

SPECIFICATION

SOLICITATION #:14-22047

BUILDING: VIC
5071 West Saanich Road
Victoria, BC

PROJECT: VIC – Watermain Upgrades

PROJECT #:

Date: October 2014



National Research
Council Canada

Conseil national
de recherches Canada

Canada

SPECIFICATION

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National Research Council Canada	Conseil national de recherches Canada
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Administrative Services & Property management Branch (ASPM)	Direction des services administratif et gestion de l'immobilier (SAGI)
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Construction Tender Form

Project Identification

VIC - WATERMAIN UPGRADES

Tender No.:

14-22047

1.2 Business Name and Address of Tenderer

Name _____

Address _____

Contact Person(Print Name) _____

Telephone () _____ Fax: () _____

1.3 Offer

I/We the Tenderer, hereby offer to Her Majesty the Queen in Right of Canada (hereinafter referred to as "Her Majesty") represented by the National Research Council Canada to perform and complete the work for the above named project in accordance with the Plans and Specifications and other Tender Documents, at the place and in the manner set out therein for the Total Tender Amount (to be expressed in numbers only) of: \$ _____ in lawful money of Canada (excluding GST/HST)

The above amount is inclusive of all applicable (*) Federal, Provincial and Municipal taxes except that in the event of a change in any tax imposed under the Excise Act, the Excise Tax Act, the Old Age Security Act, the Customs Act, the Customs Tariff or any provincial sales tax legislation imposing a retail sales tax on the purchase of tangible personal property incorporated into Real Property, that occurs

- .1 after the date this tender was mailed or delivered, or
- .2 if this tender is revised, after the date of the last revision

the amount of this offer shall be decreased or decreased in the manner provided for in GC22 of the General Conditions of the Contract Documents.

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Administrative Services & Property management Branch (ASPM)	Direction des services administratif et gestion de l'immobilier (SAGI)

1.3.1 **Offer** (continued)

(*) For the purpose of this tender, the Goods and Services Tax (GST) is not to be considered as an applicable tax.

In the province of Quebec, the Quebec Sales Tax is not to be included in the tender amount because the Federal Government is exempt from this tax. Tenderers shall make arrangements directly with the provincial Revenue Department to recover any tax they may pay on good and services acquired in the performance of this contract. However, tenderers should include in their tender amount Quebec Sales Tax for which an Input Tax Refund is not available.

1.4 **Acceptance and Entry into Contract**

I/We undertake, within fourteen (14) days of notification of acceptance of my/our offer, to sign a contract for the performance of the work provided I/we are notified, by the Department, of the acceptance of my/our offer within 30 days of the tender closing date.

1.5 **Construction Time**

I/We Agree to complete the work within the time stipulated in the specification from the date of notification of acceptance of my/our offer.

1.6 **Bid Security**

I/We herewith enclose tender security in accordance with Article 5 of the General Instruction to Tenderers.

I/We understand that if a security deposit is furnished as tender security and if I/we refuse to enter into a contract when called upon to do so, my/our security deposit shall be forfeited but the Minister may, if it is in the public interest, waive the right of Her Majesty to forfeit the security deposit.

I/We understand that if the security furnished is not in the approved form as described in Article 5 of the General Instructions to Tenderers, my/our tender is subject to disqualification.

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1.7 **Contract Security**

Within fourteen (14) days after receipt of written notification of the acceptance of my/our offer, I/we will furnish contract security in accordance with the Contract Conditions "F" of the Contract Documents.

I/We understand that the contract security referred to herein, if provided in the form of a bill of exchange, will be deposited into the Consolidated Revenue Fund of Canada.

1.8 **Appendices**

This Tender Form includes Appendix "A."

1.9 **Addenda**

The Total Tender Amount provides for the Work described in the following Addenda:

NUMBER	DATE	NUMBER	DATE

(Tenderers shall enter numbers and dates of addenda)

National Research Council Canada	Conseil national de recherches Canada
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Administrative Services & Property management Branch (ASPM)	Direction des services administratif et gestion de l'immobilier (SAGI)
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1.10 Execution of Tender

The Tenderer shall refer to Article 2 of the General Instructions to Tenderers.

**SIGNED, ATTESTED TO AND DELIVERED on the _____ day of
_____ on behalf of**

(Type or print the business name of the Tenderer)

AUTHORIZED SIGNATORY (IES)

(Signature of Signatory)

(Print name & Title of Signatory)

(Signature of Signatory)

(Print name & Title of Signatory)

SEAL

IMPORTANT: BID MUST INCLUDE THIS TABLE

Item	Description / Scope of Work	Unit	Qty	Price(\$)
i)	Watermain Replacement	Lump Sum	1	\$_____.00
ii)	Temporary potable water facility.	Lump Sum	1	\$_____.00
iii)	Provide Temporary potable water facility operation *	Lump Sum	1	\$_____.00
iv)	OPTIONAL ITEMS			
.1	Supply & Install 100mm gate valve on supply line west of Lower Domestic Pump House	Lump Sum	1	\$_____.00
.2	Supply and installation of lateral supports in Lower Domestic Pump House.	Lump Sum	1	\$_____.00
.3	Supply and installation of system isolation and maintenance valving and piping on domestic supply tanks in Upper Domestic Pump House Room 2.	Lump Sum	1	\$_____.00
.4	Asphalt Edge repairs – based on 50 Square Meters Note: Basis of payment shall be for actual area of repairs as directed by NRC.	Square Meter	50 x \$/SM	\$_____.00
	TOTAL QUOTED PRICE for bid evaluation items i) + ii) + iii) + iv) .1,.2,.3, &.4 INSERT THIS AMOUNT ON 4th PAGE , paragraph 1.3 of the Tender Document →			\$_____.00
	*Note: In accordance with conditions herein regarding the Additional Temporary potable water facility operation , and upon the approval of NRC , shall be invoiced at the lump sum rate quoted per Item iii) divided by 21 x number of additional days.			

BUYANDSELL NOTICE

VIC – Watermain Upgrades

The National Research Council Canada, 5071 Saanich Road, Victoria, BC has a requirement for a project that includes:

Watermain replacement:

Replacement of existing 100mm Schedule 80 PVC potable watermain with 150mm PE4710 DR9 HDPE on existing alignment. Installation of HDPE Spool section complete with system valving and stainless steel spool sections for connections to existing system. Installation of three (3) watermain flushouts.

Temporary Potable Water Facility:

Supply, installation and decommissioning/removal of a temporary potable water supply to maintain 24/7 facility operation. Works include:

1. Supply and installation of temporary potable tank(s) required to maintain a minimum static volume of 11,000 L. Volume based on average daily consumption of 5500 L. Location for temporary tank(s) as noted on contract drawings.
2. Temporary piping and connections between tank(s) and new flush assembly adjacent to Upper Domestic Pump House,
3. Flushing, testing and disinfection of temporary supply piping and tank as described in Contract Documents,
4. Installation of temporary shutoff valves (3) on exterior overflow piping at domestic supply tanks (located in room two of Upper Domestic Pump House).

Temporary Potable Water Facility Operation:

Operation and maintenance of temporary potable water facility as noted in Contract Documents.

Provisional Items:

1. Supply and installation of 100mm gate valve on supply line west of Lower Domestic Pump House.
2. Supply and installation of lateral supports in Lower Domestic Pump House.
3. Supply and installation of system isolation and maintenance valving and piping on domestic supply tanks in Upper Domestic Pump House Room 2.
4. Asphalt repairs – Estimated maximum 50 SM.

1. GENERAL:

Questions regarding any aspect of the project are to be addressed to and answered only by the Departmental Representative (or his designate) or the Contracting Authority.

Any information received other than from the Departmental Representative (or his designate) or the Contracting Authority will be disregarded when awarding the contract and during construction.

Firms intending to submit tenders on this project should obtain tender documents through the Buyandsell.gc.ca TMA services provider. Addenda, when issued, will be available from the Buyandsell.gc.ca TMA service provider. Firms that elect to base their bids on tender documents obtained from other sources do so at their own risk and will be solely responsible to inform the tender calling authority of their intention to bid. Tender packages are not available for distribution on the actual day of tender closing.

2. MANDATORY SITE VISIT:

It is mandatory that the bidder attends one of the site visits at the designated date and time. At least one representative from proponents that intend to bid must attend.

The site visits will be held on October 21st and October 23rd, 2014 at **9:00**. Meet Clyde Donnelly at VIC Building, Main Entrance, 5071 West Saanich Road, Victoria, BC. Bidders who, for any reason, cannot attend at the specified date and time will not be given an alternative appointment to view the site and their tenders, therefore, will be considered as non-responsive. **NO EXCEPTIONS WILL BE MADE.**

As proof of attendance, at the site visit, the Contracting Authority will have an Attendance Form which **MUST** be signed by the bidder's representative. It is the responsibility of all bidders to ensure they have signed the Mandatory Site Visit Attendance form prior to leaving the site. Proposals submitted by bidders who have not attended the site visit or failed to sign the Attendance Form will be deemed non-responsive.

3. TENDER CLOSING DATE:

Tender closing date is November 5th, 2014 at 14:00.

4. TENDER RESULTS

Following the Tender closing, the tender results will be sent by facsimile to all Contractors who submitted a tender.

5. SECURITY REQUIREMENT FOR CANADIAN CONTRACTORS

5.1 MANDATORY SECURITY REQUIREMENT:

This procurement contains a mandatory security requirement as follows:

- .1 The Contractor must, at all times during the performance of the Contract, hold a valid Designated Organization Screening (DOS), issued by the Canadian Industrial Security Director (CISD), Public Works Government Services Canada.
- .2 The Contractor personnel requiring access to sensitive work site(s) must EACH hold a valid RELIABILITY STATUS, granted or approved by CISD/PWGSC.
- .3 The Contractor must comply with the provisions of the:
 - a. Security Requirements Checklist attached at Appendix "D"
 - b. Industrial Security Manual (Latest Edition) available at: <http://ssi-iss.tpsgc-pwgsc.gc.ca/msi-ism/msi-ism-eng.html>

5.2 VERIFICATION OF SECURITY CLEARANCE AT BID CLOSING

- .1 The Bidder must hold a valid Designated Organization Screening (DOS) issued by the Canadian Industrial Security Directorate (CISD), Public Works and Government Services Canada (PWGSC), TO BE INCLUDED WITH THEIR TENDER OR PROVIDED WITHIN 48 HOURS FROM THE DATE AND TIME OF TENDER CLOSING. Verifications will be made through CISD to confirm the security clearance status of the Bidder. Failure to comply with this requirement will render the bid non-compliant and no further consideration will be given to the bid.
- .2 Within 72 hours of tender closing, the General Contractor must name all of his sub-contractors, each of whom must hold a valid RELIABILITY STATUS, granted or approved by CISD/PWGSC, or any other Federal Department or Agency along with the names and birthdates or security clearance certificate numbers of all personnel who will be assigned to the project.
- .3 It is to be noted that any subcontractor required to perform any part of the work during the performance of the subsequent contract must also adhere to the mandatory security requirement of the contract. As well, no personnel without the required level of security will be allowed on site. It will be the responsibility of the successful bidder to ensure that the security requirement is met throughout the performance of the contract. The Crown will not be held liable or accountable for any delays or additional costs associated with the contractor's non-compliance to the mandatory security requirement. Failure to comply with the mandatory security requirement will be grounds for being declared in default of contract.
- .4 For any enquiries concerning the project security requirement during the bidding period, the Bidder/Tenderer must contact the Security Officer @ 613-993-8956.

6.0 WSIB (WORKPLACE SAFETY AND INSURANCE BOARD)

- .1 All Bidders must provide a valid WSIB certificate with their Tender or prior to contract award.

7.0 OFFICE OF THE PROCUREMENT OMBUDSMAN

.1 Dispute Resolution Services

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the *Department of Public Works and Government Services Act* will, on request or consent of the parties to participate in an alternative dispute resolution process to resolve any dispute between the parties respecting the interpretation or application of a term and condition of this contract and their consent to bear the cost of such process, provide to the parties a proposal for an alternative dispute resolution process to resolve their dispute. The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa-opo.gc.ca.

.2 Contract Administration

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the *Department of Public Works and Government Services Act* will review a complaint filed by [*the supplier or the contractor or the name of the entity awarded this contract*] respecting administration of this contract if the requirements of Subsection 22.2(1) of the *Department of Public Works and Government Services Act* and Sections 15 and 16 of the *Procurement Ombudsman Regulations* have been met, and the interpretation and application of the terms and conditions and the scope of the work of this contract are not in dispute. The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa-opo.gc.ca.

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The Office of the Procurement Ombudsman (OPO) was established by the Government of Canada to provide an independent avenue for suppliers to raise complaints regarding the award of contracts under \$25,000 for goods and under \$100,000 for services. You have the option of raising issues or concerns regarding the solicitation, or the award resulting from it, with the OPO by contacting them by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa-opo.gc.ca. You can also obtain more information on the OPO services available to you at their website at www.opo-boa.gc.ca.

The Departmental Representative or his designate for this project is: **Clyde Donnelly**
Telephone: **250 363-0004**

Contracting Authority for this project is: **Marc Bédard** marc.bedard@nrc-cnrc.gc.ca
Telephone: **613 993-2274**

INSTRUCTIONS TO BIDDERS

Article 1 – Receipt of Tender

- 1a) Tenders must be received not later than the specified tender closing time. Tenders received after this time are invalid and shall not be considered, regardless of any reason for their late arrival.
- 1b) A letter of printed telecommunication from a bidder quoting a price shall not be considered as a valid tender unless a formal tender has been received on the prescribed Tender Form.
- 1c) Bidders may amend their tenders by letter or printed telecommunication provided that such amendments are received not later than the specified tender closing time.
- 1d) Any amendments to the tender which are transmitted by telefax must be signed and must clearly identify the tenderer.

All such amendments are to be addressed to:

National Research Council of Canada
Marc Bedard, Senior Contracting Officer
Building M-22
Montreal Road, Ottawa, Ontario
K1A 0R6

Fax: (613) 991-3297

Article 2 – Tender Form & Qualifications

- 1) All tenders must be submitted on the Construction Tender Form and the tender must be signed in compliance with the following requirements:
 - a) Limited Company: The full names of the Company and the name(s) and status of the authorized signing officer(s) must be printed in the space provided for that purpose. The signature(s) of the authorized officer(s) and the corporate seal must be affixed.
 - b) Partnership: The firm name and the name(s) of the person(s) signing must be printed in the space provided. One or more of the partners must sign in the presence of a witness who must also sign. An adhesive coloured seal must be affixed beside each signature.
 - c) Sole Proprietorship : The business name and the name of the sole proprietor must be printed in the space provided. The sole proprietor must sign in the presence of a witness who must also sign. An adhesive coloured seal must be affixed beside each signature.
- 2) Any alterations in the printed part of the Construction Tender Form or failure to provide the information requested therein, may render the tender invalid.
- 3) All space in the Construction Tender Form must be completed and any handwritten or typewritten corrections to the parts so completed must be initialed immediately to the side of the corrections by the person or persons executing the tender on behalf of the the tenderer.
- 4) Tenders must be based on the plans, specifications and tender documents provided.

Article 3 - Contract

- 1) The Contractor will be required to sign a contract similar to the Standard Contract Form for Fixed Price Construction Contracts, a blank specimen of which is enclosed in the package for reference purposes.

Article 4 – Tender Destination

- 1a) Tenders are to be submitted in sealed envelopes to:
National Research Council Canada
Administrative Services and Property Management Branch

5071 WEST SAANICH ROAD
VICTORIA, BC
V9E 2E7

Endorsed "Tender for (insert title of work as it appears in the drawings and specifications)" and must bear the name and address of the tenderer.

- 1b) Unless otherwise specified, the only documents required to be submitted with the tender are the Tender form and the Bid Security.

Article 5 - Security

- 1a) Bid Security is required and must be submitted in one of the following forms:

- i) a certified cheque payable to the Receiver General for Canada and

drawn on a member of the Canadian Payments Association or a local cooperative credit society that is a member of a central cooperative credit society having membership in the Canadian Payments Association; OR

- ii) bonds of the Government of Canada, or bonds unconditionally guaranteed as to principal and interest by the Government of Canada; OR

- iii) a bid bond.

- 1b) Regardless of the Bid Security submitted, it should never be more than \$250,000 maximum, calculated at 10% of the first \$250,000 of the tendered price, plus 5% of any amount in excess of \$250,000.

- 2a) Bid Security shall accompany each tender or, if forwarded separately from the tender, shall be provided not later than the specified tender closing time. Bid Security must be in the ORIGINAL form. Fax or photocopies and NOT acceptable. FAILURE TO PROVIDE THE REQUIRED BID SECURITY SHALL INVALIDATE THE TENDER.

- 2b) If the tender is not accepted, the Bid Security submitted pursuant to Article 8 shall be returned to the tenderer.

- 3a) The successful tenderer is required to provide security within 14 days of receiving notice of tender acceptance. The tenderer must furnish EITHER:

- i) a Security Deposit as described in 1(b) above together with a Labour and Material Payment Bond in the amount of at least 50% of the amount payable under the contract, OR
- ii) a Performance Bond and a Labour and Material Payment Bond – each in the amount of 50% of the amount payable under the contract.

- 3b) Should it not be possible to obtain a Labour Material Payment Bond as required under 3(a) above, on making application thereof to at least two acceptable Bonding Companies, an additional Security Deposit of a straight 10% of the amount payable under the contract must be furnished.
- 3c) Where a tender has been accompanied by a Security Deposit, as described in 1(b) above, the amount of the Security Deposit required under 3(a) above may be reduced by the amount of the Security Deposit which accompanied the tender.
- 3d) Bonds must be in an approved form and from the companies whose

bonds are acceptable to the Government of Canada. Samples of the approved form of Bid Bond, Performance Bond and Labour and Material Payment Bond and a list of acceptable Bonding Companies may be obtained from the Contracting Officer, National Research Council, Building M-22, Montreal Road, Ottawa, Ontario, K1A 0R6.

Article 6 – Interest On Security Deposits

- 1) Tenderers are notified that they must make their own arrangements with their bankers as to the interest, if any, on the amount of the certified cheque accompanying their tender. The Council will not pay interest on said cheque pending the awarding of the contract nor be responsible for the payments of interest under any arrangement made by the tenderers.

Article 7 – Sales Tax

- 1) The amount of the tender shall include all taxes as levied under the Excise Act, the Excise Tax Act, the Old Age Security Act, the Customs Act or the Customs Tariff, in force or applicable at the time.
- 2) In Quebec, the Provincial Sales Tax should not be included in the Tender Price as the Federal Government is exempt. Tenderers should contact the Provincial Revenue Minister to recover all taxes paid for goods and services rendered under this contract.

Tenderers must include in their Tender Price the amount of Provincial Sales Tax for which the exemption does not apply.

Article 8 – Examination of Site

- 1) All parties tendering shall examine the sites of the proposed work before sending in their tender and make themselves thoroughly acquainted with the same and obtain for themselves any and all information that may be necessary for the proper carrying out of the Contract. No after claim will be allowed or entertained for any work or material that may be requisite and necessary for the proper execution and completion of this Contract with the exception of that provided for under GC 35 in the General Conditions of the General Specification.

Article 9 – Discrepancies, Omissions, Etc.

- 1a) Bidders finding discrepancies in, or omissions from, drawings, specifications or other documents, or having any doubt as to the meaning or intent of any part thereof, should at once notify the Engineer who will

send written instructions or explanation to all bidders.

- 1b) Neither the Engineer nor the Council will be responsible for oral instructions.

- 1c) Addenda or corrections issued during the time of the bidding shall be covered in the proposal. However, the contract supersedes all communications, negotiations and agreements, either written or oral, relating to the work and made prior to the date of the contract.

Article 10 – No additional Payments for Increased Costs

- 1) The only other adjustments in the contract price allowed are those specified in the General Conditions of the General Specification. The contract price will not be amended for change in freight rates, exchange rates, wage rates or cost of materials, plant or services.

Article 11 – Awards

- 1a) The Council reserves the power and right to reject tenders received from parties who cannot show a reasonable acquaintance with and preparation for the proper performance of the class of work herein specified and shown on plans. Evidence of such competence must be furnished by the tenderers if required to do so.
- 1b) A tenderer may be required to furnish to the Contracting Office, National Research Council of Canada, Building M-22, 1200 Montreal Road, Ottawa, Ontario, K1A 0R6, Canada, unsigned copies of the insurance requirements as covered by the Insurance Conditions of the General Specification.
- 1c) The Council does not bind itself to accept the lowest or any tender.

Article 12 – Harmonized Sales Tax

- 1) The Harmonized Sales Tax (HST) which is now in effect shall be considered an applicable tax for the purpose of this tender. However, the bidder shall NOT include any amount in the bid price for said HST. The successful contractor will indicate on each application for payment as a separate amount the appropriate HST the Owner is legally obliged to pay. This amount will be paid to the Contractor in addition to the amount certified for payment under the Contract in addition to the amount certified for payment under the Contract and will therefore not affect the Contract Price. The Contractor agrees to remit any HST collected or due to Revenue Canada.

Acceptable Bonding Companies

Published September 2010

The following is a list of insurance companies whose bonds may be accepted as security by the government.

