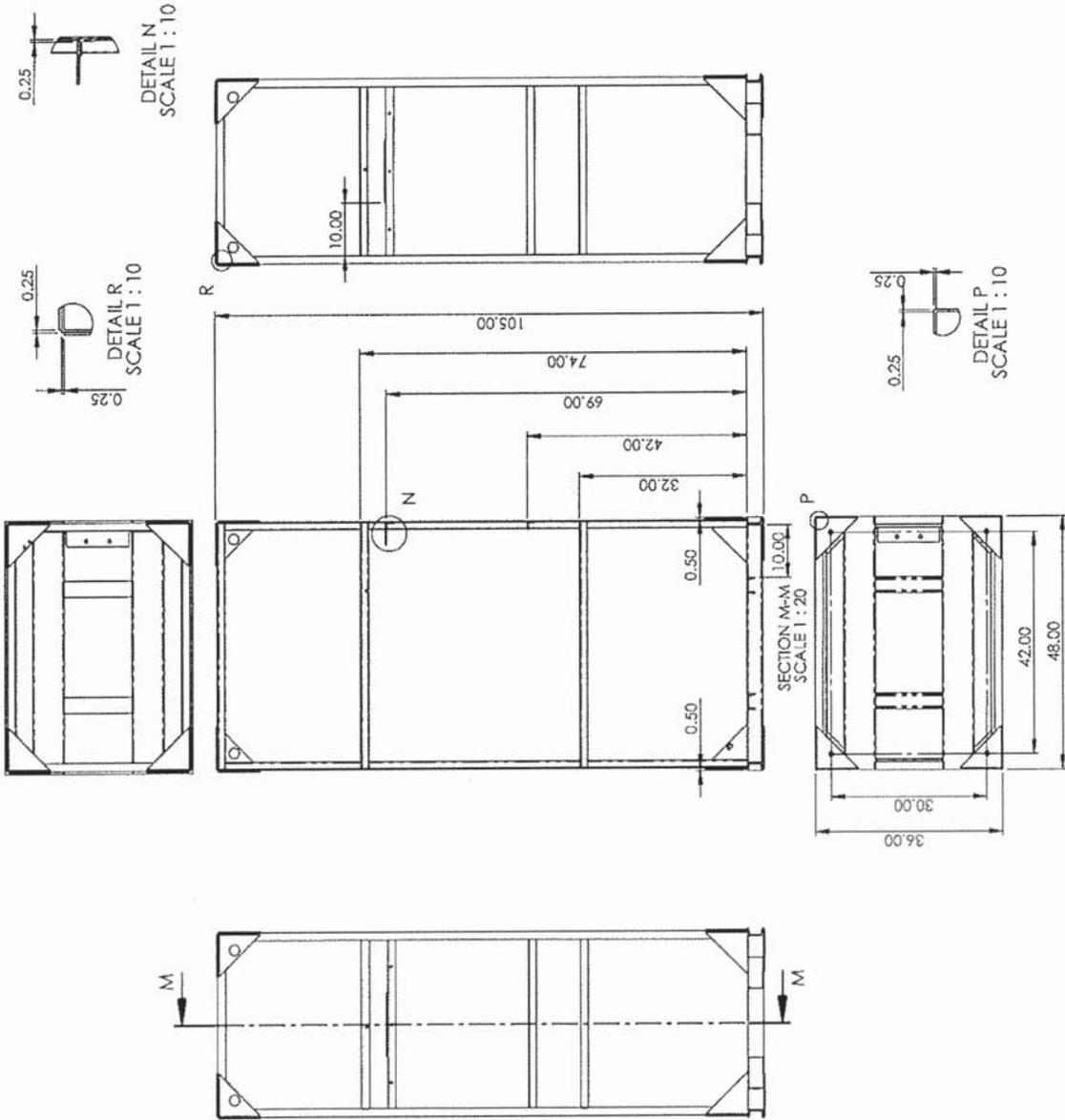
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 HYDROGEN STORAGE TANK
 FRAME COMP.

DRAWING NUMBER:
 UA-TANK-0050-00

REVISION:

DATE:

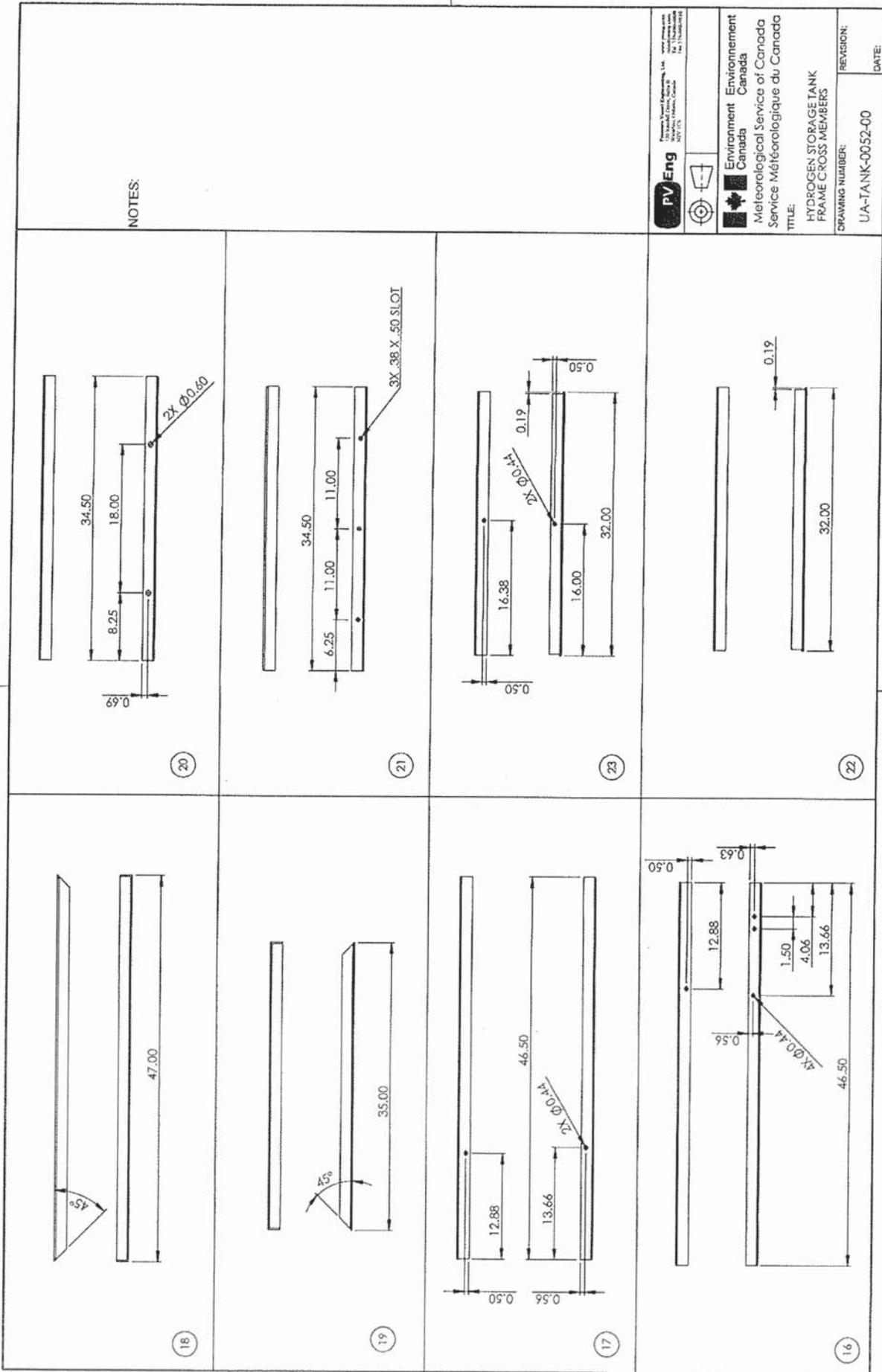
NOTES:



PV Eng
Professional Engineering, Ltd.
1000, Avenue de l'Industrie, L.A.
1000, Avenue de l'Industrie, L.A.
1000, Avenue de l'Industrie, L.A.
1000, Avenue de l'Industrie, L.A.

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Environnement Canada
Meteorological Service of Canada
Service Météorologique du Canada

TITLE: HYDROGEN STORAGE TANK FRAME
DRAWING NUMBER: UA-TANK-0051-00
REVISION:
DATE:



NOTES:

PV Eng
 Precision Valve Engineering, Ltd.
 10000 104th Street, Suite 100
 Edmonton, Alberta, Canada
 T6E 1K7

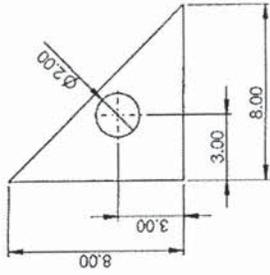
Environment Canada
 Environment Canada
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 Service Météorologique du Canada

TITLE:
 HYDROGEN STORAGE TANK
 FRAME CROSS MEMBERS

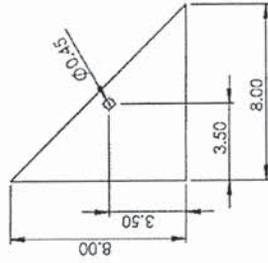
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REVISION:
 DATE:

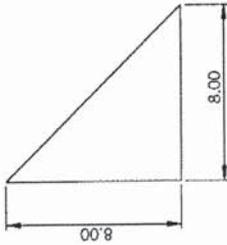
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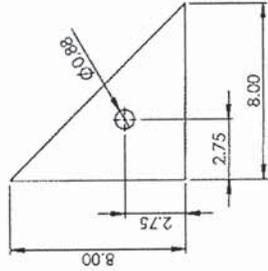
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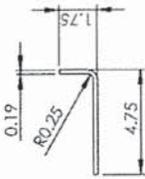
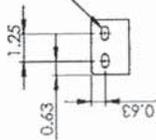
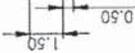


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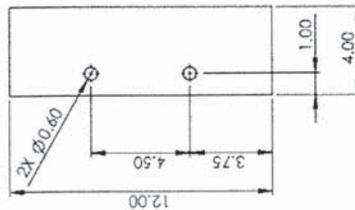


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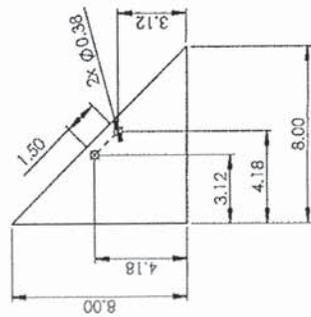
2X .38 X .63 SLOT



78



24



29

PV Eng
 Precision Valve Engineering, Ltd.
 12000 10th Street, Unit 101
 Calgary, Alberta, Canada
 T2C 1K7



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TITLE:

HYDROGEN STORAGE TANK
 FRAME GUSSET AND BRACKET

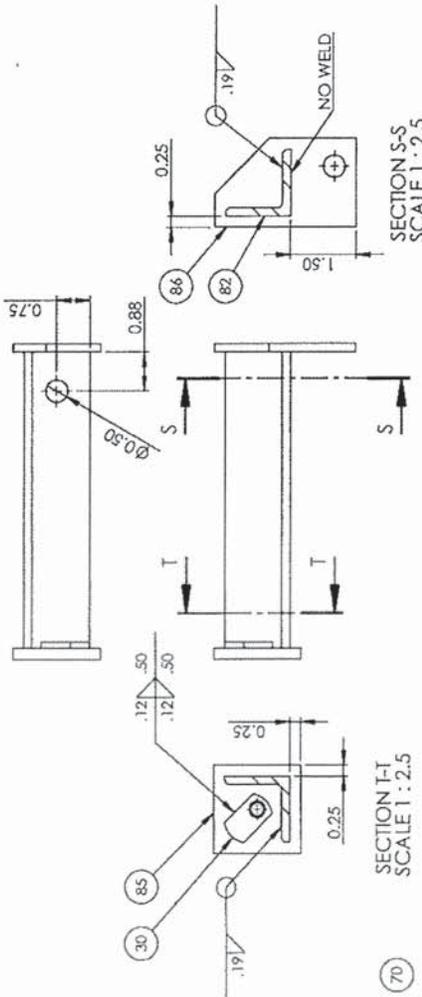
REVISION:

DRAWING NUMBER:
 UA-TANK-0053-00

DATE:

BILL OF MATERIALS

Item	QTY	DESCRIPTION	MATERIAL
86	1	Plate, Base - .25 x 3.25 x 2.00	SS 304
82	1	Angle - 1.50 x 1.50 x 1.9 x 6.00	SS 304
85	1	Plate - .25 x 2.00 x 2.00	SS 304
30	1	Weld Nuts, Other - 3/8-16 UNC (F4581A148)	1347 SS