1. Canadian Companies

ACE INA Insurance
Allstate Insurance Company of Canada
Ascentus Insurance Ltd. (Surety only)
Aviva Insurance Company of Canada
AXA Insurance (Canada)
AXA Pacific Insurance Company
Canadian Northern Shield Insurance Company
Certas Direct Insurance Company (Surety only)
Chartis Insurance Company of Canada (formerly AIG Commercial Insurance Company of Canada)
Chubb Insurance Company of Canada
Commonwealth Insurance Company
Co-operators General Insurance Company
CUMIS General Insurance Company
The Dominion of Canada General Insurance Company
Echelon General Insurance Company (Surety only)
Economical Mutual Insurance Company
Elite Insurance Company
Everest Insurance Company of Canada
Federated Insurance Company of Canada
Federation Insurance Company of Canada
Gore Mutual Insurance Company
Grain Insurance and Guarantee Company
The Guarantee Company of North America
Industrial Alliance Pacific General Insurance Corporation
Intact Insurance Company
Jevco Insurance Company (Surety only)
Lombard General Insurance Company of Canada
Lombard Insurance Company
Markel Insurance Company of Canada
The Missisquoi Insurance Company
The Nordic Insurance Company of Canada
The North Waterloo Farmers Mutual Insurance Company (Fidelity only)
Novex Insurance Company (Fidelity only)
The Personal Insurance Company
Pilot Insurance Company
Quebec Assurance Company
Royal & Sun Alliance Insurance Company of Canada
Saskatchewan Mutual Insurance Company
Scottish & York Insurance Co. Limited
The Sovereign General Insurance Company
TD General Insurance Company
Temple Insurance Company
Traders General Insurance Company
Travelers Guarantee Company of Canada
Trisura Guarantee Insurance Company
The Wawanesa Mutual Insurance Company
Waterloo Insurance Company

Western Assurance Company
Western Surety Company

2. Provincial Companies

- Surety bonds issued by the following companies may be accepted provided that the contract of suretyship was executed in a province in which the company is licensed to do business as indicated in brackets.
- AXA Boreal Insurance Company (P.E.I., N.B., Que., Ont., Man., B.C.)
AXA Boreal Insurance Company (P.E.I., N.B., Que., Ont., Man., B.C.)
ALPHA, Compagnie d'Assurances Inc. (Que.)
Canada West Insurance Company (Ont., Man., Sask, Alta., B.C., N.W.T.) (Surety only)
The Canadian Union Assurance Company (Que.)
La Capitale General Insurance Inc. (Nfld. & Lab., N.S., P.E.I., Que.(Surety only), Man., Sask., Alta., B.C., Nun., N.W.T., Yuk.)
Coachman Insurance Company (Ont.)
Continental Casualty Company (Nfld. & Lab., N.S., P.E.I., N.B., Que., Ont., Man., Sask., Alta., B.C., Nun., N.W.T., Yuk.)
GCAN Insurance Company (Nfld. & Lab., N.S., P.E.I., N.B., Que., Ont., Man., Sask., Alta., B.C., Nun., N.W.T., Yuk.)
The Insurance Company of Prince Edward Island (N.S., P.E.I., N.B.)
Kingsway General Insurance Company (N.S., N.B., Que., Ont., Man., Sask., Alta., and B.C.)
Liberty Mutual Insurance Company (Nfld. & Lab., N.S., P.E.I., N.B., Que., Ont., Man., Sask., Alta., B.C., Nun., N.W.T., Yuk.)
Manitoba Public Insurance Corporation (Man.)
Norgroupe Assurance Générales Inc.
Orleans General Insurance Company (N.B., Que., Ont.)
Saskatchewan Government Insurance Office (Sask.)
SGI CANADA Insurance Services Ltd. (Ont., Man., Sask., Alta.)
L'Unique General Insurance Inc. (Nfld. & Lab., N.S., P.E.I., N.B., Que.(Surety only), Ont.(Surety only), Man., Sask., Alta., B.C.(Surety only), Nun., N.W.T., Yuk.)

3. Foreign Companies

- Aspen Insurance UK Limited
Compagnie Française d'Assurance pour le Commerce Extérieur (Fidelity only)
Eagle Star Insurance Company Limited
Ecclesiastical Insurance Office Public Limited Company (Fidelity only)
Lloyd's Underwriters
Mitsui Sumitomo Insurance Company, Limited
NIPPONKOA Insurance Company, Limited
Sompo Japan Insurance Inc.
Tokio Marine & Nichido Fire Insurance Co., Ltd.
XL Insurance Company Limited (Surety only)
Zurich Insurance Company Ltd



Articles de convention

Contrat de construction – Articles de convention
(23/01/2002)

- A1 Contrat
- A2 Description des travaux et date d'achèvement
- A3 Prix du contrat
- A4 Adresse de l'entrepreneur
- A5 Tableau des prix unitaires



Articles de convention

Les présents Articles de convention faits en double le jour de

Entre

Sa Majesté la Reine, du chef du Canada (ci-après appelé "Sa Majesté") représentée par le Conseil National recherches du Canada. (ci-après appelé "le Conseil")

Et

(ci-après appelé "l'Entrepreneur")

Font foi que sa Majesté et l'Entrepreneur ont établi entre eux les conventions suivantes:

A1 Contrats (23/01/2002)

- 1.1 Sous réserve des paragraphes A1.4 and A1.5, les documents constituant le contrat passé entre Sa Majesté et l'Entrepreneur (ci-après appelé le Contrat) sont:
 - 1.1.1 les présents Articles de convention;
 - 1.1.2 les documents intitulés "Plans et devis" et annexés aux présentes sous la cote "A";
 - 1.1.3 le document intitulé "Modalités de paiement" et annexé aux présentes sous la cote "B";
 - 1.1.4 le document intitulé, "Conditions générales" et annexé aux présentes sous la cote "C";
 - 1.1.5 le document intitulé, "Conditions de travail" et annexé aux présentes sous la cote "D";
 - 1.1.6 le document intitulé, "Conditions d'assurance" et annexé aux présentes sous la cote "E";
 - 1.1.7 le document intitulé, "Conditions de garantie du contrat" et annexé aux présentes sous la cote "F"; et
 - 1.1.8 toute modification au Contrat en accord avec le Conditions générales.
 - 1.1.9 le document intitulé "Échelles de juste salaire pour les contrats fédéraux de construction", désigné dans le présent document par l'appellation "Échelles de justes salaires".



Articles de Convention

- 1.2 Le Conseil désigne _____ de SAGI (Services administratifs et gestion de l'immobilier du CNRC, du gouvernement du Canada, Ingénieur aux fins du Contrat et à toute fin, y compris aux fins accessoires, l'adresse de l'Ingénieur est réputée être:

1.3 **Dans le Contrat**

- 1.3.1 "Entente à prix fixe" désigne la partie du Contrat où il est stipulé qu'un paiement global sera fait en contrepartie de l'exécution des travaux auxquels elle se rapporte; et
- 1.3.2 "Entente à prix unitaire" désigne la partie du Contrat où il est stipulé que le produit d'un prix multiplié par un nombre d'unité de mesurage d'une catégorie sera versé à titre de paiement pour l'exécution des travaux visés par cette entente.
- 1.4 Toute dispositions du Contrat qui s'applique expressément et seulement à une Entente à prix unitaire ne s'applique à aucune partie des travaux qui relève de l' Entente à prix fixe.
- 1.5 Toute dispositions du Contrat qui s'applique expressément et seulement à une Entente à prix fixe ne s'applique à aucune partie des travaux qui relève de l' Entente à prix Unitaire.

A2 Description des travaux et date d'achèvement
(23/01/2002)

- 2.1 Entre la date des presentes Articles de convention et le _____ jour de _____, l'Entrepreneur exécute, avec soin et selon le règles de l'art, à l'endroit et de la manière indiquées, les travaux suivants,

plus particulièrement décrits dans les Plans et devis.



Articles de Convention

A3 Prix du marché

(23/01/2002)

3.1 Sous réserve de toute addition, soustraction, déduction, réduction ou compensation prévue en vertu du Contrat, Sa Majesté, aux dates et de la manière énoncées ou mentionnées dans les Modalités de paiement, paie à l'Entrepreneur:

3.1.1 la somme de \$ (TPS/TVH en sus), en considération et l'exécution des travaux ou des parties de travaux à laquelle s'applique l'Entente à prix fixe, et

3.1.2 une somme égale à l'ensemble des produits du nombre d'unités de mesurage de chaque catégorie de travail, d'outillage ou de matériaux indiqué dans le Certificat définitif de mesurage mentionné ou paragraphe CG44.8, ce nombre d'unités étant multiplié selon le cas par le prix de chaque unité indiquée dans le Tableau des prix unitaires relativement à l'exécution des travaux ou des parties de travaux qui ont fait l'objet d'une Entente à prix unitaire.

3.2 Pour le gouverne de l' Entrepreneur et des personnes chargées de l'exécution du Contrat au nom de sa Majesté, mais sans toutefois comporter une garantie ou un engagement de quelque nature de la part de l'une ou l'autre partie, il est estimé que la somme totale payable par Sa Majesté à l'Entrepreneur pour la partie des travaux qui a fait l'objet d'une Entente à prix unitaire, sera d'environ N/A \$

3.3 L'alinéa A3.1.1 ne s'applique qu'à une Entente à prix fixe.

3.4 L'alinéa A3.1.2 et le paragraphe A3.2 ne s'appliquent qu'à une Entente à prix unitaire.

A4 Adresse de L'Entrepreneur

(23/01/2002)

4.1 Aux fins du Contract, y compris les fins accessoires, l'adresse de l'Entrepreneur est réputé être:



Articles de Convention

A5 Tableau des prix unitaires (23/01/2002)

5.1 Il est convenu entre Sa Majesté et l'Entrepreneur que le tableau ci-après est le Tableau des prix unitaires pour le Contrat:

Colonne 1 Postes	Colonne 2 Catégorie de travail outillage ou de matériaux	Colonne 3 Unité de mesurage	Colonne 4 Quantité totale estimative	Colonne 5 Prix unitaire	Colonne 6 Prix total estimatif
		N/A			

5.2 Le Tableau des prix unitaires présenté au paragraphe A5.1 décrit la partie des travaux visée par l'Entente à prix unitaire.

5.3 La partie des travaux qui n'est pas décrite dans le Tableau des prix unitaires mentionné au paragraphe A5.2 est la partie des travaux visée par l'Entente à prix fixe.



Articles de Convention

Signé au nom de Sa Majesté par

Marc Bédard

en tant que agent supérieur de contrats

et _____

en tant que _____

du Conseil national de recherches Canada

le

jour de _____

Signé, scellé et signifié par

en tant que _____ et
emploi

par _____

en tant que _____
emploi

de
entrepreneur

le _____

jour de _____

Sceau

Division 01 – General Requirements

00 10 00 General Instructions
00 15 45 General Safety and Fire Requirements

31 23 33 Excavation Trenching and Backfilling
33 11 16 Site Water Utility Distribution Piping

Drawing Set C001, C002 C003

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1. DEFINITION OF TERMS

- .1 Unless otherwise specified, the obligations of this contract are assumed by the contractor.
- .2 The word "Provide" indicated in this specification means to supply and install.
- .3 For the purpose of this document "Departmental Representative" will be deemed as the NRC person in charge of the project or his delegated representative. WSP shall act as NRC's delegated Departmental Representative and Engineer on this project.

2. SITE VISITS FOR TENDER PURPOSE

- .1 All parties tendering must view the site with the Departmental Representative and attend the site meeting. No site visit will be arranged for contractors who missed the initial site visit and their tenders will not be opened.
- .2 The bidding contractors staff who have attended the site visit will sign off a mandatory attendance sheet.

3. LABOUR CONDITIONS AND FAIR WAGE SCHEDULE

- .1 Comply with all labour conditions as specified by the Human Resources Development Canada, Labour Program. See Labour Conditions and Fair Wage Schedule if applicable. The contractor is responsible to ensure that all work is carried out in conformance with the applicable Provincial Occupational Health and Safety Act and Regulations and the applicable NRC policies and procedures.
- .2 Submit to the Departmental Representative, when required, all necessary permits and approvals.

4. MINIMUM STANDARDS

- .1 Conform to or exceed minimum acceptable standards of the various applicable federal, provincial and municipal codes including without limitation, the National Building Code, The National Fire Code, Canadian Plumbing Code and the Canadian Electrical Code.
- .2 Work to conform to the latest referenced standards and codes specified in the contract documents.

5. MATERIALS AND WORKMANSHIP

- .1 Install only new materials on this project unless otherwise specified.
- .2 Only first class workmanship will be accepted, not only with regard to safety, efficiency and durability but also with regard to neatness of detail and performance.

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- .3 Workmanship shall be best quality, executed by workers experienced and skilled in the trades for which they are employed by the contractor. If the contractor is also obliged to immediately notify the Departmental Representative if required work is such as to make it impractical or unsafe to produce the expected results.
- .4 Do not employ unfit persons or anyone unskilled in their required duties.
- .5 Decisions as to quality or fitness of workmanship shall rest solely with the Departmental Representative whose decision is final.

6. WORKING HOURS AND SECURITY

- .1 Normal working hours on the NRC property are from 8:00 a.m. until 4:30 PM, Monday to Friday inclusive except statutory holidays, NRC's December shut-down period and Federal Government holidays.
- .2 At all times, NRC issued passes are required for access to the building site.
- .3 Obtain permission from the Departmental Representative to perform the specific tasks before scheduling any work outside normal working hours.
- .4 An escort may be required whenever working outside normal hours. The contractor is to bear the associated costs.
- .5 Dominion Astrophysical Observatory is essentially a 24/7 operation however peak periods are as indicated, Monday to Friday 8:00 am to 4:30 pm.

7. BILINGUALISM

- .1 Ensure that all signage, notices and labels are provided and installed in both official languages.
- .2 Ensure that all identification of installed services called for by this contract are bilingual.

8. WORK & MATERIALS SUPPLIED BY OWNER

- .1 Work and materials to be supplied by NRC are identified on drawings and in the specification.
- .2 Deliver to a storage place, as directed by the Departmental Representative, all materials to be returned to the owner.
- .3 Unless otherwise specified, accept owner-supplied materials at their storage location and provide all additional transportation as required to the specific work site.
- .4 Contractor's duties:
 - .1 Unload at site.
 - .2 Handle materials at site, including uncrating and storage.

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- .3 Promptly inspect products and report damaged or defective items to the Departmental Representative.
- .4 Give written notification to the Departmental Representative for items accepted in good order.
- .5 Repair or replace as instructed by the Departmental Representative items damaged on site.
- .6 Install and connect finished products as specified.

9. SUB-TRADES

- .1 Submit no later than 72 hours after acceptance of tender, a complete list of sub-trades for the Departmental Representative's review.

10. SCHEDULE

- .1 Prepare a detailed schedule, fixing the date for commencement and completion of the various sections of the work and update the schedule. The schedule shall be made available to the Departmental Representative not later than two weeks after the award of the contract and prior to commencement of any work on site.
- .2 Notify the Departmental Representative in writing of any proposed changes in schedule and obtain the approval of the Departmental Representative prior to implementing any changes.
- .3 Arrange three (3) days before the scheduled completion date to do an interim inspection with the Departmental Representative.
- .4 Time is of the essence. During construction there will not be a supply for the fire suppression water storage tank. Contractor must work diligently and continuously to reinstate the water service as per approved schedule.

11. COST BREAKDOWN

- .1 Submit, for approval by the Departmental Representative, a cost breakdown of tender before submitting the first request for progress payment.
- .2 Use the approved cost breakdown as the basis for submitting all claims.
- .3 Request Departmental Representative's verbal approval to amount of claim prior to preparing and submitting the claim noting the approval date of the Departmental Representative.

12. CO-OPERATION

- .1 Co-operate with the Departmental Representative and designated NRC staff in order to keep disruption of normal research work to an absolute minimum.

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- .2 Work out in advance a proposed schedule for all work which might disrupt normal work in the building.
- .3 Have schedule approved by the Departmental Representative.
- .4 Notify the Departmental Representative in writing, 48 hours prior to any intended interruption of facilities, areas, corridors, mechanical or electrical services and obtain requisite permission.
- .5 Refer to article No.21 "Service Interruptions."

13. GENERAL REVIEW

- .1 Periodic review of the contractor's work by the Departmental Representative(s) using the criteria of the contract document does not relieve the contractor of his safety responsibilities and the responsibility of carrying out the work in accordance with the contract. The contractor shall carry out his own quality control to ensure that the construction work is completed safely and in accordance with the contract and will also ensure his sub-contractor's do their work safely.

14. INSPECTION OF BURIED OR CONCEALED SERVICE

- .1 Prior to burying or concealing any services that are to be installed, the contractor is to ensure that all inspection bodies having jurisdiction, including NRC, have inspected the work, and have witnessed all tests. Failure to do so may result in exposing the services again at the contractor's expense. The contractor is to provide to the Departmental Representative a copy of a drawing detailing what was buried or concealed as well as all inspection reports from the inspection bodies having jurisdiction or interest including NRC as owner.

15. TESTING

- .1 On completion, and/or during progress of the work and before any services are covered up and flushing is complete, test all installations in the presence of the Departmental Representative and/or Inspectors having jurisdiction.
- .2 Obtain and provide to the Departmental Representative all acceptance certificates and/or reports from the authority having jurisdiction. The project will be considered incomplete without their provision.

16. DOCUMENTS REQUIRED AT WORK SITE

- .1 Maintain at the work site, one copy each of the following:
 - .1 Contract drawings
 - .2 Specifications
 - .3 Addenda
 - .4 Reviewed shop drawings

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- .5 Change orders
- .6 Other modifications to contract
- .7 Field test reports
- .8 Copy of approved work schedule
- .9 Manufacturer's instructions
- .10 Signed off service interruption requests
- .11 At least one (1) copy of such specifications and drawings shall be marked by the contractor to show all work "As Built" and shall be provided to the Departmental Representative with the Application for Payment and the final Certificate of Completion.

17. PROJECT MEETINGS

- .1 The Departmental Representative will set times for project meetings and assume responsibility for recording and distributing minutes.
- .2 The Departmental Representative will notify all parties concerned of meetings to ensure the proper coordination and to address safety problems with respect to the contractor's safety obligation specified in the contract.
- .3 Attend regular and/or special project meetings at times and locations arranged by the Departmental Representative. The contractor must advise the Departmental Representative if there is a need for any additional meetings, to ensure proper coordination of work due to changing circumstances or observed safety concerns.
- .4 The contractor must attend a pre-work orientation/project meeting prior to commencing any work on site. Departmental Representative to coordinate.

18. SHOP DRAWINGS

- .1 Submit to the Departmental Representative for review within one (1) week after contract award, shop drawings, product data and samples specified.
- .2 Submit 5 copies of all shop drawings, product data and samples for review, unless otherwise specified.
- .3 Review, sign and date shop drawings, data sheets and samples prior to submission.
- .4 Confirmation of corresponding delivery dates are required within one (1) week after shop drawings, product data and samples are approved. Notify the Departmental Representative in writing of any changes to a shop drawing schedule.
- .5 Review of shop drawings and product data by the Departmental Representative does not relieve the contractor of the responsibility for checking for errors and omissions and for the conformity with contract documents. Any discrepancy, error or omission which could affect the safe commission of the work must be brought to the attention of the Departmental Representative and resolved prior to commencement of the work.

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19. SUBMITTALS

.1 The following submittals are required within two weeks of contract award. (also refer to requirements of Excavating, Trenching and Backfilling Section 21 23 33.01 and Site Water Utility Distribution Piping Section 33 11 16)

.1 Water Works Plan and Schedule (in accordance with section 33 11 16)

.2 Traffic control Plan

.3 Construction Equipment List

.4 Siltation Management Plan

.5 Dewatering Methods

.6 Spill Response Plan

.7 Waste Management Plan

.2 The following submittals are required 2 weeks prior to beginning work.

.1 Underground Utility Locates

.2 Bedding Materials source and testing report

.3 At completion of the work and prior to final payment provide the following.

.1 Close out Submittals in accordance with Section 33 11 16.

.2 Marked up As-Built Drawings (also see para 41. AS BUILT DRAWINGS)

.3 Provide maintenance Manual submittals as per para 40. and in accordance with Section 33 11 16 .

20. MANUFACTURER'S INSTRUCTIONS

.1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.

.2 Notify the Departmental Representative in writing of any conflict between these specifications and the manufacturer's instructions. The Departmental Representative will designate which document is to be followed and provide an explanation for the choice made.

21. SERVICE INTERRUPTIONS

.1 NRC as owner will carry out all service interruptions, including isolation of services such as electrical, water, gas, pneumatic and hydraulic systems.

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- .2 Do not commence work or enter the immediate work area until advised in writing by the Departmental Representative that all energy sources have been isolated and the contractor must counter sign and return the notice to the Departmental Representative.
- .3 NRC, as owner, is responsible for restoring all services interrupted as identified in article 21.1.
- .4 Provide 48 hours notice and obtain the approval of the Departmental Representative prior to cutting into any existing service.
- .5 All service interruptions are to be of minimum duration and as agreed to by the Departmental Representative.
- .6 Protect existing services and immediately make repairs to the satisfaction of the Departmental Representative if damage occurs.
- .7 Provide, with the prior approval of the Departmental Representative, detours, bridges or alternate feeds as required to minimize disruptions.
- .8 The contractor may be required to plan in advance and perform specified work approved by the Departmental Representative in order to minimize disruption and service interruption. **Costs for work required after normal working hours or on weekends shall be borne by the contractor.**

NOTE: As the site must remain operational during the work it is important to plan work for the maximum allowed shutdown period as noted in Section 33 11 16. Longer shutdowns may be made available after normal working hours however this will be at the discretion of the Departmental Authority and are not guaranteed.

22. PROTECTION AND WARNING NOTICES

- .1 Provide all materials required to protect existing equipment.
- .2 Erect dust barriers to prevent dust and debris from spreading through the building.
- .3 Place dust protection in the form of cover sheets over equipment and tape these sheets to the floors to limit dust infiltration as much as practicable.
- .4 Repair or replace any and all damage to the Owner's property caused during construction, at no cost to the Owner and to the satisfaction of the Departmental Representative.
- .5 Plan and coordinate the work with the Departmental Representative in order to protect the buildings, roads, lawns, services, facilities, and other equipment from damage which might occur as a result of this work.
- .6 Ensure that all doors, windows or temporary enclosures that could allow transfer of dust, noise and fumes to other areas of the building are kept closed.

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- .7 Secure the working area at the end of each day's work and be responsible for the same to the satisfaction of the Departmental Representative.
- .8 Provide and maintain adequate safety barricades around the work sites to protect NRC personnel and others having access from injury during the carrying out of work.
- .9 Post safety warnings in all instances where possible injury could occur such as in overhead work and where hard hats are to be worn or as required by the applicable Provincial Occupational Health and Safety Act and Regulations or as otherwise required by the Departmental Representative.
- .10 Provide temporary protective enclosures at building entrances and exits to protect NRC personnel and others having access from injury. All enclosures are to be structurally sound against weather and falling debris.

23. FASTENING DEVICES

- .1 Do not use explosive actuated tools, without obtaining written permission from the Departmental Representative.
- .2 Comply with the requirements of CSA-A-166 (Safety Code for Explosive Actuated Tools).
- .3 Do not use any kind of impact or percussion tool without first obtaining written permission from the Departmental Representative

24. DISCREPANCIES & INTERFERENCES

- .1 Before tender closing, and during execution of the work, examine drawings and specifications and report at once to the Departmental Representative any defects, discrepancies, omissions or interferences affecting the work.
- .2 Provide items mentioned in both the drawings and/or the specifications.
- .3 Immediately inform the Departmental Representative in writing of any discrepancies between the plans and the physical conditions so that the Departmental Representative may promptly verify same and decide on remediation or correction.
- .4 Any unauthorized work done after such a discovery, and before the owner has decided on remediation or correction is at the contractor's risk.
- .5 Where unexpected interferences are encountered on the job and they have not been pointed out on the original tender or on the plans and specifications, the contractor is to provide offsets, bends or reroute the services to suit job conditions at no extra cost.
- .6 Arrange in consultation with the Departmental Representative all work so as not to interfere in any way with other work being carried out.
- .7 Commencement of work will imply an acceptance of existing conditions.

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- .8 Should there be any conflict between this section and the technical specifications or drawings the most stringent requirement shall apply.

25. ACCEPTANCE OF SITE

- .1 Inspect the site before commencing work, review and discuss any unexpected conditions with the Departmental Representative who will be present during this review.
- .2 Commencement of work by the contractor will imply acceptance of existing conditions.

26. PARTIAL OCCUPANCY

- .1 NRC will require partial occupancy of the three pump house facilities due to the services installed there. The Departmental Representative will consult with the contractor regarding safety and other requirements for joint occupancy. The contractor shall provide access for NRC to these services.
- .2 The contractor must resolve space conflict with other sub-contractors.
- .3 Throughout the course of construction, the contractor is to remain informed of field conditions and the safety of the work performed by all sub-contractors involved in the project.

27. USE OF SITE

- .1 Restrict operations on site to the areas approved by the Departmental Representative at the time of tendering or as later approved by the Departmental Representative.
- .2 Locate all temporary structures, equipment or materials for storage to the designated areas.
- .3 Park only in designated areas.
- .4 Do not restrict access to the building routes and services.
- .5 Repair any damage and clean up dirt or debris resulting from both the contractor's and his sub-contractor's use of the existing roads.

28. CONSTRUCTION FACILITIES AND TEMPORARY SERVICES

- .1 Installation/Removal
- .1 Provide construction facilities and temporary controls in order to execute work expeditiously.
- .2 Provide, at no cost to NRC, all equipment and temporary lines to bring these services to the work site.
- .3 Remove from the site all temporary facilities/services after use.

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- .4 Comply with NRC requirements when connecting existing systems as approved by the Departmental Representative in accordance with articles entitled “Co-operation” and “Service Interruption” of this section.
- .2 Site Storage/Loading
 - .1 Confine the work and activities of employees to limits indicated by contract documents approved by the Departmental Representative.
 - .2 Do not unreasonably encumber buildings on site with equipment or materials.
 - .3 Do not load or permit to be loaded any part of the work with a weight or force that will endanger the work.
- .3 Sanitary Facilities
 - .1 No Sanitary facilities are available on site. Contractor to provide his own portable facilities to be located as directed by the Departmental Representative.
 - .2 Maintain facilities and area surrounding them clean at all times.
- .4 Water Supply
 - .1 NRC will provide a continuous supply of potable water for construction use.
 - .2 Arrange for service and water connection with the Departmental Representative and pay the costs for installation, maintenance and removal.
- .5 Temporary Heating and Ventilating
 - .1 Bear the costs of temporary heat and ventilation during construction including costs of installation, operation, including fuel and maintenance and removal of the equipment.
 - .2 Use of direct fired heaters discharging waste products into the work areas will not be permitted unless prior approval is given by the Departmental Representative.
 - .3 Furnish and install temporary heat and ventilation in enclosed areas as required to:
 - .1 Facilitate progress of work.
 - .2 Protect work and products against dampness and cold.
 - .3 Reduce moisture condensation on surfaces to a level satisfactory to the Departmental Representative.
 - .4 Provide ambient temperature and humidity levels for storage, installation and curing of materials.
 - .5 Provide adequate ventilation to meet provincial and municipal health regulations for a safe working environment for those areas solely occupied by the contractor’s workers.
 - .6 Where ventilation and heat also affects areas being utilized by the Owner’s employees the contractor will consult with the Departmental Representative on ventilation, heating and humidity requirements.
 - .4 Maintain minimum temperature of 10°C (or higher where specified) as soon as finishing work is commenced and maintain this temperature until acceptance of the structure by the Departmental Representative.

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- .1 Maintain ambient temperature and humidity levels as required for comfort of NRC personnel.
- .5 Prevent hazardous or unhealthy accumulations of dust, fumes, mists, or gases in areas occupied during construction including storage areas and sanitary facilities.
 - .1 Dispose of exhaust materials in a manner that will not result in a harmful or unhealthy exposure to the contractor's workers or the Owner's Employees.
- .6 Maintain strict supervision over the operation of temporary heating and ventilating equipment.
 - .1 Enforce conformance with applicable codes and standards.
 - .2 Comply with the Departmental Representative's instructions and those of NRC's "Safety and Fire Prevention Officer" brought to the attention of the contractor by the Departmental Representative, including provision of full-time watchman services when directed.
 - .3 Enforce safe practices.
- .7 After award of contract, the Contractor may be permitted use of the existing building systems providing agreement can be reached on:
 - .1 Conditions of use, special equipment, protection and maintenance and replacement of filters.
 - .2 Methods of ensuring that heating medium will not be wasted and in the case of steam, agreement on that is to be done with the condensate.
 - .3 Saving on contract price;
 - .4 Provisions relating to guarantees on equipment.
 - .5
- .6 Temporary Power
 - .1 Provide all temporary power required during construction for temporary lighting and operating of power tools. If the power requirements are 15A, 125V, then the contractor may use an existing 15A outlet if one is available and only after receiving the Departmental Representative's approval.
 - .2 All connections must be in accordance with the current edition of the Canadian Electrical Code.
- .7 Temporary Telephone
 - .1 Provide and pay for temporary telephones necessary for own use.
- .8 Project Cleanliness
 - .1 Maintain the work site adjacent areas including roofs in a tidy condition, free from accumulation of waste products and debris.
 - .2 Remove waste material and debris from the site at the end of each working day.
 - .3 Provide onsite dump containers for collection of waste materials and rubbish at the contractor's expense. Location of dump containers is to be approved by the Departmental Representative.

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- .4 Clean interior areas prior to start of finish work and maintain areas free of dust and other contaminants during finishing operations.

29. ENVIRONMENTAL

- .1 DAOV is home to Species at Risk. These include various species of Flora and Fauna. In particular the Sharp Tailed Snake and the Blue Grey Tail-Dropper Slug may be encountered during this work.

.1 The contractor shall be briefed during a mandatory pre-construction project meeting regarding these above mentioned species.

.2 It is unlikely that either species will be encountered at this work location however should the contractor encounter either species during their work, they shall stop work immediately and contact the Departmental Representative. Do not handle, touch or relocate the species.

- .2 Ensure that all construction equipment is in good working order and careful maintenance and monitoring of all equipment is carried out to minimize the risk of spills or leaks of petroleum-based products. Contractor will prepare an emergency response plan to control any fuel spills, which will include having on site appropriate spill response equipment readily available for immediate deployment. All spills and releases must be reported to the Departmental Representative and all applicable spills to the federal, provincial, or territorial government departments having jurisdiction.. The emergency response plan must include the appropriate phone number for reporting releases in the area as well as phone numbers for local authorities (Police or Fire departments) and relevant NRC personnel.(also see submittals).

30. STORAGE

- .1 Provide storage as required to protect all tools or materials from damage or theft and be responsible for the same.
- .2 Do not store flammable or explosive materials on site without the authorization of the Departmental Representative.

31. ENCLOSURE OF STRUCTURES

- .1 Construct and maintain all temporary enclosures to protect foundations, sub-soil, concrete masonry from frost penetration or damage.
- .2 Maintain all temporary structures in place until all chances of damage are over and proper curing has taken place.
- .3 Provide temporary weather tight enclosures for exterior openings until permanent sash and glazing and exterior doors are installed.
- .4 Provide lockable enclosures as required to maintain the security of NRC facilities and be responsible for the same. The NRC Security Officer may, at the discretion of the

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Departmental Representative, be called upon to advise or approve of any temporary security measure.

- .5 Provide keys to the Departmental Representative for distribution to the NRC Security Officer and M-1 Commissionaire when required.

32. LAYOUT OF WORK

- .1 Lay out the work carefully and accurately.
- .2 Verify all dimensions and be responsible for resolving any discrepancies with the Departmental Representative.
- .3 Locate and preserve general reference points.
- .4 Employ competent person(s) to lay out work in accordance with control lines and grades provided by the Departmental Representative.

33. CUTTING AND PATCHING

- .1 Cut existing surfaces as required to accommodate new work. Obtain written approval from the Departmental Representative before cutting and openings through existing or new structural surfaces.
- .2 Remove all items to the Departmental Representative's satisfaction.
- .3 Patch, repair and make good to the Departmental Representative's satisfaction; with identical materials as required, the surfaces that have been disturbed, cut or damaged.
- .4 Core drill and opening where new pipes are to pass through existing construction. Openings are to be sized to leave 12mm clearance around the pipes or pipe insulation. Do not drill or cut any surface without the approval of the Departmental Representative.
- .5 Seal all openings where cables, conduits or pipes pass through walls with an acoustic sealant conforming to CAN/CHSB-19.21-M87, or latest edition or as specified.
- .6 Where cables, conduits and pipes pass through fire rated walls and floors, pack space between with compressed glass fiber and seal with a fireproof caulking in accordance with CAN/CHSB-19.13-M87 and NBC 3.1.7, or latest editions.

34. LOCATION OF EQUIPMENT AND FIXTURES

- .1 Location of equipment, fixtures, outlets and openings indicated or specified are to be considered as approximate.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with the Owner's and manufacturer's recommendations for safety, access and maintenance.

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- .3 Inform the Departmental Representative of any impediments to the installation and obtain his approval for actual location.
- .4 Submit field drawings to indicate the relative position of installed services and equipment.

35. EXISTING SERVICES

- .1 Where work involves breaking into or connecting to existing services, carry out work at times and in the manner agreed to by the Departmental Representative and by authorities having jurisdiction, with minimum of disturbance to NRC Personnel and vehicular traffic.
- .2 Before commencing work, establish location and extent of service lines in area of work and notify Departmental Representative of findings.
- .3 Submit a schedule to and obtain approval from the Departmental Representative for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to the Departmental Representative.
- .4 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .5 Remove abandoned service lines within two meters of structures. Cap or otherwise seal lines at cut-off points as approved by the Departmental Representative
- .6 Record and provide a copy to the Departmental Representative of locations of maintained, re-routed and abandoned service lines.

36. ALTERATIONS ADDITIONS OR REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to the Owner's employees and others having access. Arrange with the Departmental Representative to facilitate execution of work.
- .2 Where security will be reduced by the work of this contract, provide temporary means to maintain security at a level agreed to by the Departmental Representative.
- .3 Where elevators, dumbwaiters or conveyors exist in the building, only those assigned for contractor's use may be used for moving personnel and material. Protect walls of passenger elevators. The contractor is to accept liability for damage, safety of equipment and overloading of existing equipment.
- .4 Provide temporary dust screens, barriers, warning signs in locations where renovation and alteration work is adjacent to areas used by the public or NRC Personnel.

37. FINAL CLEAN-UP

- .1 Upon completion of work do a final cleaning to the satisfaction of the Departmental Representative.

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- .2 Clean all surfaces, lights, affected by this work.

38. DISPOSAL OF WASTES

- .1 Arrange for the disposal of waste materials including volatiles, safely off NRC property. Refer to Section 01545, the section titled "General Safety and Fire Requirements".

39. RECTIFICATION OF DEFECTS

- .1 Refer to General Conditions "B", article 25.
- .2 Ensure that all manufacturer's guarantees and warranties are issued in the name of the contractor and the National Research Council.

40. MAINTENANCE MANUAL

- .1 Provide three (3) copies of maintenance manuals immediately upon completion of the work and prior to release of final payment.
- .2 Manuals are to be neatly bound in hard cover loose leaf binders.
- .3 Manuals are to include operating and maintenance instructions, all guarantees and warranties, shop drawings or technical data for the services, materials and apparatus supplies under this contract.

41. AS BUILT DRAWINGS

- .1 Contractor to maintain and provide at completion of the work, one clean, legible, marked-up in red, copy of the plan indicating final installation locations and/or variance to design.

42. SECURITY

- .1 All staff of the successful contractor must obtain Government of Canada Reliability Status Security or be escorted one to one by a security cleared employee of the contractor before working on site in accordance with Appendix A-1.

43. IDENTIFICATION BADGES

- .1 Display of NRC identification badges is mandatory in NRC buildings.
- .2 Obtain all badges from the NRC Security office.

END OF SECTION

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2. Minimum Standard
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1. RELATED SECTIONS TO SAFETY

- .1 General Instructions, Section 001000 refer to the articles titled:

- .1 Inspection of Buried or Concealed Services
- .2 Testing
- .3 Shop Drawing
- .4 Service Interruptions
- .5 Protection and Warning Notices
- .6 Fastening Devices
- .7 Partial Occupancy
- .8 Use of Site

2. MINIMUM STANDARDS

- .1 Conform to or exceed minimum acceptable standards of the various applicable Federal, Provincial and Municipal codes including the National Building Code, The National Fire Code, Canadian Plumbing Code and the Canadian Electrical Code.
- .2 Work is to conform to referenced standards and codes as reaffirmed or revised to date of specification.

3. GENERAL REVIEW

- .1 Periodic review of the contractor's work by the Departmental Representative, using the criteria of the contract document, does not relieve the contractor of safety responsibilities both provincial and those required by NRC and the responsibility of carrying out the work in accordance with contract documents. The contractor shall carry out his own quality control to ensure that the construction work is completed safely and in accordance with the contract documents.

4. CONSTRUCTION SAFETY

- .1 Be solely responsible for the construction safety of both its employees and those of the sub-contractors at the site of work, and for initiating, maintaining and supervising all safety precautions and programs and procedures in connection with the performance of the work. The contractor will consult with the Departmental Representative as needed to ensure this responsibility is fully carried out.
- .2 Observe all applicable construction safety measures of the National Building Code Part 8; Canadian Code for Construction Safety; the applicable Provincial Occupational Health and Safety Act and Regulations and Municipal authorities having jurisdiction with the provision that in any case of conflict or discrepancy the more stringent requirements shall apply.
- .3 Advise all parties having jurisdiction including the Departmental Representative and, Provincial Inspectors of the need for inspection/certification of the work.
- .4 Comply with the requirements of the Fire Commissioner of Canada, as published in standards Nos. 301 and 302. The Fire Commissioner of Canada, Human Resources Development and Canada Labour Programs is the regulatory authority for fire safety at

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NRC. The contractor will therefore abide by his directions as well as the provincial Fire Safety Regulations.

- .5 The Departmental Representative will advise the contractor of NRC specific fire safety requirements and monitor for compliance.

5. WORKPLACE HAZARDOUS MATERIAL INFORMATION SYSTEM WHMIS

- .1 Comply with Provincial legislation regarding WHMIS. The contractor's responsibilities include, but are not limited to the following:
- .1 To ensure that any WHMIS Controlled Products brought on site by the contractor or sub-contractor are labelled to WHMIS standards.
 - .2 For WHMIS Controlled Products make readily available to workers and the Departmental Representative, Material Safety Data sheets (MSDS).
 - .3 To train own workers about WHMIS and about the controlled products that they use on site.
 - .4 To inform when asked other contractors, sub-contractors, the Departmental Representative, authorized visitors and outside inspection agency personnel about the presence and use of such products on the site.
 - .5 Demonstrate to the satisfaction of the Departmental Representative, that the Contractor's foreman has had WHMIS training and is knowledgeable in its requirements. The Departmental Representative can require replacement of this person if this condition or compliance to WHMIS practices are not satisfactory, as stated herein.

6. NO SMOKING ON SITE

- .1 Smoking is prohibited on all locations on Observatory Hill. Contractor staff must leave the NRC property to smoke. Note: Wildfire is our greatest hazard threat.
- .2 Obey all "No Smoking" signs on the NRC premises.

7. HOT WORK

- .1 Permit:
- .1 Obtain a Hot Work Permit from the Departmental Representative prior to commencement of any work involving welding, soldering, burning, heating, use of torches or salamanders or any open flame ("Hot Work").
- .2 Site Review:
- .1 Review the location of "Hot Work" with the Departmental Representative to determine the level of fire safety precautions to be taken prior to commencement of "Hot Work".

8. REPORTING FIRES

- .1 Determine, prior to the commencement of work, the exact location of the nearest fire alarm pull station, and telephone the emergency phone number for reporting fires.
- .2 Report all fires immediately, to the Departmental Representative or his substitute.

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- .1 Activate nearest fire alarm pull station and;
- .2 Telephone the emergency phone number provided by the Departmental Representative or his substitute.
- .3 When reporting a fire by phone, give where practicable the location of fire, the nature of and extent of the fire.
- .4 The person activating the fire alarm pull station or reporting a fire by phone must remain at a safe distance from the fire but readily available to provide information on the location and nature of the fire to the fire department personnel and the Departmental Representative.
- .5 During Fire calls do not block the access road or drive vehicles down the hill on the road as it may interfere with responding emergency vehicle access.

9. INTERIOR AND EXTERIOR FIRE PROTECTION & ALARM SYSTEMS

- .1 Do not obstruct or shut off fire protection equipment or alarm systems without prior authorization from the Departmental Representative.
- .2 When any fire protection equipment is temporarily shut down, alternative measures as prescribed by the Departmental Representative shall be taken to ensure that fire protection is maintained.
- .3 Do not leave fire protection or alarm systems inactive at the end of a working day without notification and authorization from the Departmental Representative. The Departmental Representative will advise the NRC Safety and Fire Prevention Officer and the building co-ordinator of the details of any such event.
- .4 Do not use fire hydrants, standpipes and hose systems for other than fire fighting purposes unless authorized to do so by the Departmental Representative.

10. FIRE EXTINGUISHERS

- .1 Provide a minimum of 1-10 lb. ABC Dry Chemical Fire Extinguisher or additional units as advised by the Departmental Representative for every Hot Work operation.
- .2 Provide a minimum of 1-5 lb. ABC Dry Chemical Fire Extinguisher or additional units as advised by the Departmental Representative in every vehicle or equipment on site.
- .3 Provide fire extinguishers equipped as below:
 - .1 Pinned and sealed;
 - .2 With a pressure gauge;
 - .3 With an extinguisher tag signed by a fire extinguisher servicing company indicating the satisfactory condition of the unit.
- .4 Carbon Dioxide (CO₂) extinguishers will not be considered as acceptable substitutes for the above.

11. OBSTRUCT. OF ACCESS/EGRESS ROUTES-ROADWAYS

- .1 Road Access shall be maintained at all times for emergency vehicle response access.

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- .2 Discuss with and obtain written approval from the Departmental Representative for any work that may impede the response of an emergency response vehicle. This includes violation of minimum overhead clearance, erecting of barricades and the digging of trenches.
- .3 The Departmental Representative will advise the NRC Safety and Fire Prevention Officer and the Chief Building Fire Emergency Officer of any exit route obstruction that may warrant advanced planning and communication to building occupants and to the fire department.

12. RUBBISH AND WASTE MATERIALS

- .1 Keep volumes of rubbish and waste materials as low as possible.
- .2 Do not burn rubbish on site.
- .3 Removal:
 - .1 Remove all rubbish from work site at the end of the work day or shift and place it in a dumpster, or as otherwise directed by the Departmental Representative.
- .4 Storage:
 - .1 Exercise extreme care when storing combustible waste materials in work areas. Ensure maximum possible order, adequate ventilation and all safety standards are adhered to when storing any combustible materials. When in doubt, consult with the Departmental Representative.
 - .2 Deposit greasy or oily rags or materials subject to spontaneous combustion in CSA or ULC approved receptacles and remove accumulated wastes on a daily basis.
 - .3 Dumpsters are to be located as per the instructions of the Departmental Representative.

13. FLAMMABLE LIQUIDS

- .1 The handling, storage and use of flammable liquids is governed by the National Fire Code of Canada and the contractor is accepting the work bound by them.
- .2 Flammable liquids such as gasoline, kerosene and naphtha may be kept in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing the ULC seal of approval. Storage of quantities of flammable liquids exceeding 45 litres requires the permission of the Departmental Representative.
- .3 Transfer of flammable liquids is prohibited within buildings except with permission of the Departmental Representative and provided safe bonding practices are followed to protect the contractor's employees, sub-contractors and others having access to NRC facilities.
- .4 Do not transfer flammable liquids in the vicinity of open flames or any type of heat producing device. All transfers must be done using safe bonding practices.
- .5 Do not use flammable liquids having a flash point below 38°C as cleaning agents (examples include gasoline and naphtha).