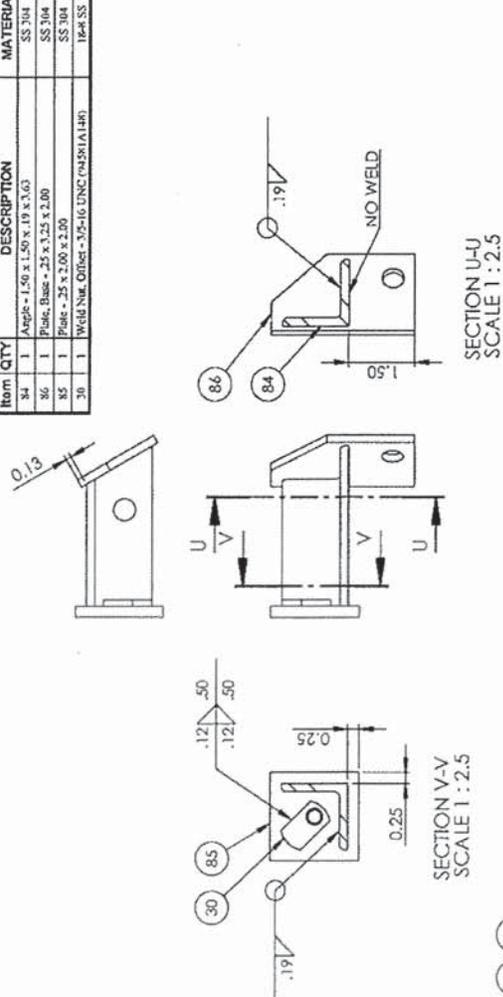


SECTION T-T
SCALE 1 : 2.5

SECTION S-S
SCALE 1 : 2.5

BILL OF MATERIALS

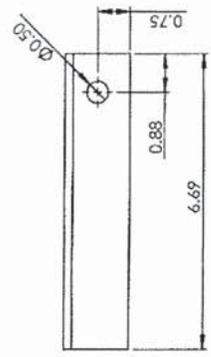
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84	1	Angle - 1.50 x 1.50 x 1.9 x 3.60	SS 304
86	1	Plate, Base - .25 x 3.25 x 2.00	SS 304
85	1	Plate - .25 x 2.00 x 2.00	SS 304
30	1	Weld Nuts, Other - 3/8-16 UNC (F4581A148)	1347 SS



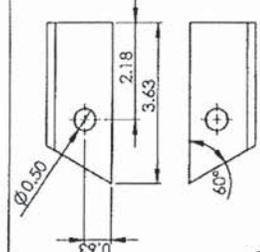
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SCALE 1 : 2.5

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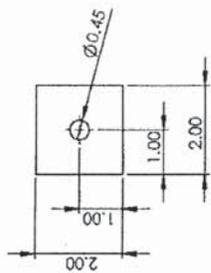


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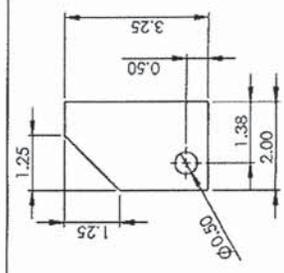


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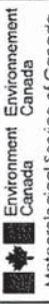
84



85



86



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Service Météorologique du Canada

TITLE:
HYDROGEN STORAGE TANK
FRAME SUPPORTS

DRAWING NUMBER:
UA-TANK-0054-00

REVISION:
DATE:

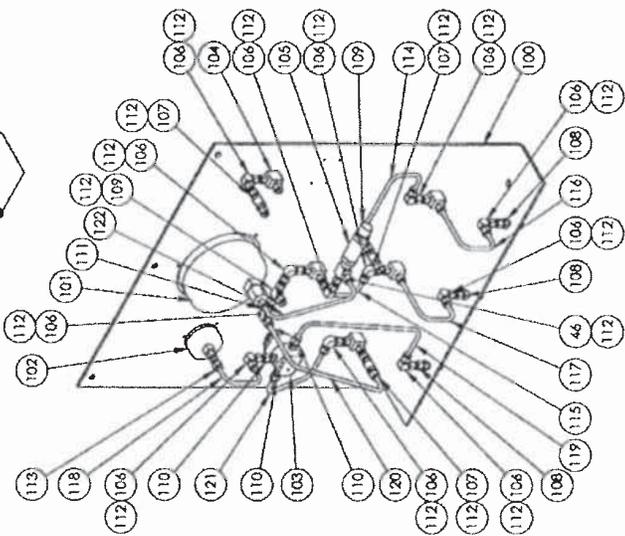
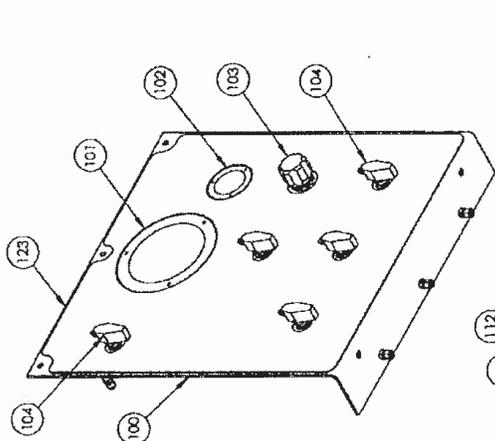
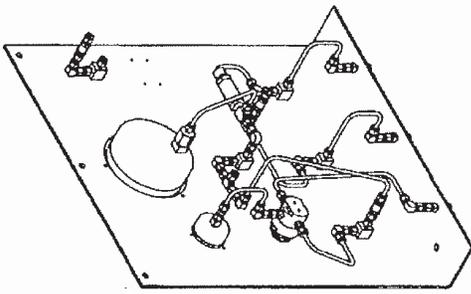
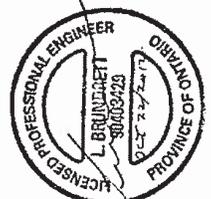
Item	QTY	PartNo	MATERIAL	CRN	DESCRIPTION	Notes
100	1	UA-TANK-0101	SS 304		6" DIA. PRESSURE GAUGE UP TO 300PSI WITH DUAL SCALE	See dwg UA-TANK-0101-00
101	1	Swagelok PG-1608-PC300-B4PX-BQJ	SS 316	OF0206L2C	1/2" DIA. PRESSURE GAUGE TO 300PSI WITH DUAL SCALE	FRONT FLANGE MOUNTING
102	1	Swagelok PG-628-PC300-CA0X-BQJ	SS 316	OF0206L2C	1/2" DIA. PRESSURE GAUGE TO 300PSI WITH DUAL SCALE	FRONT FLANGE MOUNTING
103	1	Swagelok KPH-GC417A-6000BK	SS 316	OC0684L3C	SS REGULATOR WITH GAUGE OUTLET LEFT	
104	5	Swagelok SS-4035-A-LL	SS 316	OC0684L3C	BALL VALVE WITH LATCH LOCK HANDLE	VERTICAL ORIENTATION OF HANDLE IS OPEN
105	1	WKA E-10-A-PB1-AN3-Z023467-ZZ			4.250x1.75 WIRE 1/4" NPT 300PSI SENSING	
106	11	Swagelok SS-400-9	SS 316	OA12577L5C	1/2" NPT 300PSI SENSING	PIPE TAPE TO BE USED ON ALL NPT FITTINGS
107	3	Swagelok SS-4C-PP-1	SS 316	OC12577L5C	CRACKING PRESSURE	FLOW DIRECTION IS CRITICAL
108	2	Swagelok SS-400-61	SS 316	OA12577L5C	1/2" NPT 300PSI SENSING	
109	2	Swagelok SS-400-3	SS 316	OA12577L5C	1/2" NPT 300PSI SENSING	
110	3	Swagelok SS-400-1-4	SS 316	OA12577L5C	1/2" NPT 300PSI SENSING	
111	1	Swagelok SS-400-7-4	SS 316	OA12577L5C	1/2" NPT 300PSI SENSING	
112	16	Swagelok SS-401-PC	SS 316	OA12577L5C	1/2" NPT 300PSI SENSING	
113	1	Swagelok SS-400-6	SS 316	OA12577L5C	1/2" NPT 300PSI SENSING	
46	1	Swagelok SS-400-3-1T1T	SS 316	OA12577L5C	1/2" NPT 300PSI SENSING	
114	1	TP316/316L SMLS	SA-213		Tube - 250 00 20 Ga (0.015) x -9.36	
115	1	TP316/316L SMLS	SA-213		TUBE 250 00 20 Ga (0.015) x -9.36	
116	1	TP316/316L SMLS	SA-213		TUBE 250 00 20 Ga (0.015) x -4.50	
117	1	TP316/316L SMLS	SA-213		TUBE 250 00 20 Ga (0.015) x -4.50	
118	1	TP316/316L SMLS	SA-213		TUBE 250 00 20 Ga (0.015) x -6.65	
119	1	TP316/316L SMLS	SA-213		Tube - 250 00 20 Ga (0.015) x -14.30	
120	1	TP316/316L SMLS	SA-213		Tube - 250 00 20 Ga (0.015) x -18.62	
121	1	TP316/316L SMLS	SA-213		Tube - 250 00 20 Ga (0.015) x -9.33	
122	1	TP316/316L SMLS	SA-213		Tube - 250 00 20 Ga (0.015) x -9.97	
123	1	UA-TANK-0199			Label - Hydrogen Tank Panel	See dwg UA-TANK-0199-00

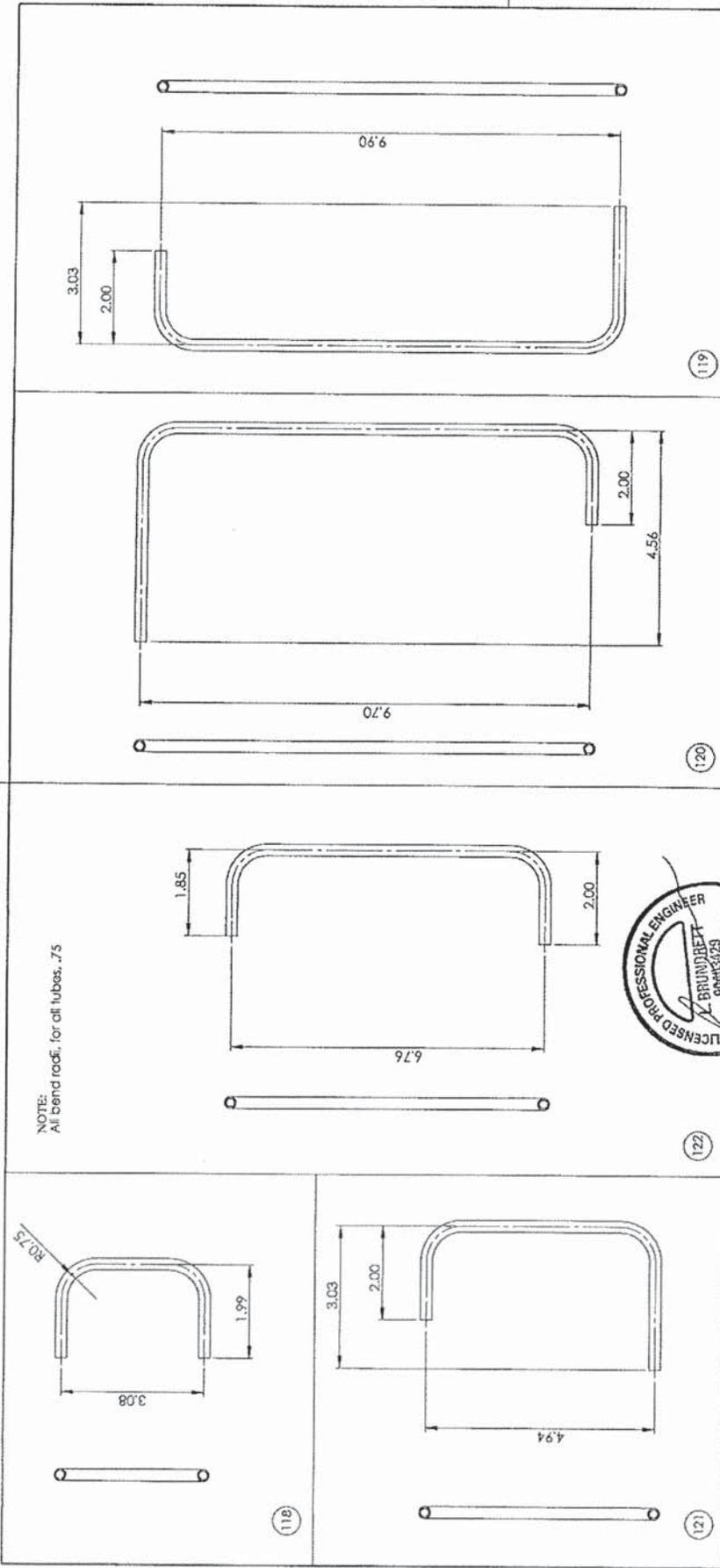
- Notes:
- The manufacturer shall have a valid certificate of authorization to assemble and register category H fittings in accordance with CSA B51
 - PTFE tape to be used on all NPT connections
 - Use Loctite Nickel Anti-seize on all bolted joints
 - All tubing shall be deburred
 - Assembly by Swagelok trained technician only
 - Each assembly manufactured shall be pneumatically pressure tested to 300 psi with helium in accordance with ASME B31.3. Each joint shall be verified leak free by applying Swagelok肥皂, no bubbles permitted.
 - Use only assembly drawings and nomenclature for the pressure gauges
 - Only Swagelok shall supply unless otherwise noted
 - All components are Swagelok unless otherwise noted
 - Logo plate to be fastened with stainless steel rivets after assembly, refer to dwg UA-TANK-0198.