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- .6 Store used flammable waste liquids meant for disposal in approved ULC containers located in a safe, ventilated area and with the approval of the Departmental Representative. Waste flammable liquids are to be removed from the site on a regular basis or as otherwise advised by the Departmental Representative.
- .7 Assure proper ventilation and eliminate all sources of ignition where flammable liquids, such as lacquers or urethane are used. Inform the Departmental Representative prior to the commencement and completion of such work.

14. QUESTIONS AND/OR CLARIFICATION

- .1 Advise the Departmental Representative of any questions or concerns for clarification on fire and safety practices, in addition to the above requirements prior to the commencement or during work where a safety concern has been noted.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 31 23 33.01 – Excavating Trenching and Backfilling

1.2 REFERENCES

- .1 American National Standards Institute/American Water Works Association (ANSI/AWWA)
 - .1 ANSI/AWWA B300-10, Standard for Hypochlorites.
 - .2 ANSI/AWWA B301-10, Standard for Liquid Chlorine.
 - .3 ANSI/AWWA B303-10, Standard for Sodium Chlorite.
 - .4 ANSI/AWWA C104/A21.4-08, Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
 - .5 ANSI/AWWA C111/A21.11-07, American National Standard for Rubber-Gasket Joints for Ductile-Iron and Fittings.
 - .6 ANSI/AWWA C110/A21.10-08, American National Standard for Ductile-Iron and Gray Iron Fittings for Water.
 - .7 ANSI/AWWA C150/A21.50-08, Standard for Thickness Design of Ductile-Iron Pipe.
 - .8 ANSI/AWWA C151/A21.51-09, Standard for Ductile-Iron Pipe, Centrifugally Cast.
 - .9 ANSI/AWWA C153/A21.53-11, Standard for Ductile-Iron Compact Fittings.
 - .10 ANSI/AWWA C200-05, Standard for Steel Water Pipe - 6 Inch (150 mm) and Larger.
 - .11 ANSI/AWWA C203-08, Standard for Coal Tar Protective Coatings and Linings for Steel Water Pipelines - Enamel and Tape - Hot Applied.
 - .12 ANSI/AWWA C205-07, Standard for Cement-Mortar Protective Lining and Coating for Steel Water Pipe - 4 Inch (100 mm) and Larger - Shop Applied.
 - .13 ANSI/AWWA C206-11, Standard for Field Welding of Steel Water Pipe.
 - .14 ANSI/AWWA C207-07, Standard for Steel Pipe Flanges for Waterworks Service, 4 Inch through 144 Inch (100 mm through 3,600 mm).
 - .15 ANSI/AWWA C208-07, Standard for Dimensions for Fabricated Steel Water Pipe Fittings.
 - .16 ANSI/AWWA C500-09, Standard for Metal-Seated Gate Valves for Water Supply Service.
 - .17 ANSI/AWWA C504-10, Standard for Rubber-Seated Butterfly Valves.
 - .18 ANSI/AWWA C600-10, Standard for Installation of Ductile-Iron Water Mains, and Their Appurtenances.
 - .19 ANSI/AWWA C602-11, Standard for Cement-Mortar Lining of Water Pipelines - 4 Inch (100 mm) and Larger.

- .20 ANSI/AWWA C651-05, Standard for Disinfecting Water Mains.
- .21 ANSI/AWWA C800-05, Standard for Underground Service Line Valves and Fittings.
- .22 ANSI/AWWA C900-07, Standard for Polyvinyl Chloride (PVC) Pressure Pipe, and Fabricated Fittings, 4 Inch through 12 Inch (100 mm - 300 mm), for Water Transmission and Distribution.
- .2 ASTM International
 - .1 ASTM A53/A53M-10, Standard Specification for Pipe, Steel, Black and Hot Dipped, Zinc Coated, Welded and Seamless.
 - .2 ASTM A123/A123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - .3 ASTM A307-10, Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile.
 - .4 ASTM B88M-05(2011), Standard Specification for Seamless Copper Water Tube Metric.
 - .5 ASTM C117-04, Standard Test Methods for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
 - .6 ASTM C136-06, Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .7 ASTM C478M-11, Standard Specification for Precast Reinforced Concrete Manhole Sections Metric.
 - .8 ASTM D1557-02e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³).
 - .9 ASTM D2620-13, Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings.
 - .10 ASTM D2992-06, Standard Practice for Obtaining Hydrostatic or Pressure Design Basis for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe and Fitting.
 - .11 ASTM D2996-01(2007)e1, Standard Specification for Filament-Wound "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe.
 - .12 ASTM F714-10, Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter.
 - .13 ASTM C618-08a, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 - .14 ASTM A240/A240M, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 - .15 ASTM A182/A182M-11a, Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service.
 - .16 ASTM A380-06, Standard Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems.
 - .17 ASTM A967-05e2, Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts.

- .18
- .19 ASTM A743/A743M-06(2010), Standard Specification for Castings, Iron-Chromium-Nickel, Corrosion Resistant, for General Applications.
- .20
- .21 ASTM 2164-13, Standard Practice for Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure piping Systems Using Hydrostatic Pressure.
- .22 ASTM D3261, Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.
- .3 American Water Works Association (AWWA)/Manual of Practice
 - .1 AWWA M11-2004, Steel Pipe - A Guide for Design and Installation.
 - .2 ANSI/AWWA C220-07, Stainless-Steel Pipe, 1/2 In. (13mm) and Larger.
 - .3 ANSI/AWWA C226-06, AWWA Standard for Stainless-Steel Fittings for Waterworks Service, Sizes 1/2 In. Through 72 In. (13mm Through 1,800mm).
 - .4 ANSI/AWWA C227-11, AWWA Standard for Bolted, Split-Sleeve Restrained and Nonrestrained Couplings for Plain-End Pipe.
 - .5 ANSI/AWWA C228-08, AWWA Standard for Stainless Steel Pipe Flanges for Water Service-Sizes 2 In. Through 72 In. (50mm Through 1,800mm)
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.
 - .2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.
 - .3 CGSB 41-GP-25M-77, Pipe, Polyethylene, for the Transport of Liquids.
- .5 CSA International
 - .1 CAN/CSA-A3000-08, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
 - .2 CAN/CSA-B137 Series-099, Thermoplastic Pressure Piping Compendium. (Consists of B137.0, B137.1, B137.2, B137.3, B137.4, B137.4.1, B137.5, B137.6, B137.8, B137.9, B137.10, B137.11 and B137.12).
 - .1 CAN/CSA-B137.1-09, Polyethylene Pipe, Tubing, and Fittings for Cold-Water Pressure Services.
 - .2 CAN/CSA-B137.3-09, Rigid Polyvinyl Chloride (PVC) Pipe for Pressure Applications.
 - .3 CSA G30.18-09, Carbon and Steel Bars for Concrete Reinforcement.
- .6 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S543-09, Standard for Internal-Lug, Quick Connect Couplings for Fire Hose.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 00 10 00 General Instructions.
- .2 Work Plan to include details on:

- .1 Temporary potable water facilities:
 - .1 Disinfection procedure for temporary supply line,
 - .2 Operation and maintenance of temporary facility with details on cold weather operation,
- .2 Work sequencing details,
- .3 Flushing, Testing and disinfecting procedures,
- .4 Commissioning and tie-in details.
- .3 HDPE Submittals:
 - .1 Copy of current certificate of qualified butt fusion equipment operator(s) from a recognized training organization.
 - .2 Documentation confirming most recent maintenance schedule and pressure gauge calibration for fusion machine.
- .4 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for distribution piping materials, fittings and valves. Include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Pipe certification to be on pipe.
- .5 Shop Drawings:
 - .1 Submit plans with details including:
 - .1 Prefabricated sections with field connection points.
 - .2 Branch connections,
 - .3 Pipe supports.
- .6 Samples:
 - .1 Inform Departmental Representative of proposed source of bedding materials and 2 weeks prior to commencing work.
 - .2 Submit for testing report (gradation curve) of proposed bedding materials 2 weeks minimum prior to beginning work
 - .3 Submit manufacturer's test data and certification that pipe materials meet requirements of this section 3 weeks minimum prior to beginning work. Include manufacturer's drawings, information and shop drawings where pertinent.
 - .4 Submit manufacturer's test data and certification that valves and fittings meet requirements of this section 3 weeks minimum prior to beginning work. Include manufacturer's drawings, information and shop drawings where pertinent.

1.4 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 HDPE Fusing Technicians:
 - .1 To hold current certificate of qualifications for butt fusion equipment from a recognized training organization.

- .2 Welders:
 - .1 Welding qualifications in accordance with CSA B51.
 - .2 Use qualified and licensed welders possessing certificate for each procedure performed from authority having jurisdiction.
 - .3 Submit valid Welders Performance Qualification Record (WPQR) book issued under the authority of the Provincial Boiler and Pressure Vessel Safety Program to Client Representative.
 - .4 Each welder to possess identification symbol issued by authority having jurisdiction.

1.5 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 00 10 00 – General Instructions.
- .2 Submit data to produce record drawings, including directions for operating valves, list of equipment required to operate valves, details of pipe material.
 - .1 Include top of pipe, horizontal location of fittings and type, valves, valve boxes, flushouts, existing services uncovered during excavation, existing services known to exist within 3m of installation.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 00 10 00 – General Instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect water distribution piping from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

1.7 SCHEDULING OF WORK

- .1 Schedule Work to minimize interruptions to existing services.
- .2 Submit schedule of expected interruptions for approval and adhere to interruption schedule as approved by Departmental Representative.
- .3 Notify Departmental Representative minimum of 48 hours in advance of interruption in service.
- .4 Do not interrupt water service for more than 3 hours and confine this period between 10:00 and 16:00 hours local time unless otherwise authorized.
- .5 Notify fire department of planned or accidental interruption of water supply to hydrants.

1.8 MAINTENANCE MATERIAL SUBMITTALS

- .1 Submit in accordance with Section 00 10 00 –General Instructions.
- .2 Extra materials: furnish following spare parts:
 - .1 Valve operating key: one (1) tee-handle operating keys for valves.
 - .2 Repair saddles: two (2) stainless steel repair saddles - Romac industries SS2-H-6.63x16 of approved equal.

Part 2 Products

2.1 PIPE, JOINTS AND FITTINGS

- .1 High Density Polyethylene Pipe (HDPE):
 - .1 Pipe:
 - .1 Type 4710 To AWWA C906 pressure class specified in Contract Documents.
 - .2 Pipes to be certified by Canadian Standard Association CSA B137.4-13.
 - .2 Joints: Heat butt fusion to ASTM D2657 and in accordance with manufacturer's recommendations.
 - .3 Fittings:
 - .1 Fabricated HDPE mitred fittings to AWWA C906 suitable for pressure rating specified in Contract Documents.
 - .2 Moulded HDPE fittings to ASTM 3261 suitable for pressure rating specified and fusion to main pipe, dimensions as specified in Contract Documents.
 - .3 Flanged joints to AWWA C906 flat faced stub end and loose hot-dip galvanized ductile iron (ASTM A536) backup ring drilling to ANSI B16.1, ANSI B16.5, or AWWA C207, class suitable for pressure rating specified in Contract Documents.
 - .4 Nuts and bolts as specified for "Fittings" in this section.
- .2 Schedule 80 PVC pressure pipe:
 - .1 Pipe: To ASTM D1785 and CAN/CSA B137-3-M90 rigid solvent weld for pipe and fittings used inside building.
 - .2 Fittings: to ASTM D2467 Rev A.
 - .3 Valves: True Union Ball Valves.
- .3 Schedule 10 Stainless Steel 304:
 - .1 Pipe: Schedule 10 type 304 Stainless Steel to to ASTM A778-01(2009).
 - .1 NPS 2 to 10: Sch.10, Electric Resistance Welding (ERW) or seamless, plain ends.
 - .2 Flanges: to ASTM A182/A182M-11a, Type 304.

- .1 NPS 2 to 12: Class 150, 1 MPa, full faced, weld neck, bored to suit pipe, conforming to the face dimension and drilling of ANSIB16.1, Class 150.

.4 Fittings:

- .1 Gray-iron (cast iron) fittings to AWWA C110/A21.10-93 suitable for 1035 kPa minimum pressure rating or higher as specified in Contract Documents. Where specified in Contract Documents, to be cement mortar lined and externally seal coated, both to AWWA C104/A21.4.
- .2 Ductile iron fittings to AWWA C110 suitable for pressure rating of 2415 kPa, cement mortar lined to AWWA C104/A21.4.
- .3 Compact ductile iron fittings to AWWA C153/A21.59-94 suitable for pressure rating of 2415 kPa, cement mortar lined to AWWA C104/A21.4.
- .4 Single rubber gasket for push-on bell and spigot type joint and/or mechanical pipe joints: to AWWA C111. All push-on joint hubs to be equipped with tie-rod lugs.
- .5 Flanged Joints:
 - .1 Flat faced conforming to the face dimension and drilling of ANSIB16.1, Class 150.
 - .2 On AWWA C153 fittings to AWWA C153 with minimum pressure rating of 1723 kPa or higher as specified in Contract Documents.
- .6 Flange Gaskets:
 - .1 Flange gaskets to be manufactured from black natural rubber 3.175mm thick with layer of cotton on both sides.
 - .2 Gaskets to be nitrile or NBR.
- .7 Bolts and Nuts:
 - .1 Bolts to be carbon steel, Grade B to ASTM A307, heavy hex style, zinc plated to ASTM B633 or cadmium plated to ASTM B766. Bolt sizes to AWWA C110.
 - .2 Nuts and washers: Nuts to be carbon steel, Grade A to ASTM A563. Washers to be flat hardened steel to ASTM F436. Nuts and washers to be zinc plated to ASTM B633 or cadmium plated to ASTM B766.
- .8 Tie Rods and Nuts:
 - .1 Tie rods to be continuous threaded, quenched and tempered alloyed steel to ASTM A354, Grade BC. To be zinc plated to ASTM B633 or cadmium plated to ASTM C766. Tie rod sizes to be minimum 19mm diameter or greater as shown on Contract Drawings.
 - .2 Nuts and internally threaded couplings to be heavy hex finish to ASTM A563. Washers to be flat hardened steel to ASTM F436. All to be zinc plated to ASTM B633 or cadmium plated to ASTM C766.
- .9 Fabricated steel pipe fittings: to AWWA C208 and AWWA C207 if flanged, interior and exterior protected with hot applied coal tar enamel to AWWA C203 or liquid epoxy coating to AWWA C210.

- .10 Couplings and Flanged Coupling Adapters:
 - .1 General Requirements:
 - .1 Suitable for pressure class specified in Contract Documents. Minimum 250 Psi working pressure.
 - .2 Flanges and full face flange gaskets where applicable to Clauses 2.1.4.5 and 2.1.4.6.
 - .3 To AWWA C219
 - .4 Anti-corrosion coating and interior and exterior centre sleeve and end rings to AWWA C219, AWWA C213, AWWA C210, or AWWA C550 as specified in Contract Documents.
 - .5 Compression gaskets to AWWA C219.
 - .6 Bolts and nuts high strength low alloy steel to AWWA C111, stainless steel to ASTM F593 or ASTM F738 for bolts and ASTM F594 or ASTM F836M for heavy hex nuts, as specified in Contract Documents. Rolled threads, fit and dimensions to AWWA C111.
 - .7 Ductile iron castings to ASTM A536, Grade 65-45-12.
 - .2 Plain end or transition couplings as specified in Contract Documents.
 - .3 Flanged coupling adapters as specified in Contract Documents.
- .11 Joint Restraint Devices: General Requirements:
 - .1 Ductile iron castings to ASTM A536.
 - .2 Anti-corrosion coating of ductile iron castings to AWWA C219, AWWA C210, AWWA C213 or AWWA C550 as specified in Contract Documents.
 - .3 Bolts and nuts high strength low alloy steel to AWWA C111 or as specified in Contract Documents, stainless steel to ASTM F593 or ASTM F738 for bolts and ASTM F594 or ASTM F836M for heavy hex nuts. Rolled threads, fit and dimensions to AWWA C111.
 - .4 Tie rods to 2.1.4.8.
 - .5 Restrained harnesses or integral restraint systems manufactures as part of the pipe joint as specified in Contract Documents.
- .12 Repair clamps shall be constructed of 18-8 stainless steel passivated for corrosion resistance. Stainless steel components shall be Type 304 or 304L. All surfaces including weld areas shall be thoroughly cleaned of scale, grease or other contaminants. Welding must be performed in a controlled environment to prevent sensitization. Nuts and bolts shall be Type 304 18-8 stainless steel 5/8 x 11 NC rolled thread lubricated to prevent galling. Gasket shall be SBR (Buna) rubber per ASTM D2000.

2.2 VALVES AND VALVE BOXES

- .1 Valves to open counter clockwise.

- .2 Gate valves: to ANSI/AWWA C509-09, standard iron body, resilient seated, bronze mounted wedge valves with non-rising stems, suitable for 1380 kPa with flanged joints.
- .3 Cast iron valve boxes: two piece surface bearing.
 - .1 Base to be large square with minimum dimension 300 mm x 300 mm.
 - .2 Top of box to be marked "WATER".
- .4 Ball valves:
 - .1 50 mm and smaller, screwed, Class 600 (4140 kPa), forged brass body; chrome plated, full port ball; PTFE seats; blow out proof stem.

2.3 PIPE BEDDING AND SURROUND MATERIAL

- .1 As indicated on drawing and to Section 31 23 33.01 – Excavation Trenching and Backfilling.

2.4 BACKFILL MATERIAL

As indicated on drawings and to Section 31 23 33.01 - Excavating, Trenching and Backfilling.

2.5 PIPE DISINFECTION

- .1 Sodium hypochlorite or Calcium hypochlorite to ANSI/AWWA B300 or Liquid chlorine to ANSI/AWWA B301 to disinfect water mains.
- .2 Disinfect water mains in accordance with ANSI/AWWA C651.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for distribution piping installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 SHOP FABRICATIONS

- .1 Stainless steel fabrication shall be in an approved fabrication shop set up to handle, fabricate and weld stainless steel pipe using handling procedures to eliminate carbon and/or iron contamination of the stainless steel. Field welding is only permitted with prior consent of Departmental Representative.
 - .1 Welds shall be prepared by using only stainless steel tools.
 - .2 Tools used on previous carbon steel products are not permitted.

- .3 Wire brushes and wheels shall be 300 series for use on austenitic and nickel alloys.
- .2 Post Weld Cleaning: All welds shall be pickled and passivated in accordance with ANSI/AWWA C220, ASTM A380, and ASTM A967. All Pickling solutions and pastes shall be certified under NSF 61.
 - .1 Small assemblies shall be immersed in a liquid bath of pickling solution.
 - .2 Large fabrications shall be cleaned with a pickling paste.
 - .3 Any discolouration on the pipes shall be removed by pickling.
 - .4 After completion of pickling, the passivated surface shall be cleaned of all acids by thoroughly washing the pipe with potable water.
- .3 Examinations and tests:
 - .1 General:
 - .1 Perform examinations and tests by specialist qualified to CSA W178.1 and CSA W178.2 and approved by Client Representative.
 - .2 To ANSI/ASME Boiler and Pressure Vessels Code, Section V, CSA B51 and requirements of authority having jurisdiction.
 - .3 Inspect minimum fifty (50%) percent of welds in accordance with "Inspection and Test Plan" by non-destructive visual examination.
 - .2 Hydrostatically test welds to ANSI/ASME B31.3.
 - .3 Visual examinations: include entire circumference of weld externally and wherever possible internally.
 - .4 Failure of visual examinations:
 - .1 Upon failure of more than five (5%) percent of welds by visual examination, perform additional testing as directed by Client Representative of total of up to ten (10%) percent of welds, selected at random by Client Representative by radiographic tests.
- .4 Radiographic tests for piping systems.
 - .1 Radiographic film:
 - .1 Identify each radiographic film with date, location, name of welder, and submit to Client Representative. Replace film if rejected because of poor quality.
 - .2 Interpretation of radiographic films:
 - .1 By qualified radiographer.
 - .3 Failure of radiographic tests:
 - .1 Extend tests to welds by welder responsible when those welds fails tests.
- .5 Defects causing rejection: As described in ANSI/ASME B31.3 and ANSI/ASME Boiler and Pressure Vessels Code

3.3 PREPARATION

- .1 Clean pipes, fittings, valves, flushouts, and appurtenances of accumulated debris and water before installation.

- .1 Inspect materials for defects to approval of Departmental Representative.
- .2 Remove defective materials from site as directed by Departmental Representative.

3.4 TRENCHING

- .1 Do trenching work in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- .2 Ensure trench depth allows coverage over pipe of as indicated.
- .3 Trench alignment and depth require Departmental Representative's approval prior to placing bedding material and pipe.

3.5 GRANULAR BEDDING

- .1 Place granular bedding material in uniform layers not exceeding 150 mm compacted thickness.
- .2 Do not place material in frozen condition.
- .3 Shape bed true to grade to provide continuous uniform bearing surface for pipe.
- .4 Shape transverse depressions in bedding as required to suit joints.
- .5 Compact each layer full width of bed to 95 % minimum of corrected maximum dry density to ASTM D1557.
- .6 Fill authorized or unauthorized excavation below design elevation of bottom of specified bedding in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling with compacted bedding material.

3.6 PIPE INSTALLATION

- .1 Lay pipes to manufacturer's standard instructions and specifications. Do not use blocks except as specified.
- .2 Join pipes in accordance with manufacturer's recommendations.
- .3 Bevel or taper ends of HDPE pipe to match fittings.
- .4 Handle pipe by methods recommended by pipe manufacturer. Do not use chains or cables passed through pipe bore so that weight of pipe bears on pipe ends.
- .5 Lay pipes on prepared bed, true to line and grade.
 - .1 Ensure pipe is in contact with shaped bed throughout its full length.
 - .2 Take up and replace defective pipe.
 - .3 Correct pipe which is not in true alignment or grade or pipe which shows differential settlement after installation greater than 10 mm in 3 m.
- .6 Keep jointing materials and installed pipe free of dirt and water and other foreign materials.
 - .1 Whenever work is stopped, install a removable watertight bulkhead at open end of last pipe laid to prevent entry of foreign materials.
- .7 Position and join pipes with equipment and methods in accordance with manufacturers recommendations.

- .8 Cut pipes in approved manner as recommended by pipe manufacturer, without damaging pipe or its coating and to leave smooth end at right angles to axis of pipe.
- .9 Align pipes before jointing.
- .10 Install gaskets to manufacturer's recommendations. Support pipes with hand slings or crane as required to minimize lateral pressure on gasket and maintain concentricity until gasket is properly positioned.
- .11 Avoid displacing gasket or contaminating with dirt or other foreign material.
 - .1 Remove disturbed or contaminated gaskets.
 - .2 Clean, lubricate and replace before jointing is attempted again.
- .12 Complete each joint before laying next length of pipe.
- .13 Minimize deflection after joint has been made.
- .14 Apply sufficient pressure in making joints to ensure that joint is completed to manufacturer's recommendations.
- .15 Ensure completed joints are restrained by compacting bedding material alongside and over installed pipes or as otherwise approved by Departmental Representative.
- .16 When stoppage of work occurs, block pipes in an approved manner to prevent creep during down time.
- .17 Recheck plastic pipe joints assembled above ground after placing in trench to ensure that no movement of joint has taken place.
- .18 Do not lay pipe on frozen bedding.
- .19 Do hydrostatic and leakage test and have results approved by Departmental Representative before surrounding and covering joints and fittings with granular material.
- .20 Backfill remainder of trench.

3.7 VALVE INSTALLATION

- .1 Install valves to manufacturer's recommendations at locations as indicated.
- .2 Support valves located in valve boxes or valve chambers by means of concrete located between valve and solid ground. Valves not to be supported by pipe.

3.8 THRUST BLOCKS AND RESTRAINED JOINTS

- .1 Place concrete thrust blocks between valves, tees, plugs, caps, bends, changes in pipe diameter, reducers, hydrants and fittings and undisturbed ground as indicated or as directed by Departmental Representative.
- .2 Keep joints and couplings free of concrete.
- .3 Do not backfill over concrete within 24 hours after placing.
- .4 For restrained joints: only use restrained joints approved by Departmental Representative.

3.9 HYDROSTATIC AND LEAKAGE TESTING

- .1 Do tests in accordance with latest revision of ASTM F2164.
- .2 Provide labour, equipment and materials required to perform hydrostatic and leakage tests hereinafter described.
- .3 Notify Departmental Representative at least 48 hours in advance of proposed tests.
 - .1 Perform tests in presence of Departmental Representative.
- .4 Where section of system is provided with concrete thrust blocks, conduct tests at least 5 days after placing concrete or 2 days if high early strength concrete is used.
- .5 Upon completion of pipe laying and after Departmental Representative has inspected Work in place, surround and cover pipes between joints with approved granular material placed to dimensions indicated.
- .6 Leave hydrants, valves, joints and fittings exposed.
- .7 When testing is done during freezing weather, protect hydrants, valves, joints and fittings from freezing.
- .8 Strut and brace caps, bends, tees, and valves, to prevent movement when test pressure is applied.
- .9 Open valves.
- .10 Expel air from main by slowly filling main with potable water.
 - .1 Install corporation stops or temporary test points at high point in main where no air-vacuum release valves are installed.
 - .2 Remove stops after satisfactory completion of test and seal holes with plugs.
- .11 Thoroughly examine exposed parts and correct for leakage as necessary.
- .12 Apply hydrostatic test pressure of 1724 kPa (250 PSI) minimum based on elevation of lowest point in main and corrected to elevation of test gauge, for period of 1 hour.
- .13 Examine exposed pipe, joints, fittings and appurtenances while system is under pressure.
- .14 Remove joints, fittings and appurtenances found defective and replace with new sound material and make watertight.
- .15 Repeat test until leakage is within specified allowance for full length of water main.

3.10 PIPE SURROUND

- .1 Upon completion of pipe laying and after Departmental Representative has inspected Work in place, surround and cover pipes as indicated.
- .2 Hand place surround material in uniform layers not exceeding 150 mm compacted thickness as indicated.

- .1 Do not dump material within 1m of pipe.
- .3 Place layers uniformly and simultaneously on each side of pipe.
- .4 Do not place material in frozen condition.
- .5 Compact each layer from pipe invert to mid height of pipe to at least 95 % of corrected maximum dry density.
- .6 Compact each layer from mid height of pipe to underside of backfill to at least 95 % of corrected maximum dry density.

3.11 BACKFILL

- .1 Place backfill material, above pipe surround, in uniform layers not exceeding 150 mm compacted thickness up to grades as indicated.
- .2 Do not place backfill in frozen condition.
- .3 Under paving and walks, compact backfill to at least 95 % of corrected maximum dry density.

3.12 FLUSHING AND DISINFECTING

- .1 Flushing and disinfecting operations: witnessed by Departmental Representative.
 - .1 Notify Departmental Representative at least 5 days in advance of proposed date when disinfecting operations will begin.
- .2 Flush water mains through available outlets with a sufficient flow of potable water to produce velocity of 1.5 m/s, within pipe for minimum 10 minutes, or until foreign materials have been removed and flushed water is clear.
- .3 Provide connections and pumps for flushing as required.
- .4 Open and close valves, hydrants and service connections to ensure thorough flushing.
- .5 Disinfect water mains in accordance with latest revision of AWWA C651.

3.13 SURFACE RESTORATION

- .1 After installing and backfilling over water mains, restore surface as indicated in Contract Documents.

3.14 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 00 10 00 –General Instructions.
 - .1 Leave Work area clean at end of each day.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 15 45 – General Safety Section and Fire Requirements.
- .2 Section 01 10 00 - General Instructions.

1.2 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM C117-04, Standard Test Method for Material Finer than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.
 - .2 ASTM C136-05, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .3 ASTM D422-63/2002, Standard Test Method for Particle-Size Analysis of Soils.
 - .4 ASTM D1557-02e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³).
 - .5 ASTM D4318-05, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.
 - .2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.
- .3 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-A3000-03, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
 - .1 CSA-A3001-03, Cementitious Materials for Use in Concrete.
 - .2 CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.

1.3 DEFINITIONS

- .1 Excavation classes: two classes of excavation will be recognized; common excavation and rock excavation.
 - .1 Rock : solid material in excess of 1.00 m ; and which cannot be removed by means of heavy duty mechanical excavating equipment with 0.95 to 1.15 m; bucket. Frozen material not classified as rock.
 - .2 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.
 - .2 Unclassified excavation: excavation of deposits of whatever character encountered in Work.
 - .3 Topsoil:
 - .1 Material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.
 - .2 Material reasonably free from subsoil, clay lumps, brush, objectionable weeds, and other litter, and free from cobbles, stumps, roots, and other objectionable material larger than 25 millimeters in any dimension.
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- .4 Waste material: excavated material unsuitable for use in Work or surplus to requirements.
- .5 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of Work.
- .6 Recycled fill material: material, considered inert, obtained from alternate sources and engineered to meet requirements of fill areas.
- .7 Unsuitable materials:
 - .1 Weak, chemically unstable, and compressible materials.
 - .2 Frost susceptible materials:
 - .1 Fine grained soils with plasticity index less than 10 when tested to ASTM D4318, and gradation within limits specified when tested to ASTM D422 and ASTM C136 : Sieve sizes to CAN/CGSB-8.1 CAN/CGSB-8.2.
 - .2 Table:

Sieve Designation	% Passing
2.00 mm	100
0.10 mm	45 - 100
0.02 mm	10 - 80
0.005 mm	0 - 45
 - .3 Coarse grained soils containing more than 20 % by mass passing 0.075 mm sieve.
- .8 Unshrinkable fill: very weak mixture of cement, concrete aggregates and water that resists settlement when placed in utility trenches, and capable of being readily excavated.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Make submittals in accordance with Section 00 10 00 – General Instructions.
- .2 Quality Control:
 - .1 Submit condition survey of existing conditions as described in EXISTING CONDITIONS article of this Section.
 - .2 Submit for review by Departmental Representative proposed dewatering methods as described in PART 3 of this Section.
 - .3 Submit to Departmental Representative written notice when bottom of excavation is reached.
 - .4 Submit to Departmental Representative testing inspection results report as described in PART 3 of this Section.
- .3 Preconstruction Submittals:
 - .1 Submit construction equipment list for major equipment to be used in this section prior to start of Work.
 - .2 Submit records of underground utility locates, indicating: location plan of existing utilities as found in field.
- .4 Samples:
 - .1 Submit samples in accordance with Section 00 10 00 General Instructions.
 - .2 Inform Departmental Representative at least 2 weeks prior to beginning Work, of proposed source of fill materials and provide access for sampling.
 - .3 Submit testing report (gradation curves) of proposed bedding materials 2 weeks prior to beginning work.

1.5 QUALITY ASSURANCE

- .1 Qualification Statement: submit proof of insurance coverage for professional liability.
- .2 Submit design and supporting data at least 2 weeks prior to beginning Work.
- .3 Design and supporting data submitted to bear stamp and signature of qualified professional engineer registered or licensed in Province of British Columbia, Canada.
- .4 Keep design and supporting data on site.
- .5 Engage services of qualified professional Engineer who is registered or licensed in Province British Columbia, Canada in which Work is to be carried out to design and inspect cofferdams, shoring, bracing and underpinning required for Work.
- .6 Do not use soil material until written report of soil test results are reviewed and approved by Departmental Representative.
- .7 Health and Safety Requirements:
 - .1 Do construction occupational health and safety in accordance with Section 00 15 45 – General Safety Section and Fire Requirements.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 00 10 00 General Instructions.
- .2 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .3 Place materials defined as hazardous or toxic in designated containers.
- .4 Divert unused aggregate materials from landfill to facility for reuse as approved by Department Representative.
- .5 Dispose of unused paint and paint thinner materials at official hazardous material collections site as approved by Department Representative.
- .6 Fold up metal banding, flatten and place in designated area for recycling.
- .7 Do not dispose of unused paint thinner material into sewer system, into streams, lakes, onto ground or in other location where it will pose health environmental hazard.
- .8 Divert unused asphalt from landfill to facility capable of recycling materials
- .9 Dispose of waste materials at suitable off-site disposal facility in accordance with all applicable regulations.

1.7 EXISTING CONDITIONS

- .1 Buried services:
 - .1 Before commencing work verify location of buried services on and adjacent to site.
 - .2 Arrange with appropriate authority for relocation of buried services that interfere with execution of work: pay costs of relocating services.
 - .3 Remove obsolete buried services within 2 m of structures: cap cut-offs.
 - .4 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.
-

- .5 Prior to beginning excavation Work, notify Departmental Representative establish location and state of use of buried utilities and structures. Clearly mark such locations to prevent disturbance during Work.
- .6 Confirm locations of buried utilities by soil hydrovac methods or careful test excavations.
- .7 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered.
- .8 Where utility lines or structures exist in area of excavation, obtain direction of Departmental Representative before removing or re-routing.
- .9 Record location of maintained, re-routed and abandoned underground lines.
- .10 Confirm locations of recent excavations adjacent to area of excavation.
- .2 Existing buildings and surface features:
 - .1 Conduct, with Departmental Representative, condition survey of existing buildings, trees and other plants, lawns, fencing, service poles, wires, pavement, survey bench marks and monuments which may be affected by Work.
 - .2 Protect existing buildings and surface features from damage while Work is in progress. In event of damage, immediately make repair as directed by Departmental Representative.
 - .3 Where required for excavation, cut roots or branches as directed by Departmental Representative.

Part 2 Products

2.1 MATERIALS

- .1 Granular Base and Sand: properties in accordance with the following requirements:
 - .1 Crushed gravel or sand.
 - .2 Gradations to be within limits specified when tested to ASTM C136 and ASTM C117. Sieve sizes to CAN/CGSB-8.1 CAN/CGSB-8.2.
 - .3 Table:

Sieve Designation	% Passing	
	Granular Base	Sand
19 mm	100	-
12.5 mm	75 -100	100
9.5 mm	60 - 90	-
4.75 mm	40 - 70	35-100
2.36 mm	27 – 55	20-70
2.00 mm	-	-
1.18 mm	16 – 42	13-50
0.600 mm	8 – 30	8-35
0.425 mm	10-25	-
0.300 mm	5 – 20	5-25
0.180 mm	-	-
0.150 mm	-	2-15
0.075 mm	2 - 8	0-6
- .2 Unshrinkable fill: proportioned and mixed to provide:
 - .1 Maximum compressive strength of 0.4 MPa at 28 days.
 - .2 Maximum cement content of 25 kg/m ; to CSA-A3001, Type GU.

- .3 Minimum strength of 0.07MPa at 24 h.
- .4 Concrete aggregates: to CSA-A23.1/A23.2.
- .5 Cement: Type GU.
- .6 Slump: 160 to 200 mm.
- .3 Shearmat: honeycomb type bio-degradable cardboard 100 mm thick, treated to provide sufficient structural support for poured concrete until concrete cured.

Part 3 Execution

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to sediment and erosion control drawings, specific to site, that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.2 SITE PREPARATION

- .1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.
- .2 Cut pavement or sidewalk neatly along limits of proposed excavation in order that surface may break evenly and cleanly.

3.3 PREPARATION/PROTECTION

- .1 Protect existing features in accordance with applicable local regulations.
- .2 Keep excavations clean, free of standing water, and loose soil.
- .3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to Departmental Representative.
- .4 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
- .5 Protect buried services that are required to remain undisturbed.

3.4 STRIPPING OF TOPSOIL

- .1 Begin topsoil stripping of areas as indicated after area has been cleared of brush, weeds, grasses and removed from site.
 - .2 Strip topsoil to depths as indicated.
 - .1 Do not mix topsoil with subsoil.
 - .3 Stockpile in locations as directed by Departmental Representative.
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- .1 Stockpile height not to exceed 2 m and should be protected from erosion.
- .4 Dispose of unused topsoil off site.

3.5 STOCKPILING

- .1 Stockpile fill materials in areas designated by Departmental Representative.
 - .1 Stockpile granular materials in manner to prevent segregation.
- .2 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and into water bodies.

3.6 SHORING, BRACING AND UNDERPINNING

- .1 Maintain sides and slopes of excavations in safe condition by appropriate methods and in accordance with WorkSafe BC and Section 00 15 45 General Safety Section and Fire Requirements.
 - .1 Where conditions are unstable, Departmental Representative to verify and advise methods.
- .2 Construct temporary Works to depths, heights and locations as indicated by Departmental Representative.
- .3 During backfill operation:
 - .1 Unless otherwise indicated or directed by Departmental Representative, remove sheeting and shoring from excavations.
 - .2 Do not remove bracing until backfilling has reached respective levels of such bracing.
 - .3 Pull sheeting in increments that will ensure compacted backfill is maintained at elevation at least 500 mm above toe of sheeting.
- .4 When sheeting is required to remain in place, cut off tops at elevations as indicated.
- .5 Upon completion of substructure construction:
 - .1 Remove shoring and bracing.

3.7 DEWATERING

- .1 Keep excavations free of water while Work is in progress.
 - .2 Provide for Departmental Representative review, details of proposed dewatering methods where required.
 - .3 Avoid excavation below groundwater table if quick condition or heave is likely to occur.
 - .4 Protect open excavations against flooding and damage due to surface run-off.
 - .5 Dispose of water in accordance with applicable environmental regulations and local by-laws to approved runoff areas and in manner not detrimental to public and private property, or portion of Work completed or under construction.
 - .1 Provide and maintain temporary drainage ditches and other diversions outside of excavation limits.
 - .6 Provide flocculation tanks, settling basins, or other treatment facilities to remove suspended solids or other materials before discharging to storm sewers, watercourses or drainage areas.
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3.8 EXCAVATION

- .1 Advise Departmental Representative at least 7 days in advance of excavation operations. Excavate to lines, grades, elevations and dimensions as indicated.
- .2 Remove concrete, masonry, paving, walks, demolished foundations and rubble and other obstructions encountered during excavation offsite.
- .3 Excavation must not interfere with bearing capacity of adjacent foundations.
- .4 Do not disturb soil within branch spread of trees or shrubs that are to remain.
 - .1 If excavating through roots, excavate by hand and cut roots with sharp axe or saw.
- .5 For trench excavation, unless otherwise authorized by Departmental Representative in writing, do not excavate more than 30 m of trench in advance of installation operations and do not leave open more than 5 m at end of day's operation. Open trenches to be plated or suitable barricaded.
- .6 Keep excavated and stockpiled materials safe distance away from edge of trench as directed by Departmental Representative.
- .7 Restrict vehicle operations directly adjacent to open trenches.
- .8 Dispose of surplus and unsuitable excavated material offsite at approved facility.
- .9 Do not obstruct flow of surface drainage or natural watercourses.
- .10 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.
- .11 Notify Departmental Representative when bottom of excavation is reached.
- .12 Obtain Departmental Representative approval of completed excavation.
- .13 Remove unsuitable material from trench bottom including those that extend below required elevations to extent and depth as directed by Departmental Representative.
- .14 Correct unauthorized over-excavation as with granular base compacted to not less than 95% Modified Proctor maximum dry density.
- .15 Hand trim, make firm and remove loose material and debris from excavations.
 - .1 Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.
 - .2 Clean out rock seams and fill with concrete mortar or grout to approval of Departmental Representative.

3.9 FILL TYPES AND COMPACTION

- .1 Use types of fill as indicated on drawings. Compaction densities are percentages of maximum densities obtained from ASTM D1557.
- .2 When requested by Departmental Representative, Contractor to pay for and provide compaction test results.

3.10 BEDDING AND SURROUND OF UNDERGROUND SERVICES

- .1 Place and compact granular material for bedding and surround of underground services as indicated.
 - .2 Place bedding and surround material in unfrozen condition.
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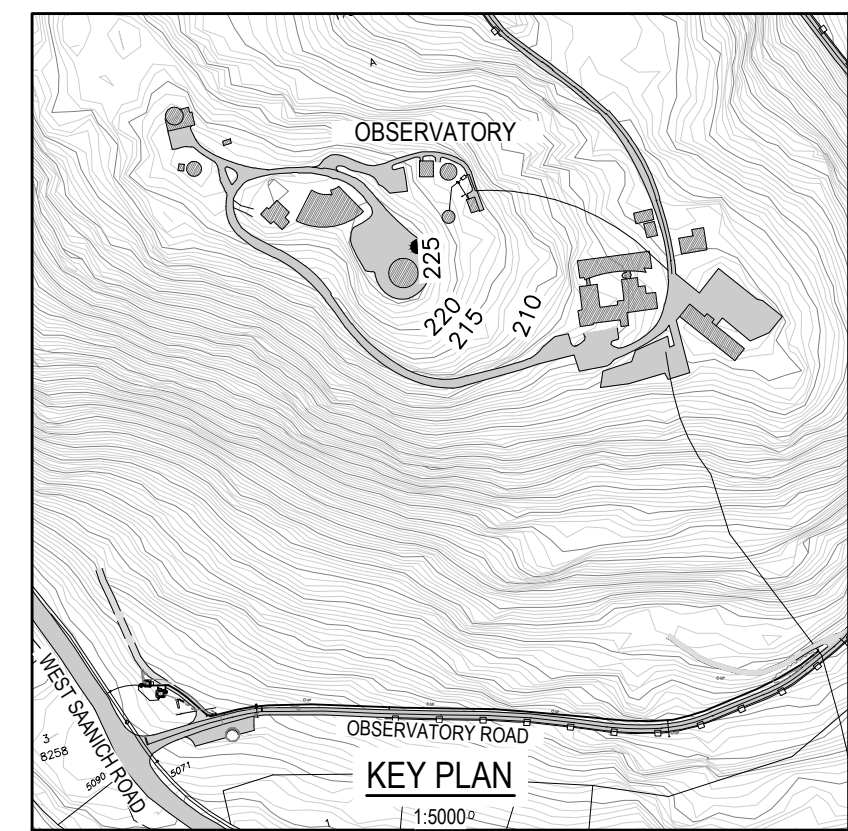
3.11 BACKFILLING

- .1 Do not proceed with backfilling operations until completion of following:
 - .1 Departmental Representative has inspected and approved installations.
 - .2 Departmental Representative has inspected and approved of construction below finish grade.
 - .3 Departmental representative tested and approved compaction of structural fill and approved bearing capacity under footings, as noted on structural drawings.
 - .4 Inspection, testing, approval, and recording location of underground utilities.
 - .5 Removal of concrete formwork.
 - .6 Removal of shoring and bracing; backfilling of voids with satisfactory soil material.
- .2 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
- .3 Do not use backfill material which is frozen or contains ice, snow or debris.
- .4 Place backfill material in uniform layers not exceeding 300 mm compacted thickness up to grades indicated. Compact each layer before placing succeeding layer.
- .5 Backfilling around installations:
 - .1 Do not backfill around or over cast-in-place concrete within 24 hours after placing of concrete.
 - .2 Place layers simultaneously on both sides of installed Work to equalize loading. Difference not to exceed 0.150 m.
 - .3 Where temporary unbalanced earth pressures are liable to develop on walls or other structures:
 - .1 Permit concrete to cure for minimum 14 days or until it has sufficient strength to withstand earth and compaction pressure and approval obtained from Departmental Representative.
- .6 Place unshrinkable fill in areas as indicated.
- .7 Consolidate and level unshrinkable fill with internal vibrators.