TITLE: HYDROGEN STORAGE TANK PANEL ASSEMBLY
 DRAWING NUMBER: UA-TANK-0100-00
 REVISION:
 DATE:





NOTE:
All bend radii for all tubes .75

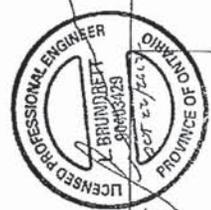
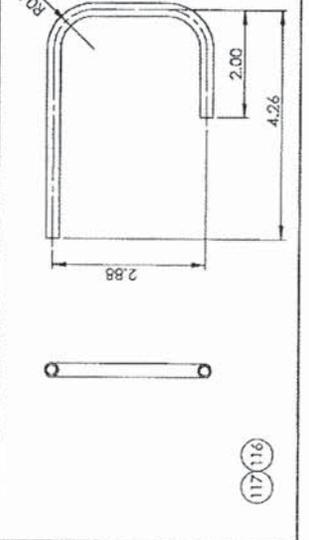
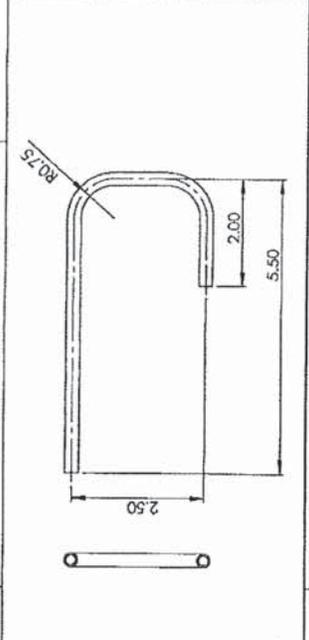
pv Eng
Professional Engineering
1000 Lakeshore Blvd. East
Scarborough, Ontario
M1V 4Y7, Canada
Tel: 416-291-9900

Environment Canada
Metéorological Service of Canada
Service Météorologique du Canada

TITLE:
HYDROGEN STORAGE TANK
PIPES

DRAWING NUMBER:
UA-TANK-0102-00

REVISION:
DATE:



118 119 120 122 113 114 117 116

REVISION HISTORY:		
REV	DESCRIPTION	DATE
00	INITIAL RELEASE	25SEP2012
		JA

NOTES:
 1) THICKNESS IS 3/16" MATERIAL (IS 304 STAINLESS STEEL)
 2) INNER BEND RADIUS IS 3/16"
 3) REMOVE ALL SHARP EDGES AND BURRS
 4) PROTECT SURFACE DURING FABRICATION TO ENSURE NO DAMAGE

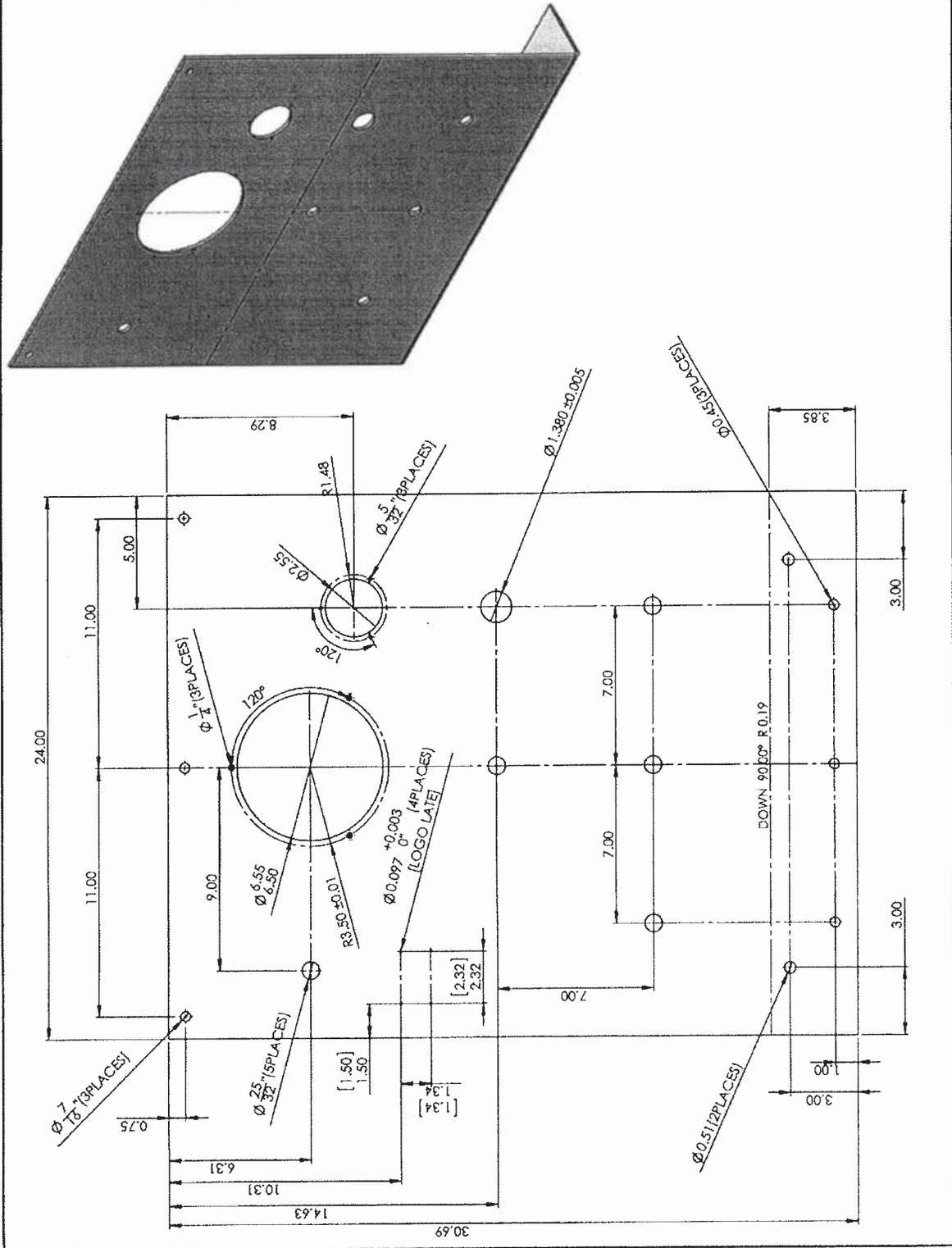
TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FROM 30.0mm TO 50.0mm = ±0.25mm
 ±0.005"
 ALL RADII = ±1.0mm
 ALL ANGLES = ±1.0°