3.12 RESTORATION

- .1 Upon completion of Work, remove waste materials and debris in accordance with Section 00 10 00 – General Instructions and trim slopes, and correct defects as directed by Departmental Representative.
- .2 Reinstate pavements, gravel surfaces, shoulders and sidewalks disturbed by excavation as indicated
- .3 Reinstate un-travelled areas as indicated.
- .4 Replace topsoil as indicated Clean and reinstate areas affected by Work as directed by Departmental Representative.
- .5 Use temporary plating to support traffic loads over unshrinkable fill for initial 24 hours.
- .6 Protect newly graded areas from traffic and erosion and maintain free of trash or debris.

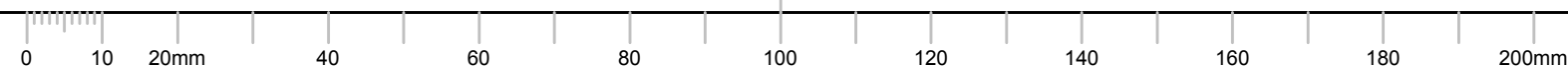
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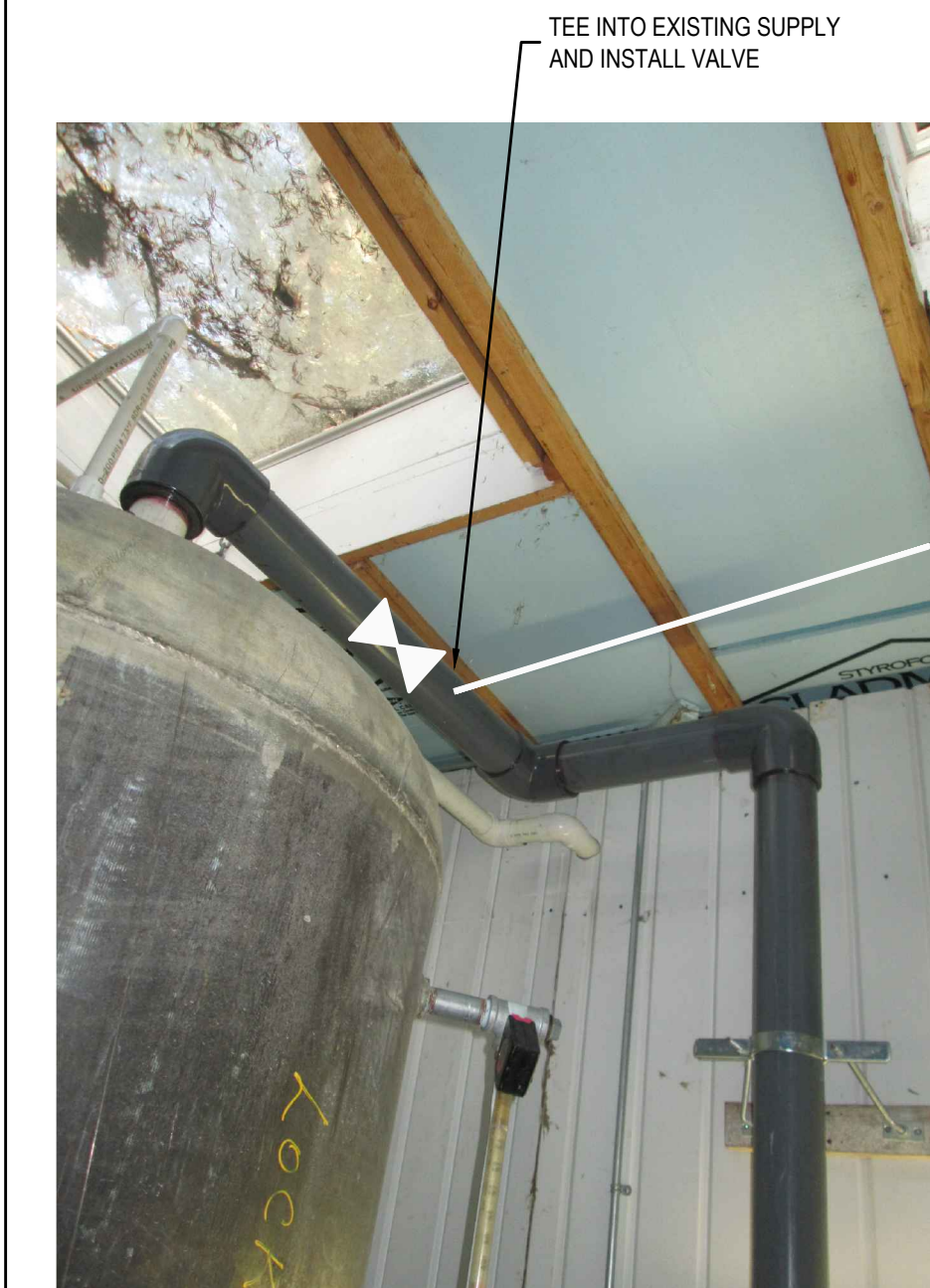
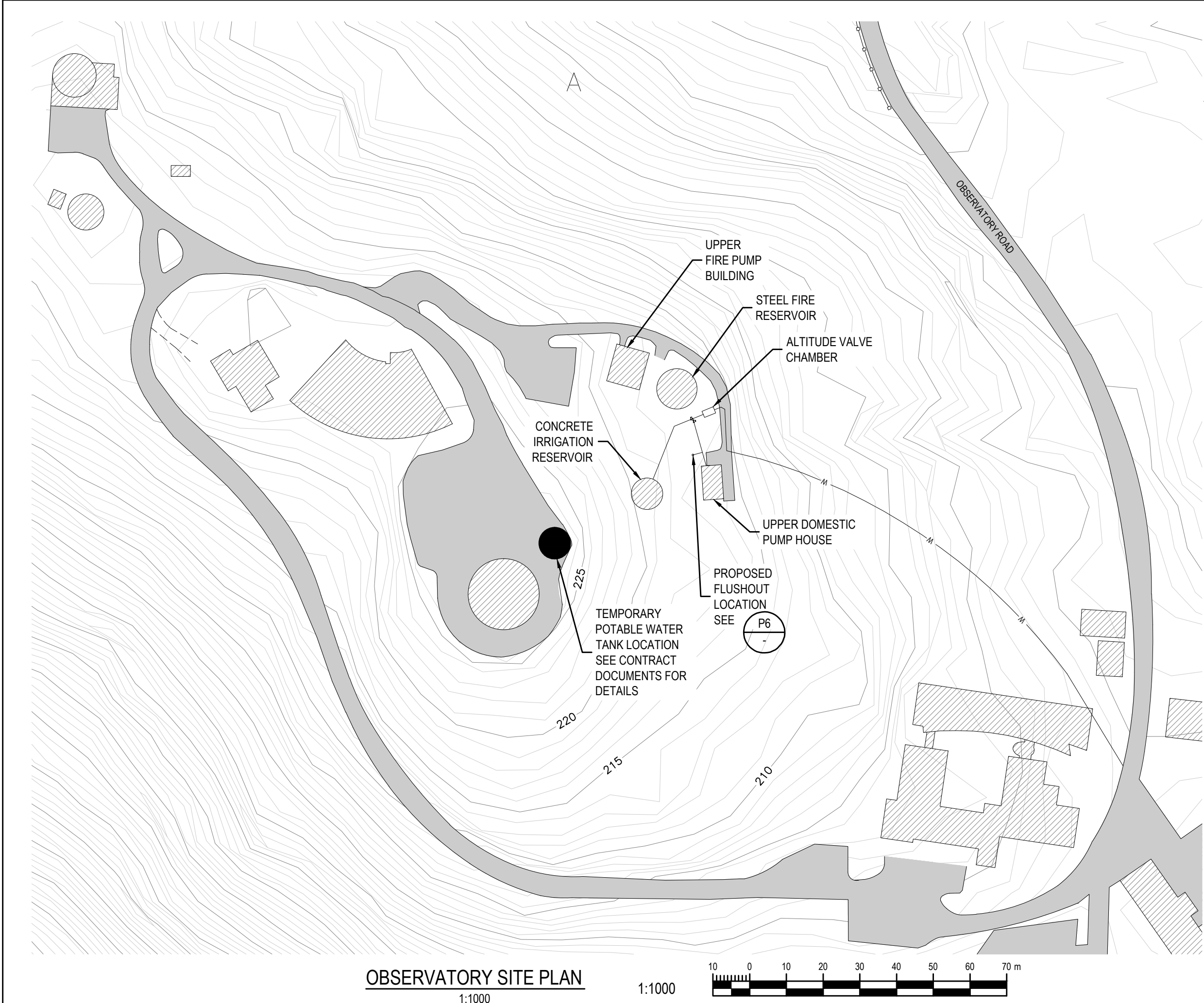


1. ALL CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS, DETAILS, AND THESE DRAWINGS.
2. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR THE MAINTENANCE OF THE VARIOUS CONSTRUCTION AREAS.
3. EXISTING SERVICES SHOWN ON THIS DRAWINGS ARE APPROXIMATE ONLY AND CANNOT BE GUARANTEED FOR ACCURACY. CONTRACTOR TO CONFIRM LOCATION OF ALL EXISTING SERVICES IN THE FIELD PRIOR TO CONSTRUCTION.
4. CONTRACTOR TO MAINTAIN VEHICULAR ACCESS TO OBSERVATORY ROAD.
5. CONTRACTOR TO MINIMIZE DAMAGE TO EXISTING ASPHALT. USE OF RUBBER TIED/TUCKERED EQUIPMENT AND/OR SUITABLE PROTECTION REQUIRED.
6. CAREFULLY REVIEW EXISTING LANDSCAPE FEATURES, TRAFFIC SIGNS AND OTHER FEATURES TO ACCOMMODATE CONSTRUCTION WORK. ALL EXISTING WORKS TO BE REPAIRED TO AS-FOUND OR BETTER CONDITION. CONTRACT BC-1 (1-800-474-6888), BC HYDRO, SHAW CABLE, AND FORTIS GAS FOR UNDERGROUND UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
7. DISPOSE OF ALL EXCAVATED MATERIAL UNSUITABLE FOR REUSE AT A DESIGNATED SITE DISPOSAL AREA IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
8. ALL ELEVATIONS ARE METRIC ASSUMED DATA.
9. 24 HOUR EMERGENCY CONTACT INFORMATION FOR CONTRACTOR REPRESENTATIVE TO BE PROVIDED TO NRC-DWY AND ENGINEER.
10. UNDESIGNED UTILITY LOCATIONS SHALL NOT BE RECOVERED IN A TIMELY MANNER. CONTRACTOR TO KEEP STANDARD REPAIR COMPONENTS ON SITE AT ALL TIMES. CONTRACTOR TO IMMEDIATELY NOTIFY NRC-DWY AND ENGINEER REPRESENTATIVES OF ANY UNDESIGNED UTILITY LOCATIONS DISCOVERED.
11. ALL ROADS ARE KEPT CLEAR OF DEBRIS ON A REGULAR BASIS.
12. ALL EXISTING ASPHALT TO BE CUT SQUARE WITH ASPHALT SAW.
13. CONSTRUCTION TO BE UNDERTAKEN USING BEST MANAGEMENT PRACTICES FOR STORMWATER TREATMENT. CONTRACTOR IS RESPONSIBLE TO PREPARE AND FOLLOW A STATION ABATEMENT PLAN SUITABLE TO PREVENT CONSTRUCTION FROM ENTERING THE STORM SYSTEM, OVERLAND DRAINAGES, CREEKS AND WETLAND AREAS.
14. REGRADE EXISTING DITCHES AS REQUIRED.

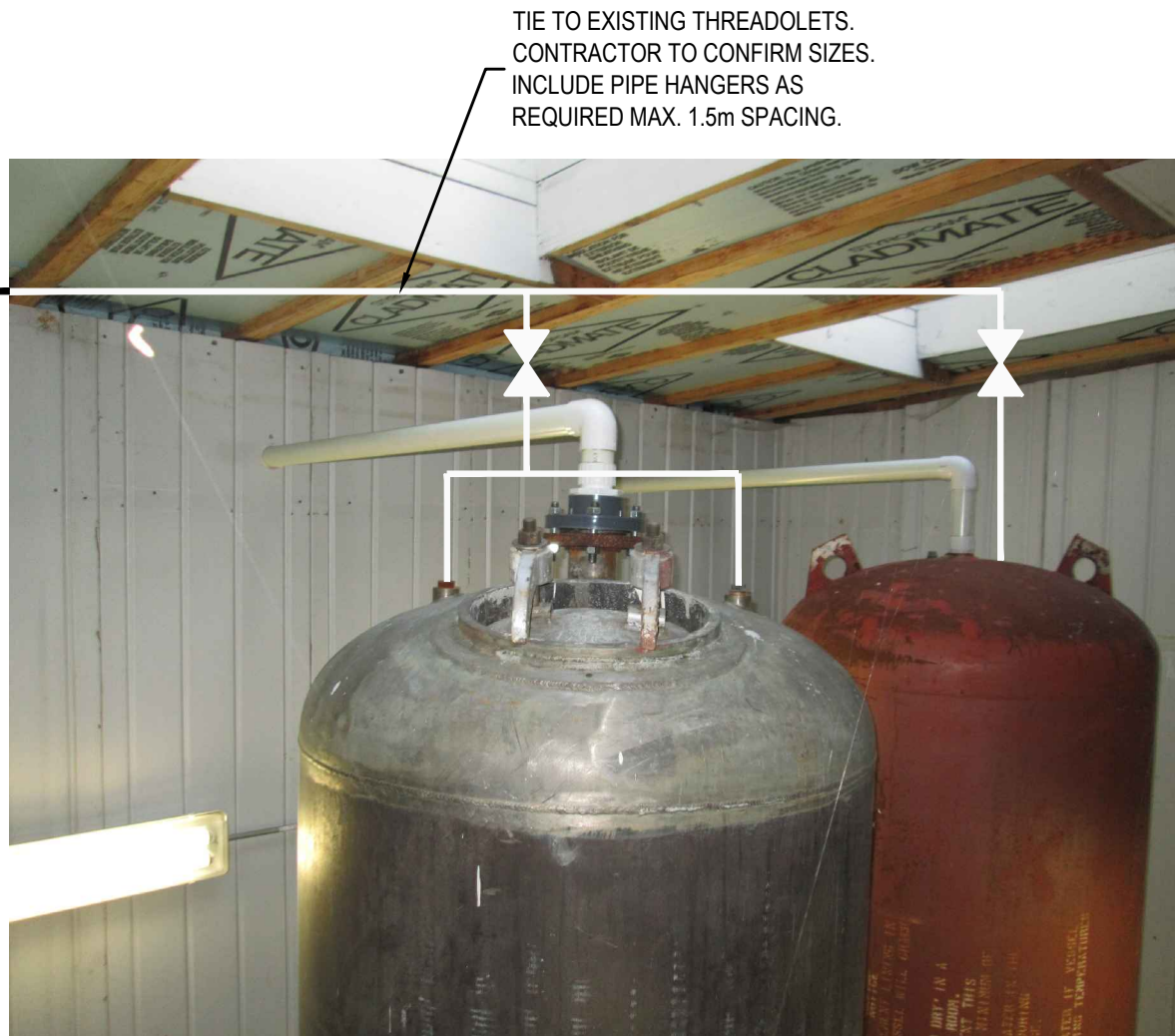
1. CONTRACTOR TO SUBMIT DETAILED WORK PLAN TO NRC-DAVO AND ENGINEER FOR APPROVAL. APPROVAL OF THE WORK PLAN MUST BE OBTAINED BEFORE THE START OF WORK. THE WORK PLAN MUST INCLUDE DETAILS ON MAINTAINING WATER SERVICE DURING CONSTRUCTION AND ALL TIE-IN WORKS.
2. CONTRACTOR TO BE REGISTERED WITH WORKSAFE BC.
3. CONTRACTOR TO PROVIDE 48 HOUR NOTICE TO NRC-DAVO AND ENGINEER BEFORE STARTING WORK.
4. ALL WATERWORKS CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND DRAWINGS.
5. PROVIDE A MINIMUM OF 0.3m cover for ALL NEW WATERMANS. WHERE MINIMUM COVER CANNOT BE OBTAINED DUE TO TRENCH CONDITIONS, CONTRACTOR TO MAINTAIN MINIMUM COVER OF 0.15m.
6. WATERMANS SHALL BE MARKED BELOW GRADE USING A METALLIC DETECTABLE REINFORCED UNDERGROUND UTILITY MARKING TAPE. THE TAPE SHALL BE MINIMUM 150mm wide, METALLIC BLUE IN COLOUR AND SHALL BE MARKED "CAUTION WATER LINE BURED BELOW". THE TAPE IS TO BE INSTALLED IN THE TOP OF THE TRENCH AND SHALL BE 150mm ABOVE THE TOP OF THE PIPE. MARKING TAPE SHALL BE "THORICOR" OR APPROVED ALIKE.
7. WATERMAIN TO BE #64710 DR HDPE OR SCH10 304 STAINLESS STEEL AS NOTED.
8. A MINIMUM OF 30m HORIZONTAL CLEAR SEPARATION AND 450mm CLEAR VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER MAINS AND ALL SANITARY SERVICES/SEWERS AND DRAIN SERVICES/SEWERS EXCEPT WHERE NOTED AND APPROVED BY THE NRC-DAVO.
9. A MINIMUM OF 30m HORIZONTAL CLEAR SEPARATION AND 450mm CLEAR VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER SERVICES AND ALL SANITARY SEWER AND DRAIN SEWER SERVICES. WHERE A SANITARY SEWER OR STORM DRAIN SERVICE IS LOWER THAN WATER SERVICE BY MORE THAN 450mm IN ELEVATION THE HORIZONTAL OFFSET MAY BE REDUCED TO THE MINIMUM 10m EXCEPT WHERE NOTED AND APPROVED BY NRC-DAVO.
10. A MINIMUM OF 10m HORIZONTAL CENTRE TO CENTRE AND 450mm CLEAR VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER SERVICES AND ELECTRICAL, GAS AND TELEPHONE SERVICES EXCEPT WHERE NOTED AND APPROVED BY NRC-DAVO.
11. CONTRACTOR SHALL CONDUCT PRESSURE TEST IN ACCORDANCE WITH WATERWORKS STANDARDS AND IN THE PRESENCE OF THE ENGINEER. HOPE TO BE TESTED TO LATEST REVISION OF ASTM F7264.
12. CONTRACTOR SHALL FLUSH AND DISINSECT WATER MAINS IN ACCORDANCE WITH AWWA STANDARDS AND AS APPROVED BY NRC-DAVO AND ENGINEER. WATER MAINS MUST BE FLUSHED WITH TEST TO BE COLLECTED AND PROCESSED BY ENGINEER.
13. CHLORINE SOLUTIONS SHALL BE NEUTRALIZED IN ACCORDANCE WITH MINISTRY OF THE ENVIRONMENT AND DEPARTMENT OF FISHERIES AND OCEANOGRAPHY TO DISCHARGE TO ANY DRAINAGE COURSE.
14. THE CONTRACTOR MUST NOT USE THE WATER MAINS AS CONSTRUCTED DRAINAGE/ANY BURED TRENCHES LONGER THAN THE PROPOSED WATERMAIN

1. ALL TRAFFIC CONTROL TO CONFORM TO MOST CURRENT WORKSPACE BC. MINISTRY OF TRANSPORTATION TRAFFIC CONTROL MANUAL, AND THESE DRAWINGS.
2. PRIOR TO CONSTRUCTION, CONTRACTOR TO PREPARE AND SUBMIT TO MRC-DAU A TRAFFIC CONTROL PLAN FOR ACCEPTANCE. DOCUMENT TO INCLUDE DETAILS OF ALL WORK SITES AND LANE CLOSURE REQUIREMENTS.
3. PROVIDE TRAFFIC CONTROL, SIGNAGE, BARRICADES AND ILLUMINATION, AND DETOUR ROUTING AS REQUIRED TO MAINTAIN TRAFFIC FLOW AND EMERGENCY VEHICLE ACCESS.
4. ALL FLAG PERSONS TO HAVE PROOF OF CERTIFICATION. FLAG PERSONS STRICTLY REQUIRED WHEN ONLY ONE OPEN LANE OF TRAFFIC.