DESIGN: JEFF ANDERSON 25SEP2012
 APPROVED: PETER LEIBJUK 26SEP2012
 MATERIAL: NOTED
 FINISH: AS SUPPLIED

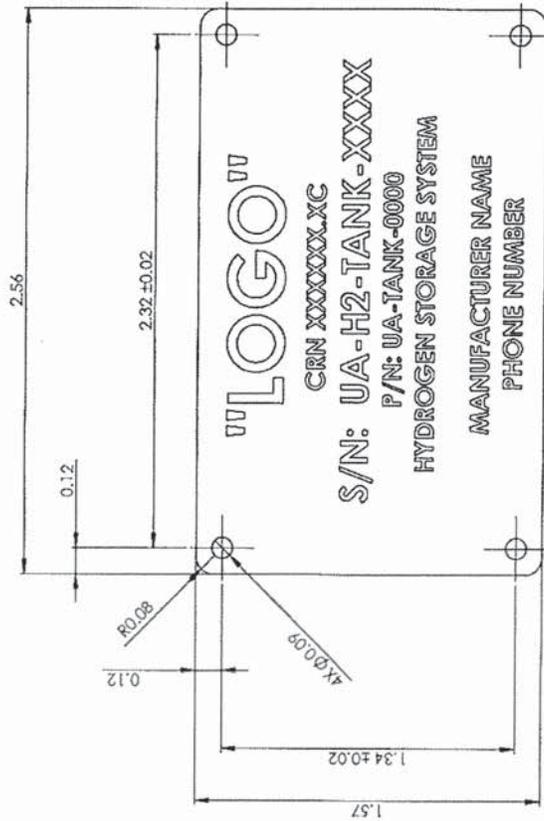
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED

Environment Canada
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TITLE: HYDROGEN TANK PANEL
 DRAWING NUMBER: UA - TANK - 0101 - 00
 REVISION: 00



SERIAL NUMBER IS 12pt FONT
 "LOGO" IS NOT GREATER THAN 0.25" HIGH
 ALL OTHER TEXT IS 8pt FONT



REV	DESCRIPTION	DATE	INITIALS

NOTES:

- 1) PLATE THICKNESS 1/64 INCH MATERIAL 304SS
- 2) "LOGO" TO BE REPLACED WITH COMPANY TRADEMARK
- 3) CRN NUMBER TO BE COMPLETED BY REPLACING X
- 4) MANUFACTURER NAME TO BE REPLACED WITH COMPANY NAME INCLUDING TELEPHONE NUMBER
- 5) SERIAL NUMBER (S/N) TO BE COMPLETED BY REPLACING X ONLY
- 6) PART NUMBER AND HYDROGEN STORAGE SYSTEM NOT TO BE CHANGED
- 7) SAMPLE TO BE SENT TO ENVIRONMENT CANADA FOR APPROVAL

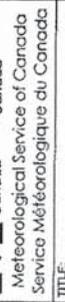
TOLERANCES UNLESS OTHERWISE SPECIFIED:
 ±0.05"
 ALL RADII = ±0.05"

DESIGN:	JEFF ANDERSON	25OCT2012
APPROVED:	PETER LEIJUUK	25OCT2012
MATERIAL:		

LISTED FINISH: AS FINISHED



ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED



Environment Canada
 Meteorological Service of Canada
 Service Météorologique du Canada

TITLE: STORAGE TANK, PANEL
 LOGO PLATE

DRAWING NUMBER:	UA-TANK-0198
REVISION:	
DATE:	

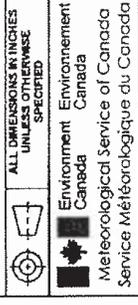
REVISION HISTORY:

REV	DESCRIPTION	DATE	INITIALS
00	INITIAL RELEASE	25SEP2012	J/A

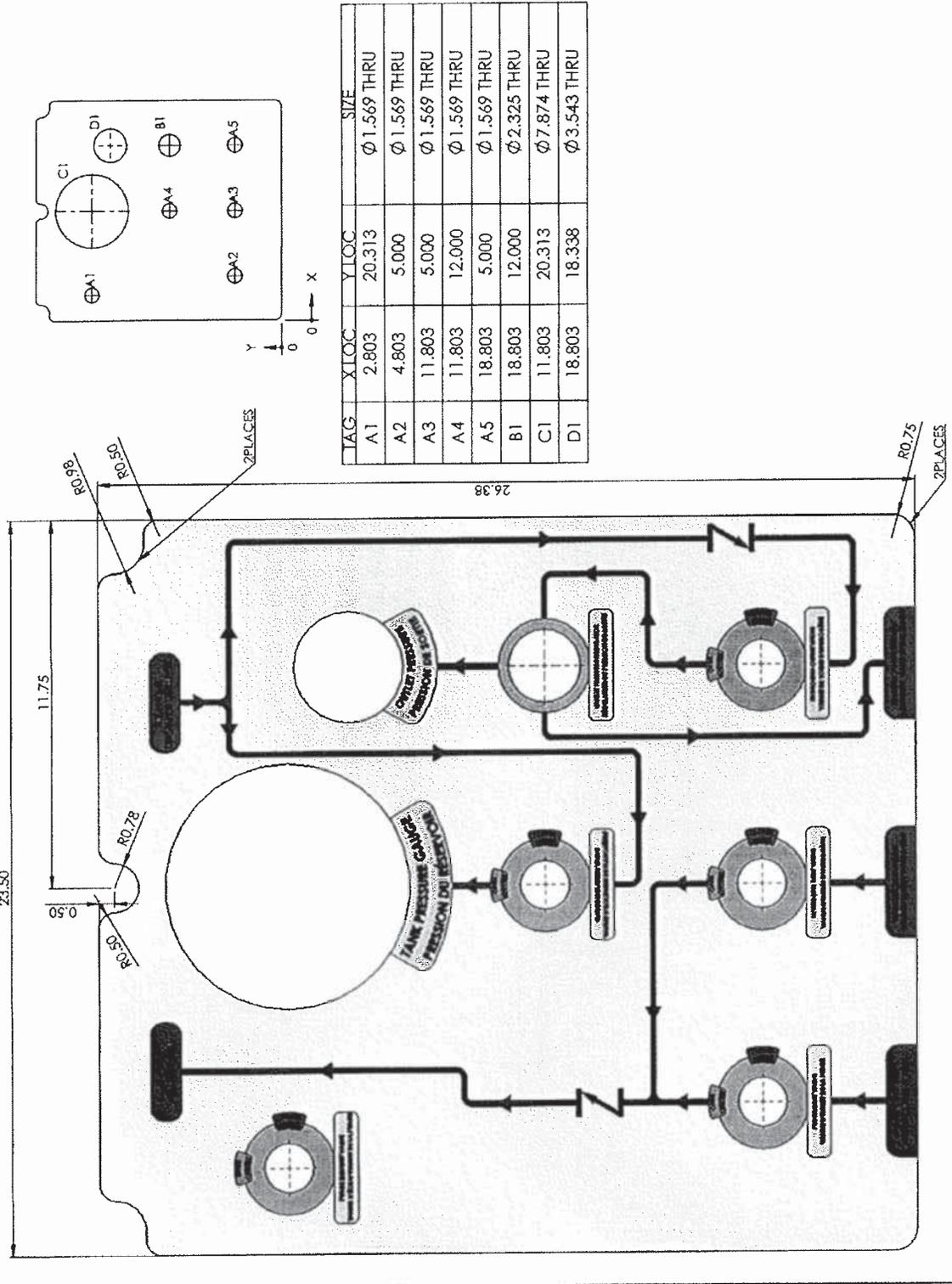
NOTES:
 1) VINYL LABEL WITH ADHESIVE BACKING. CLEAR WHITE LAMINATE TOP COAT
 2) MUST NOT PEEL OR MOVE WHEN APPLIED TO 304SS IN TEMPERATURES FROM 60°C TO -50°C
 3) PROOF SAMPLE SUBJECT TO ENVIRONMENT CANADA APPROVAL

TOLERANCES UNLESS OTHERWISE SPECIFIED:
 THRU HOLES: ± 0.05
 LESS THAN 1.000": ± 0.010
 GREATER THAN 1.000": ± 0.030
 ANGLES: ± 1.0

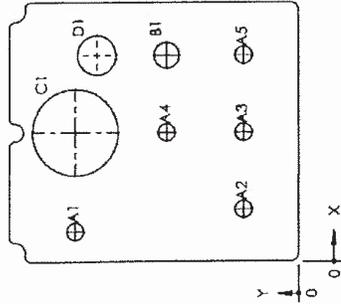
DESIGN: JEFF ANDERSON 25SEP2012
 APPROVED: PETER LEIBLUK 26SEP2012
 MATERIAL: NOTED
 FINISH: NOTED



TITLE: HYDROGEN TANK PANEL LABEL
 DRAWING NUMBER: UA - TANK-0199 - 00
 REVISION: 00



TAG	XLOC	YLOC	SIZE
A1	2.803	20.313	$\varnothing 1.569$ THRU
A2	4.803	5.000	$\varnothing 1.569$ THRU
A3	11.803	5.000	$\varnothing 1.569$ THRU
A4	11.803	12.000	$\varnothing 1.569$ THRU
A5	18.803	5.000	$\varnothing 1.569$ THRU
B1	18.803	12.000	$\varnothing 2.325$ THRU
C1	11.803	20.313	$\varnothing 7.874$ THRU
D1	18.803	18.338	$\varnothing 3.543$ THRU