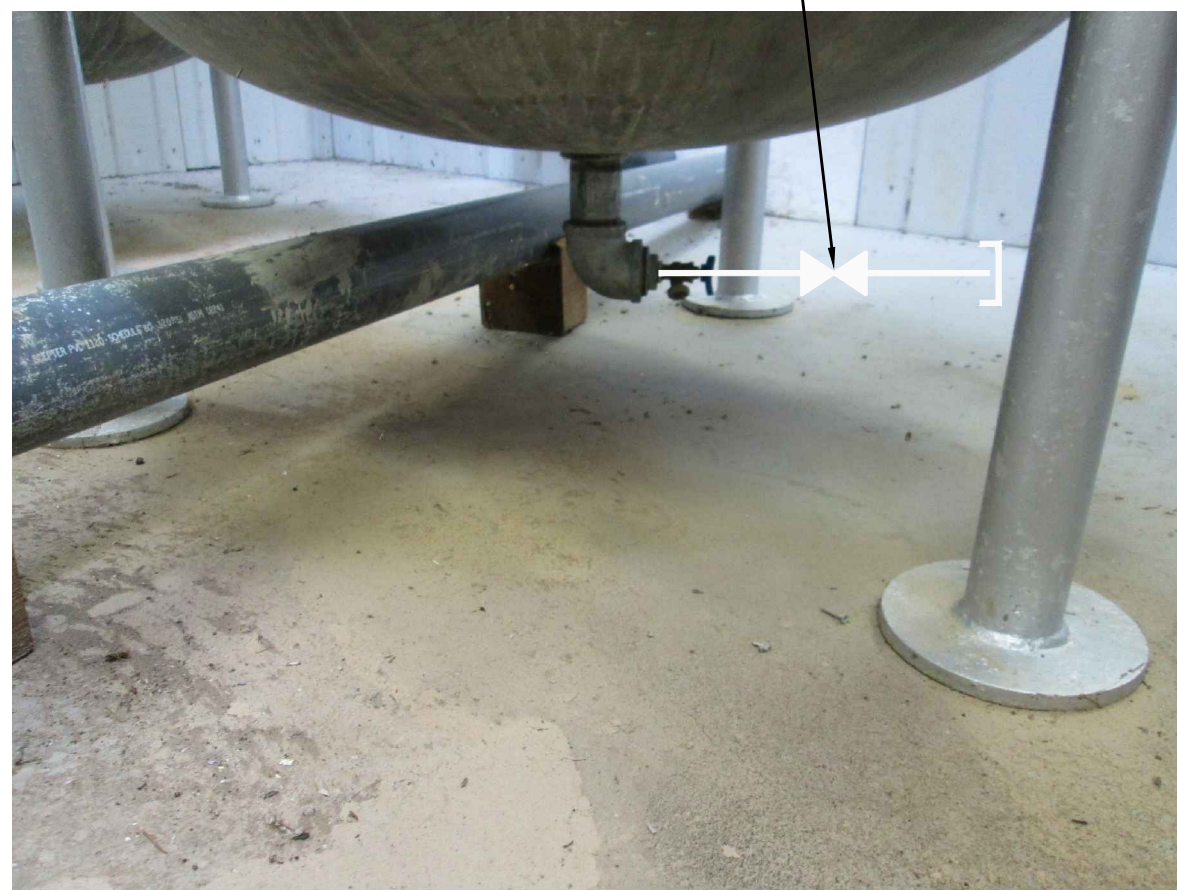




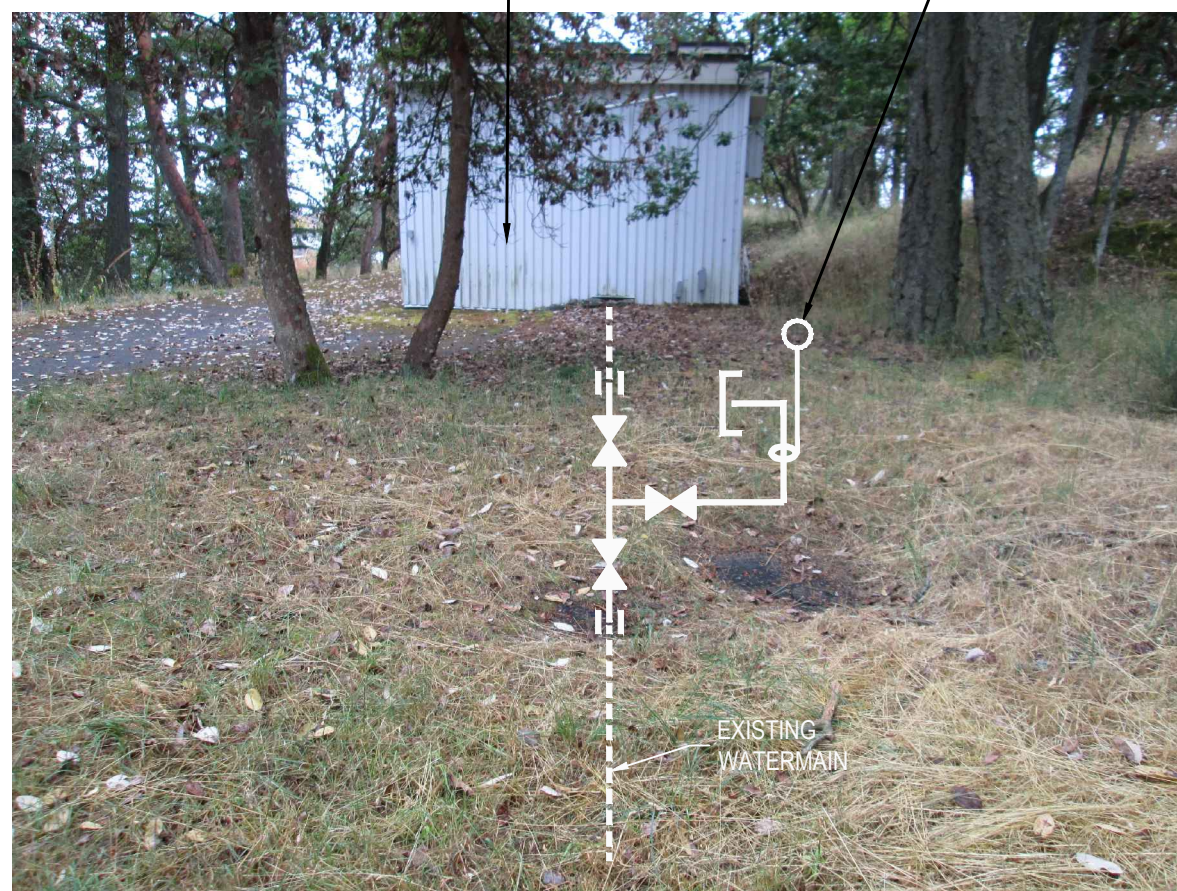
P3 VALVING AND PIPING
UPPER DOMESTIC PUMP HOUSE ROOM 2 (PROVISIONAL)



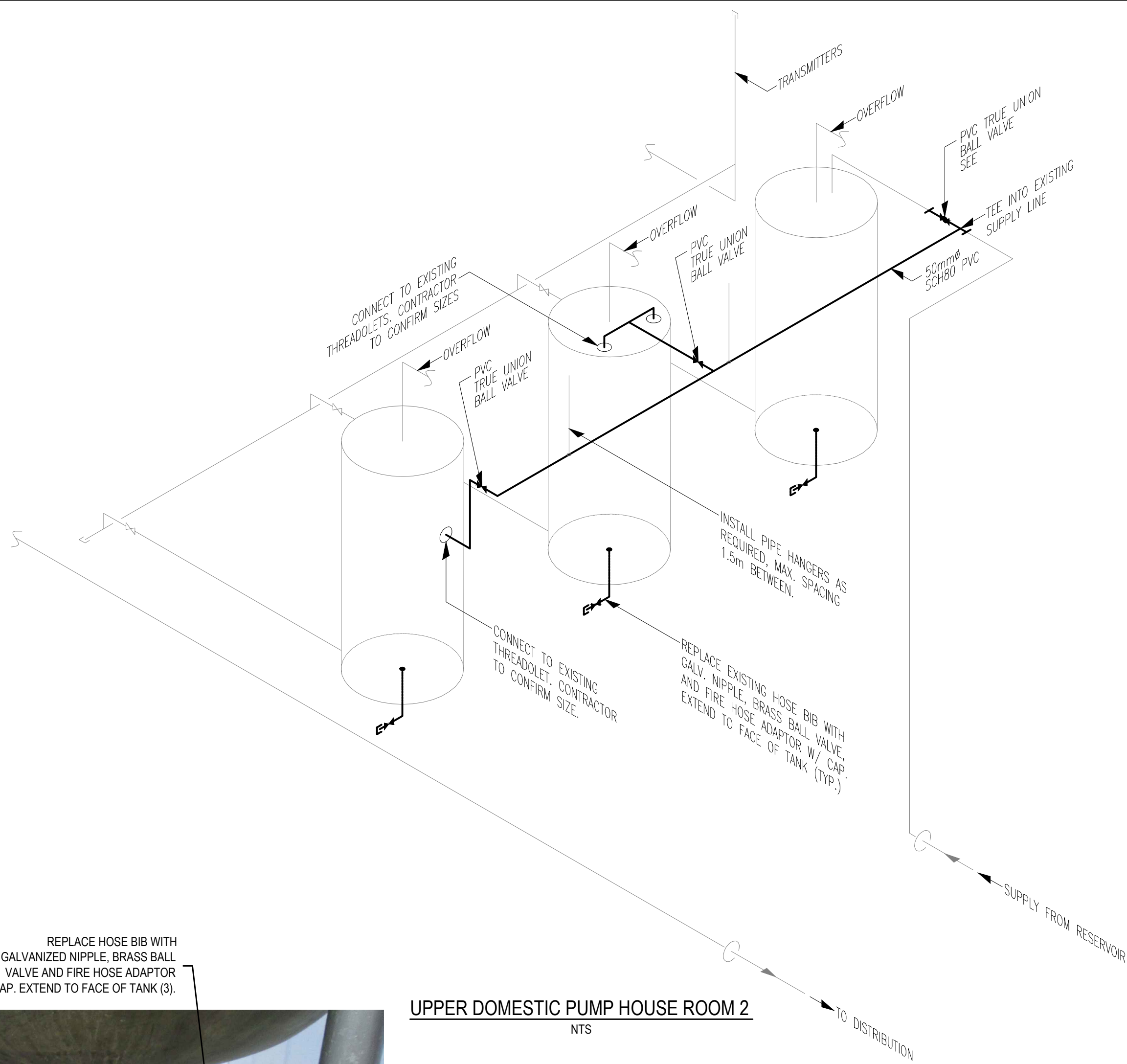
P4 VALVING AND PIPING
UPPER DOMESTIC PUMP HOUSE ROOM 2 (PROVISIONAL)



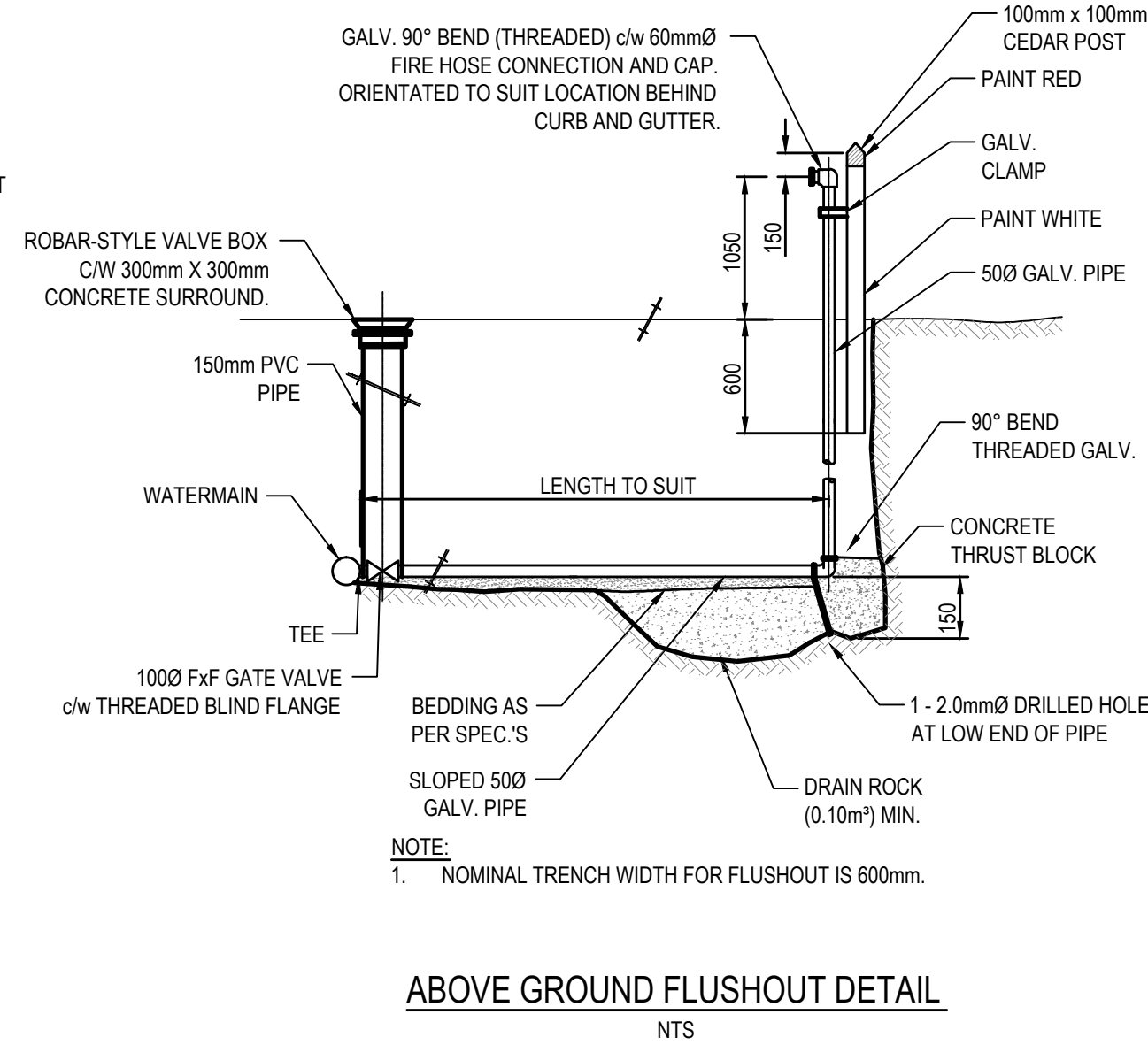
P5 UNDER DRAIN
UPPER DOMESTIC PUMP HOUSE ROOM 2 (PROVISIONAL)



P6 VALVING AND PIPING
UPPER DOMESTIC PUMP HOUSE ROOM 2 (PROVISIONAL)



UPPER DOMESTIC PUMP HOUSE ROOM 2
NTS



ABOVE GROUND FLUSHOUT DETAIL
NTS



Contractor to verify all dimensions
& conditions on site and immediately
notify the engineer of all discrepancies.

2	ISSUED FOR TENDER	25/08/14
1	90% CLIENT REVIEW	14/08/14
revisions	description	date

A	A detail no. no. du detail	A
C	B location drawing no. sur dessin no.	B
	C drawing no. dessin no.	C

project
DOMINION
ASTROPHYSICAL
OBSERVATORY
(DAOV)
WATERMAIN UPGRADES
project

drawing
UPPER DOMESTIC
PUMP HOUSE
DETAILS AND
ISOMETRIC VIEWS
dessin

Designed By	S.M.C.	Conçu par	
Date	2014/07/16	(yyyy/mm/dd)	
Drawn By	S.G.	Dessiné par	
Date	2014/07/16	(yyyy/mm/dd)	
Reviewed By		Examiné par	
Date		(yyyy/mm/dd)	
Approved By		Approuvé par	
Date		(yyyy/mm/dd)	
Tender		Soumission	

Project Manager	Administrateur de projets
Project no.	No. du projet



TP1 Amount Payable – General

1.1 Subject to any other provisions of the contract, Her Majesty shall pay the Contractor, at the times and in the manner hereinafter set out, the amount by which

1.1.1 the aggregate of the amounts described in TP2 exceeds

1.1.2 the aggregate of the amounts described in TP3

and the Contractor shall accept that amount as payment in full satisfaction for everything furnished and done by him in respect of the work to which the payment relates.

TP2 Amounts Payable to the Contractor

2.1 The amounts referred to in TP1.1.1 are the aggregate of

2.1.1 the amounts referred to in the Articles of Agreement, and

2.1.2 the amounts, if any, that are payable to the Contractor pursuant to the General Conditions.

TP3 Amounts Payable to Her Majesty

3.1 The amounts referred to in TP1.1.2 are the aggregate of the amounts, in any, that the Contractor is liable to pay Her Majesty pursuant to the contract.

3.2 When making any payments to the Contractor, the failure of Her Majesty to deduct an amount referred to in TP3.1 from an amount referred to in TP2 shall not constitute a waiver of the right to do so, or an admission of lack of entitlement to do so in any subsequent payment to the Contractor.

TP4 Time of Payment

4.1 In these Terms of Payment

4.1.1 The “payment period” means a period of 30 consecutive days or such other longer period as is agreed between the Contractor and the Departmental Representative.

4.1.2 An amount is “due and payable” when it is due and payable by Her Majesty to the Contractor according to TP4.4, TP4.7 or TP4.10.

4.1.3 An amount is overdue when it is unpaid on the first day following the day upon which it is due and payable.

4.1.4 The “date of payment” means the date of the negotiable instrument of an amount due and payable by the Receiver General for Canada and given for payment.

4.1.5 The “Bank Rate” means the discount rate of interest set by the Bank of Canada in effect at the opening of business on the date of payment.



- 4.2 The Contractor shall, on the expiration of a payment period, deliver to the Departmental Representative in respect of that payment period a written progress claim that fully describes any part of the work that has been completed, and any material that was delivered to the work site but not incorporated into the work during that payment period.
- 4.3 The Departmental Representative shall, not later than ten days after receipt by him of a progress claim referred to in TP4.2,
- 4.3.1 inspect the part of the work and the material described in the progress claim; and
- 4.3.2 issue a progress report, a copy of which the Departmental Representative will give to the Contractor, that indicates the value of the part of the work and the material described in the progress claim that, in the opinion of the Departmental Representative,
- 4.3.2.1 is in accordance with the contract, and
- 4.3.2.2 was not included in any other progress report relating to the contract.
- 4.4 Subject to TP1 and TP4.5 Her Majesty shall, not later than 30 days after receipt by the Departmental Representative of a progress claim referred to in TP4.2, pay the Contractor
- 4.4.1 an amount that is equal to 95% of the value that is indicated in the progress report referred to in TP4.3.2 if a labour and material payment bond has been furnished by the Contractor, or
- 4.4.2 an amount that is equal to 90% of the value that is indicated in the progress report referred to in TP4.3.2 if a labour and material payment bond has not been furnished by the Contractor.
- 4.5 It is a condition precedent to Her Majesty's obligation under TP4.4 that the Contractor has made and delivered to the Departmental Representative,
- 4.5.1 a statutory declaration described in TP4.6 in respect of a progress claim referred to in TP4.2,
- 4.5.2 in the case of the Contractor's first progress claim, a construction schedule in accordance with the relevant sections of the Specifications, and
- 4.5.3 if the requirement for a schedule is specified, an update of the said schedule at the times identified in the relevant sections of the Specifications.
- 4.6 A statutory declaration referred to in TP4.5 shall contain a deposition by the Contractor that
- 4.6.1 up to the date of the Contractor's progress claim, the Contractor has complied with all his lawful obligations with respect to the Labour Conditions; and
- 4.6.2 up to the date of the Contractor's immediately preceding progress claim, all lawful obligations of the Contractor to subcontractors and suppliers of material in respect of the



work under the contract have been fully discharged.

- 4.7 Subject to TP1 and TP4.8, Her Majesty shall, not later than 30 days after the date of issue of an Interim Certificate of Completion referred to in GC44.2, pay the Contractor the amount referred to in TP1 less the aggregate of
- 4.7.1 the sum of all payments that were made pursuant to TP4.4;
 - 4.7.2 an amount that is equal to the Departmental Representative's estimate of the cost to Her Majesty or rectifying defects described in the Interim Certificate of Completion; and
 - 4.7.3 an amount that is equal to the Departmental Representative's estimate of the cost to Her Majesty of completing the parts of the work described in the Interim Certificate of Completion other than the defects referred to in TP4.7.2.
- 4.8 It is a condition precedent to Her Majesty's obligation under TP4.7 that the Contractor has made and delivered to the Departmental Representative,
- 4.8.1 a statutory declaration described in TP4.9 in respect of an Interim Certificate of Completion referred to in GC44.2, and
 - 4.8.2 if so specified in the relevant sections of the Specifications, and update of the construction schedule referred to in TP4.5.2 and the updated schedule shall, in addition to the specified requirements, clearly show a detailed timetable that is acceptable to the Departmental Representative for the completion of any unfinished work and the correction of all defects.
- 4.9 A statutory declaration referred to in TP4.8 shall contain a deposition by the contractor that up to the date of the Interim Certificate of Completion the Contractor has
- 4.9.1 complied with all of the Contractor's lawful obligations with respect to the Labour Conditions;
 - 4.9.2 discharged all of the Contractor's lawful obligations to the subcontractors and suppliers of material in respect of the work under the contract; and
 - 4.9.3 discharged the Contractor's lawful obligations referred to in GC14.6.
- 4.10 Subject to TP1 and TP4.11, Her Majesty shall, not later than 60 days after the date of issue of a Final Certificate of Completion referred to in GC44.1, pay the Contractor the amount referred to in TP1 less the aggregate of
- 4.10.1 the sum of all payments that were made pursuant to TP4.4; and
 - 4.10.2 the sum of all payments that were made pursuant to TP4.7.
- 4.11 It is a condition precedent to Her Majesty's obligation under TP4.10 that the Contractor has made and delivered a statutory declaration described in TP4.12 to the Departmental Representative.



- 4.12 A statutory declaration referred to in TP4.11 shall, in addition to the depositions described in TP4.9, contain a deposition by the Contractor that all of the Contractor's lawful obligations and any lawful claims against the Contractor that arose out of the performance of the contract have been discharged and satisfied.

TP5 Progress Report and Payment Thereunder Not Binding on Her Majesty

- 5.1 Neither a progress report referred to in TP4.3 nor any payment made by Her Majesty pursuant to these Terms of Payment shall be construed as an admission by Her Majesty that the work, material or any part thereof is complete, is satisfactory or is in accordance with the contract.

TP6 Delay in Making Payment

- 6.1 Notwithstanding GC7 any delay by Her Majesty in making any payment when it is due pursuant to these Terms of Payment shall not be a breach of the contract by Her Majesty.

- 6.2 Her Majesty shall pay, without demand from the Contractor, simple interest at the Bank Rate plus 1 -1/4 per centum on any amount which is overdue pursuant to TP4.1.3, and the interest shall apply from and include the day such amount became overdue until the day prior to the date of payment except that

- 6.2.1 interest shall not be payable or paid unless the amount referred to in TP6.2 has been overdue for more than 15 days following

6.2.1.1 the date the said amount became due and payable, or

6.2.1.2 the receipt by the Departmental Representative of the Statutory Declaration referred to in TP4.5, TP4.8 or TP4.11,

whichever is the later, and

- 6.6.2 interest shall not be payable or paid on overdue advance payments if any.