26.38

R0.75
2 PLACES

REVISION HISTORY:		DATE	INITIALS
REV	DESCRIPTION		
00	INITIAL RELEASE	03OCT2012	JA

NOTES:
1) REMOVE ALL SHARP EDGES AND BURRS

TOLERANCES UNLESS OTHERWISE SPECIFIED:
±0.01"
ALL RADII = ±0.025
ALL ANGLES = ±1.0°

DESIGN: JEFF ANDERSON 03OCT2012
APPROVED: PETER LEJBUK 04OCT2012

MATERIAL: ALUMINIUM 6061

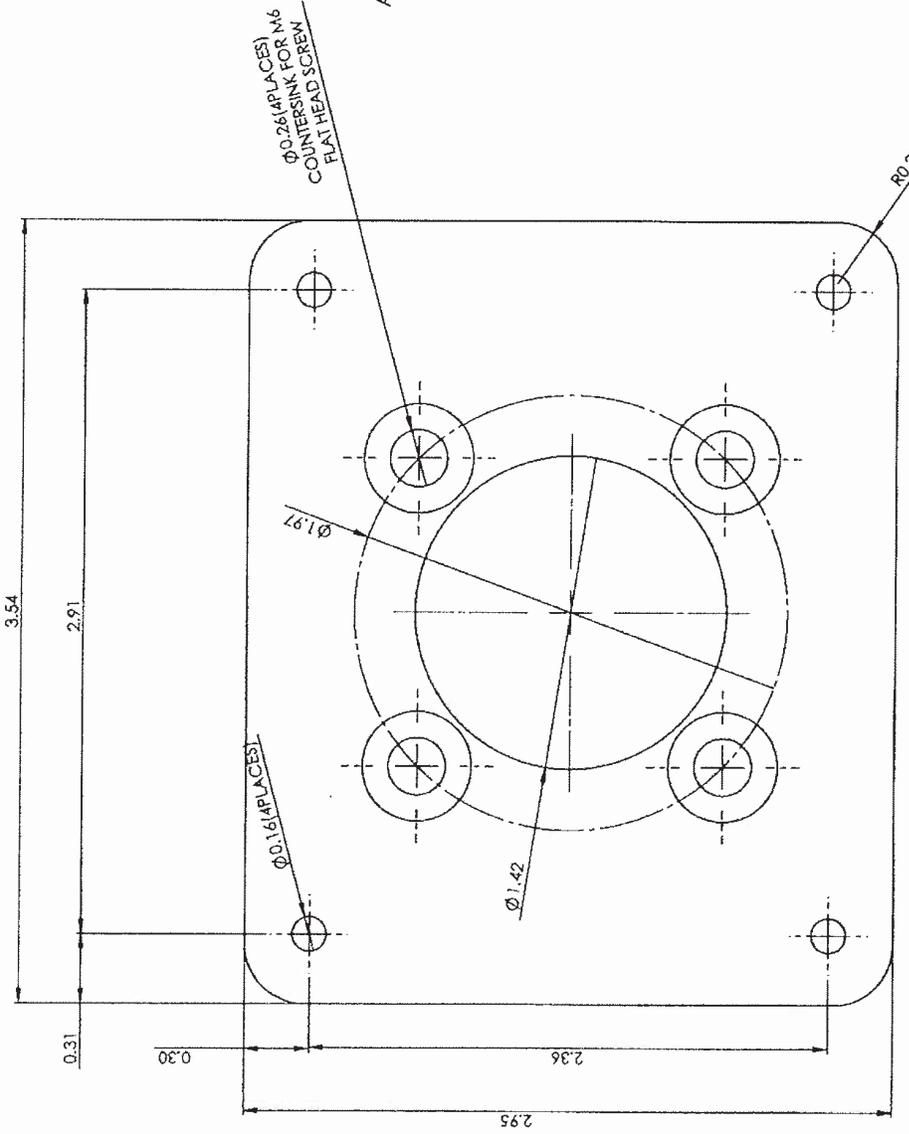
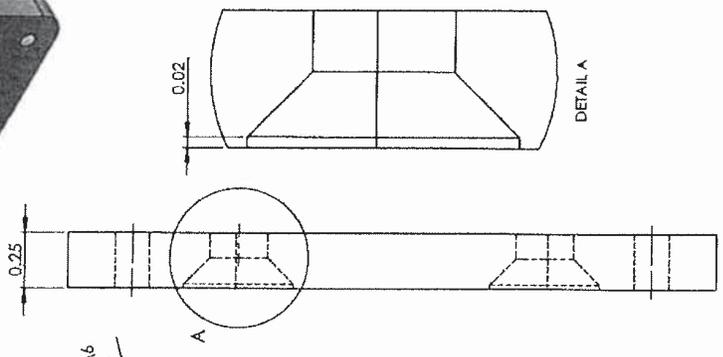
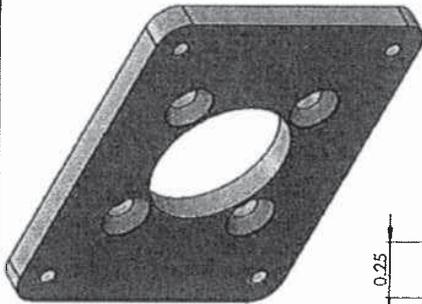
FINISH: AS SUPPLIED

ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED

Environment Canada
Environnement Canada
Meteorological Service of Canada
Service Météorologique du Canada

TITLE: HYDROGEN TANK, ACTUATOR PLATE

DRAWING NUMBER: UA - TANK - 0200 - 00
REVISION: 00



Ø0.26 (4 PLACES)
COUNTERSINK FOR M6
FLAT HEAD SCREW

Ø0.1614 PLACES

Ø1.97

Ø1.42

R0.28

DETAIL A

REVISION HISTORY:			
REV	DESCRIPTION	DATE	INITIALS
00	INITIAL RELEASE	06/07/91	JA

NOTES:
 1) REMOVE ALL SHARP EDGES
 AND BURRS

TOLERANCES UNLESS OTHERWISE SPECIFIED:
 ±0.01"
 ALL RADII = ±0.025"
 ALL ANGLES = ±1.0°

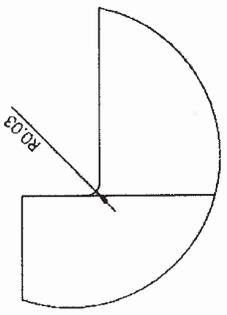
DESIGN: JEFF ANDERSON
 APPROVED: PETER LEJBIK
 MATERIAL: 304 STAINLESS STEEL

FINISH: AS FINISHED
 ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED

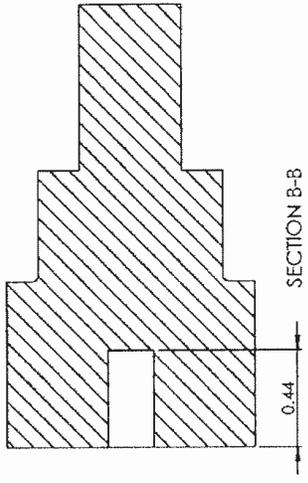
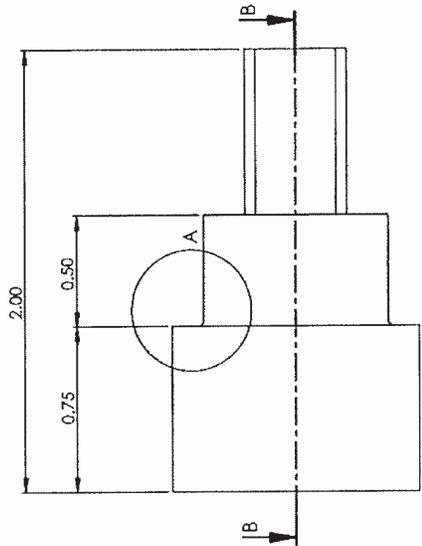
Environment Canada
 Meteorological Service of Canada
 Service Météorologique du Canada

TITLE: HYDROGEN TANK ACTUATOR COUPLING

DRAWING NUMBER: UA-TANK-0201-00
 REVISION:



DETAIL A



SECTION B-B