TP7 Right of Set-off

- 7.1 Without limiting any right of set-off or deduction given or implied by law or elsewhere in the contract, Her Majesty may set off any amount payable to Her Majesty by the Contractor under this contract or under any current contract against any amount payable to the Contractor under this contract.

- 7.2 For the purposes of TP7.1, "current contract" means a contract between Her Majesty and the Contractor

- 7.2.1 under which the Contractor has an undischarged obligation to perform or supply work, labour or material, or

- 7.2.2 in respect of which Her Majesty has, since the date of which the Articles of Agreement were made, exercised any right to take the work that is the subject of the contract out of the Contractor's hands.



TP8 Payment in Event of Termination

- 8.1 If the contract is terminated pursuant to GC41, Her Majesty shall pay the Contractor any amount that is lawfully due and payable to the Contractor as soon as is practicable under the circumstances.

TP9 Interest on Settled Claims

- 9.1 Her Majesty shall pay to the Contractor simple interest on the amount of a settled claim at an average Bank Rate plus 1 ¼ per centum from the date the settled claim was outstanding until the day prior to the date of payment.
- 9.2 For the purposes of TP9.1,
- 9.2.1 a claim is deemed to have been settled when an agreement in writing is signed by the Departmental Representative and the Contractor setting out the amount of the claim to be paid by Her Majesty and the items or work for which the said amount is to be paid.
- 9.2.2 an "average Bank Rate" means the discount rate of interest set by the Bank of Canada in effect at the end of each calendar month averaged over the period the settled claim was outstanding.
- 9.2.3 a settled claim is deemed to be outstanding from the day immediately following the date the said claim would have been due and payable under the contract had it not been disputed.
- 9.3 For the purposes of TP9 a claim means a disputed amount subject to negotiation between Her Majesty and the Contractor under the contract.



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GC1 Interpretation

1.1 In the contract

- 1.1.1 where reference is made to a part of the contract by means of numbers preceded by letters, the reference shall be construed to be a reference to the particular part of the contract that is identified by that combination of letters and numbers and to any other part of the contract referred to therein;
- 1.1.2 "contract" means the contract document referred to in the Articles of Agreement;
- 1.1.3 "contract security" means any security given by the Contractor to Her Majesty in accordance with the contract;
- 1.1.4 "Departmental Representative" means the officer or employee of Her Majesty who is designated pursuant to the Articles of Agreement and includes a person specially authorized by him to perform, on his behalf, any of his functions under the contract and is so designated in writing to the Contractor;
- 1.1.5 "material" includes all commodities, articles and things required to be furnished by or for the Contractor under the contract for incorporation into the work;
- 1.1.6 "Minister" includes a person acting for, or if the office is vacant, in place of the Minister and his successors in the office, and his or their lawful deputy and any of his or their representatives appointed for the purposes of the contract;
- 1.1.7 "person" includes, unless the context otherwise requires, a partnership, proprietorship, firm, joint venture, consortium and a corporation;
- 1.1.8 "plant" includes all animals, tools, implements, machinery, vehicles, buildings, structures, equipment and commodities, articles and things other than material, that are necessary for the due performance of the contract;
- 1.1.9 "subcontractor" means a person to whom the Contractor has, subject to GC4, subcontracted the whole or any part of the work;
- 1.1.10 "superintendent" means the employee of the Contractor who is designated by the Contractor to act pursuant to GC19;
- 1.1.11 "work includes, subject only to any express stipulation in the contract to the contrary, everything that is necessary to be done, furnished or delivered by the Contractor to perform the contract.

1.2 The headings in the contract documents, other than in the Plans and Specifications, form no part of the contract but are inserted for convenience of reference only.

1.3 In interpreting the contract, in the event of discrepancies or conflicts between anything in the Plans and Specifications and the General Conditions, the General Conditions govern.



1.4 In interpreting the Plans and Specifications, in the event of discrepancies or conflicts between

1.4.1 the Plans and Specifications, the Specifications govern;

1.4.2 the Plans, the Plans drawn with the largest scale govern; and

1.4.3 figured dimensions and scaled dimensions, the figured dimensions govern.

GC2 Successors and Assigns

2.1 The contract shall inure to the benefit of and be binding upon the parties hereto and their lawful heirs, executors, administrators, successors and assigns.

GC3 Assignment of Contract

3.1 The contract may not be assigned by the Contractor, either in whole or in part, without the written consent of the Minister.

GC4 Subcontracting by Contractor

4.1 Subject to this General Condition, the Contractor may subcontract any part of the work.

4.2 The Contractor shall notify the Departmental Representative in writing of his intention to subcontract.

4.3 A notification referred to in GC4.2 shall identify the part of the work, and the subcontractor with whom it is intended to subcontract.

4.4 The Departmental Representative may object to the intended subcontracting by notifying the Contractor in writing within six days of receipt by the Departmental Representative of a notification referred to in GC4.2.

4.5 If the Departmental Representative objects to a subcontracting pursuant to GC4.4, the Contractor shall not enter into the intended subcontract.

4.6 The contractor shall not, without the written consent of the Departmental Representative, change a subcontractor who has been engaged by him in accordance with this General Condition.

4.7 Every subcontract entered into by the Contractor shall adopt all of the terms and conditions of this contract that are of general application.

4.8 Neither a subcontracting nor the Departmental Representative's consent to a subcontracting by the Contractor shall be construed to relieve the Contractor from any obligation under the contract or to impose any liability upon Her Majesty.

GC5 Amendments



- 5.1 No amendment or change in any of the provisions of the contract shall have any force or effect until it is reduced to writing.

GC6 No Implied Obligations

- 6.1 No implied terms or obligations of any kind by or on behalf of Her Majesty shall arise from anything in the contract and the express covenants and agreements therein contained and made by Her Majesty are the only covenants and agreements upon which any rights against Her Majesty are to be founded.
- 6.2 The contract supersedes all communications, negotiations and agreements, either written or oral, relating to the work that were made prior to the date of the contract.

GC7 Time of Essence

- 7.1 Time is of the essence of the contract.

GC8 Indemnification by Contractor

- 8.1 The Contractor shall indemnify and save Her Majesty harmless from and against all claims, demand, losses, costs, damages, actions, suits, or proceedings by whomever made, brought or prosecuted and in any manner based upon, arising out of, related to, occasioned by or attributable to the activities of the Contractor, his servants, agents, subcontractors and sub-subcontractors in performing the work including an infringement or an alleged infringement of a patent of invention or any other kind of intellectual property.
- 8.2 For the purpose of GC8.1, "activities" includes any act improperly carried out, any omission to carry out an act and any delay in carrying out an act.

GC9 Indemnification by Her Majesty

- 9.1 Her Majesty shall, subject to the Crown Liability Act, the Patent Act, and any other law that affects Her Majesty's rights, powers, privileges or obligations, indemnify and save the Contractor harmless from and against all claims, demands, losses, costs, damage, actions, suits or proceedings arising out of his activities under the contract that are directly attributable to
- 9.1.1 lack of or a defect in Her Majesty's title to the work site whether real or alleged; or
- 9.1.2 an infringement or an alleged infringement by the Contractor of any patent of invention or any other kind of intellectual property occurring while the Contractor was performing any act for the purposes of the contract employing a model, plan or design or any other thing related to the work that was supplied by Her Majesty to the Contractor.

GC10 Members of House of Commons Not to Benefit



- 10.1 As required by the Parliament of Canada Act, it is an express condition of the contract that no member of the House of Commons shall be admitted to any share of part of the contract or to any benefit arising therefrom.

GC11 Notices

- 11.1 Any notice, consent, order, decision, direction or other communication, other than a notice referred to in GC11.4, that may be given to the Contractor pursuant to the contract may be given in any manner.
- 11.2 Any notice, consent, order, decision, direction or other communication required to be given in writing, to any party pursuant to the contract shall, subject to GC11.4, be deemed to have been effectively given
- 11.2.1 to the Contractor, if delivered personally to the Contractor or the Contractor's superintendent, or forwarded by mail, telex or facsimile to the Contractor at the address set out in A4.1, or
- 11.2.2 to Her Majesty, if delivered personally to the Departmental Representative, or forwarded by mail, telex or facsimile to the Departmental Representative at the address set out in A1.2.1.
- 11.3 Any such notice, consent, order, decision, direction or other communication given in accordance with GC11.2 shall be deemed to have been received by either party
- 11.3.1 if delivered personally, on the day that it was delivered,
- 11.3.2 if forwarded by mail, on the earlier of the day it was received and the sixth day after it was mailed, and
- 11.3.3 if forwarded by telex or facsimile, 24 hours after it was transmitted.
- 11.4 A notice given under GC38.1.1, GC40 and GC41, if delivered personally, shall be delivered to the Contractor if the Contractor is doing business as sole proprietor or, if the Contractor is a partnership or corporation, to an officer thereof.

GC12 Material, Plant and Real Property Supplied by Her Majesty

- 12.1 Subject to GC12.2, the Contractor is liable to Her Majesty for any loss of or damage to material, plant or real property that is supplied or placed in the care, custody and control of the Contractor by Her Majesty for use in connection with the contract, whether or not that loss or damage is attributable to causes beyond the Contractor's control.
- 12.2 The Contractor is not liable to Her Majesty for any loss or damage to material, plant or real property referred to in GC12.1 if that loss or damage results from and is directly attributable to reasonable wear and tear.
- 12.3 The Contractor shall not use any material, plant or real property referred to in GC12.1 except for



the purpose of performing this contract.

- 12.4 When the Contractor fails to make good any loss or damage for which he is liable under GC12.1 within a reasonable time after being required to do so by the Departmental Representative, the Departmental Representative may cause the loss or damage to be made good at the Contractor's expense, and the Contractor shall thereupon be liable to Her Majesty for the cost thereof and shall, on demand, pay to Her Majesty an amount equal to that cost.
- 12.5 The Contractor shall keep such records of all material, plant and real property referred to in GC12.1 as the Departmental Representative from time to time requires and shall satisfy the Departmental Representative, when requested, that such material, plant and real property are at the place and in the condition which they ought to be.

GC13 Material, Plant and Real Property Become Property of Her Majesty

- 13.1 Subject to GC14.7 all material and plant and the interest of the Contractor in all real property, licenses, powers and privileges purchased, used or consumed by the Contractor for the contract shall, after the time of their purchase, use or consumption be the property of Her Majesty for the purposes of the work and they shall continue to be the property of Her Majesty.
- 13.1.1 in the case of material, until the Departmental Representative indicates that he is satisfied that it will not be required for the work, and
- 13.1.2 in the case of plant, real property, licenses, powers and privileges, until the Departmental Representative indicates that he is satisfied that the interest vested in Her Majesty therein is no longer required for the purposes of the work.
- 13.2 Material or plant that is the property of Her Majesty by virtue of GC13.1 shall not be taken away from the work site or used or disposed of except for the purposes of the work without the written consent of the Departmental Representative.
- 13.3 Her Majesty is not liable for loss of or damage from any cause to the material or plant referred to in GC13.1 and the Contractor is liable for such loss or damage notwithstanding that the material or plant is the property of Her Majesty.

GC14 Permits and Taxes Payable

- 14.1 The Contractor shall, within 30 days after the date of the contract, tender to a municipal authority an amount equal to all fees and charges that would be lawfully payable to that municipal authority in respect of building permits as if the work were being performed for a person other than Her Majesty.
- 14.2 Within 10 days of making a tender pursuant to GC14.1, the Contractor shall notify the Departmental Representative of his action and of the amount tendered and whether or not the municipal authority has accepted that amount.
- 14.3 If the municipal authority does not accept the amount tendered pursuant to GC14.1 the Contractor shall pay that amount to Her Majesty within 6 days after the time stipulated in GC14.2.



- 14.4 For the purposes of GC14.1 to GC14.3 "municipal authority" means any authority that would have jurisdiction respecting permission to perform the work if the owner were not Her Majesty.
- 14.5 Notwithstanding the residency of the Contractor, the Contractor shall pay any applicable tax arising from or related to the performance of the work under the contract.
- 14.6 In accordance with the Statutory Declaration referred to in TP4.9, a Contractor who has neither residence nor place of business in the province in which work under the contract is being performed shall provide Her Majesty with proof of registration with the provincial sales tax authorities in the said province.
- 14.7 For the purpose of the payment of any applicable tax or the furnishing of security for the payment of any applicable tax arising from or related to the performance of the work under the contract, the Contractor shall, notwithstanding the fact that all material, plant and interest of the Contractor in all real property, licenses, powers and privileges, have become the property of Her Majesty after the time of purchase, be liable, as a user or consumer, for the payment or for the furnishing of security for the payment of any applicable tax payable, at the time of the use or consumption of that material, plant or interest of the Contractor in accordance with the relevant legislation.

GC15 Performance of Work under Direction of Departmental Representative

- 15.1 The Contractor shall
- 15.1.1 permit the Departmental Representative to have access to the work and its site at all times during the performance of the contract;
 - 15.1.2 furnish the Departmental Representative with such information respecting the performance of the contract as he may require; and
 - 15.1.3 give the Departmental Representative every possible assistance to enable the Departmental Representative to carry out his duty to see that the work is performed in accordance with the contract and to carry out any other duties and exercise any powers specially imposed or conferred on the Departmental Representative under the contract.

CG16 Cooperation with Other Contractors

- 16.1 Where, in the opinion of the Departmental Representative, it is necessary that other contractors or workers with or without plant and material, be sent onto the work or its site, the Contractor shall, to the satisfaction of the Departmental Representative, allow them access and cooperate with them in the carrying out of their duties and obligation.
- 16.2 If
- 16.2.1 the sending onto the work or its site of other contractors or workers pursuant to GC16.1 could not have been reasonably foreseen or anticipated by the Contractor when entering into the contract, and



16.2.2 the Contractor incurs, in the opinion of the Departmental Representative, extra expense in complying with GC16.1, and

16.2.3 The Contractor has given the Departmental Representative written notice of his claim for the extra expense referred to in GC16.2.2 within 30 days of the date that the other contractors or workers were sent onto the work or its site,

Her Majesty shall pay the Contractor the cost, calculated in accordance with GC48 to GC50, of the extra labour, plant and material that was necessarily incurred.

GC17 Examination of Work

17.1 If, at any time after the commencement of the work but prior to the expiry of the warranty or guarantee period, the Departmental Representative has reason to believe that the work or any part thereof has not been performed in accordance with the contract, the Departmental Representative may have that work examined by an expert of his choice.

17.2 If, as a result of an examination of the work referred to in GC17.1, it is established that the work was not performed in accordance with the contract, then, in addition to and without limiting or otherwise affecting any of Her Majesty's rights and remedies under the contract either at law or in equity, the Contractor shall pay Her Majesty, on demand, all reasonable costs and expenses that were incurred by Her Majesty in having that examination performed.

GC18 Clearing of Site

18.1 The Contractor shall maintain the work and its site in a tidy condition and free from the accumulation of waste material and debris, in accordance with any directions of the Departmental Representative.

18.2 Before the issue of an interim certificate referred to in GC44.2, the Contractor shall remove all the plant and material not required for the performance of the remaining work, and all waste material and other debris, and shall cause the work and its site to be clean and suitable for occupancy by Her Majesty's servants, unless otherwise stipulated in the contract.

18.3 Before the issue of a final certificate referred to in GC44.1, the Contractor, shall remove from the work and its site all of the surplus plant and material and any waste material and other debris.

18.4 The Contractor's obligations described in GC18.1 to GC18.3 do not extend to waste material and other debris caused by Her Majesty's servants or contractors and workers referred to in GC16.1.

GC19 Contractor's Superintendent

19.1 The Contractor shall, forthwith upon the award of the contract, designate a superintendent.

19.2 The Contractor shall forthwith notify the Departmental Representative of the name, address and telephone number of a superintendent designate pursuant to GC19.1.



- 19.3 A superintendent designated pursuant to GC19.1 shall be in full charge of the operations of the Contractor in the performance of the work and is authorized to accept any notice, consent, order, direction, decision or other communication on behalf of the Contractor that may be given to the superintendent under the contract.
- 19.4 The Contractor shall, until the work has been completed, keep a competent superintendent at the work site during working hours.
- 19.5 The Contractor shall, upon the request of the Departmental Representative, remove any superintendent who, in the opinion of the Departmental Representative, is incompetent or has been conducting himself improperly and shall forthwith designate another superintendent who is acceptable to the Departmental Representative.
- 19.6 Subject to GC19.5, the Contractor shall not substitute a superintendent without the written consent of the Departmental Representative.
- 19.7 A breach by the Contractor of GC19.6 entitles the Departmental Representative to refuse to issue any certificate referred to in GC44 until the superintendent has returned to the work site or another superintendent who is acceptable to the Departmental Representative has been substituted.

GC20 National Security

- 20.1 If the Minister is of the opinion that the work is of a class or kind that involves the national security, he may order the Contractor
- 20.1.1 to provide him with any information concerning persons employed or to be employed by him for purposes of the contract; and
 - 20.1.2 to remove any person from the work and its site if, in the opinion of the Minister, that person may be a risk to the national security.
- 20.2 The Contractor shall, in all contracts with persons who are to be employed in the performance of the contract, make provision for his performance of any obligation that may be imposed upon him under GC19 to GC21.
- 20.3 The Contractor shall comply with an order of the Minister under GC20.1

GC21 Unsuitable Workers

- 21.1 The Contractor shall, upon the request of the Departmental Representative, remove any person employed by him for purposes of the contract who, in the opinion of the Departmental Representative, is incompetent or has conducted himself improperly, and the Contractor shall not permit a person who has been removed to return to the work site.

GC22 Increased or Decreased Costs



- 22.1 The amount set out in the Articles of Agreement shall not be increased or decreased by reason of any increase or decrease in the cost of the work that is brought about by an increase or decrease in the cost of labour, plant or material or any wage adjustment arising pursuant to the Labour Conditions.
- 22.2 Notwithstanding GC22.1 and GC35, an amount set out in the Articles of Agreement shall be adjusted in the manner provided in GC22.3, if any change in a tax imposed under the Excise Act, the Excise Tax Act, the Old Age Security Act, the Customs Act, the Customs Tariff or any provincial sales tax legislation imposing a retail sales tax on the purchase of tangible personal property incorporated into Real Property
- 22.2.1 occurs after the date of the submission by the Contractor of his tender for the contract,
- 22.2.2 applies to material, and
- 22.2.3 affects the cost to the Contractor of that material.
- 22.3 If a change referred to in GC22.2 occurs, the appropriate amount set out in the Articles of Agreement shall be increased or decreased by an amount equal to the amount that is established by an examination of the relevant records of the Contractor referred to in GC51 to be the increase or decrease in the cost incurred that is directly attributable to that change.
- 22.4 For the purpose of GC22.2, where a tax is changed after the date of submission of the tender but public notice of the change has been given by the Minister of Finance before that date, the change shall be deemed to have occurred before the date of submission of the tender.

GC23 Canadian Labour and Material

- 23.1 The Contractor shall use Canadian labour and material in the performance of the work to the full extent to which they are procurable, consistent with proper economy and expeditious carrying out of the work.
- 23.2 Subject to GC23.1, the Contractor shall, in the performance of the work, employ labour from the locality where the work is being performed to the extent to which it is available, and shall use the offices of the Canada Employment Centres for the recruitment of workers wherever practicable.
- 23.3 Subject to GC23.1 and GC23.2, the Contractor shall, in the performance of the work, employ a reasonable proportion of persons who have been on active service with the armed forces of Canada and have been honourably discharged therefrom.

GC24 Protection of Work and Documents

- 24.1 The Contractor shall guard or otherwise protect the work and its site, and protect the contract, specifications, plans, drawings, information, material, plant and real property, whether or not they are supplied by Her Majesty to the Contractor, against loss or damage from any cause, and he shall not use, issue, disclose or dispose of them without the written consent of the Minister, except as may be essential for the performance of the work.



- 24.2 If any document or information given or disclosed to the Contractor is assigned a security rating by the person who gave or disclosed it, the Contractor shall take all measures directed by the Departmental Representative to be taken to ensure the maintenance of the degree of security that is ascribed to that rating.
- 24.3 The Contractor shall provide all facilities necessary for the purpose of maintaining security, and shall assist any person authorized by the Minister to inspect or to take security measures in respect of the work and its site.
- 24.4 The Departmental Representative may direct the Contractor to do such things and to perform such additional work as the Departmental Representative considers reasonable and necessary to ensure compliance with or to remedy a breach of GC24.1 to GC24.3.

GC25 Public Ceremonies and Signs

- 25.1 The Contractor shall not permit any public ceremony in connection with the work without the prior consent of the Minister.
- 25.2 The Contractor shall not erect or permit the erection of any sign or advertising on the work or its site without the prior consent of the Departmental Representative.

GC26 Precautions against Damage, Infringement of Rights, Fire, and Other Hazards

- 26.1 The Contractor shall, at his own expense, do whatever is necessary to ensure that
 - 26.1.1 no person, property, right, easement or privilege is injured, damaged or infringed by reasons of the Contractor's activities in performing the contract;
 - 26.1.2 pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted or endangered by the performance or existence of the work or plant;
 - 26.1.3 fire hazards in or about the work or its site are eliminated and, subject to any direction that may be given by the Departmental Representative, any fire is promptly extinguished;
 - 26.1.4 the health and safety of all persons employed in the performance of the work is not endangered by the method or means of its performance;
 - 26.1.5 adequate medical services are available to all persons employed on the work or its site at all times during the performance of the work;
 - 26.1.6 adequate sanitation measures are taken in respect of the work and its site; and
 - 26.1.7 all stakes, buoys and marks placed on the work or its site by or under the authority of the Departmental Representative are protected and are not removed, defaced, altered or destroyed.
- 26.2 The Departmental Representative may direct the Contractor to do such things and to perform such additional work as the Departmental Representative considers reasonable and necessary to ensure



compliance with or to remedy a breach of GC26.1.

- 26.3 The Contractor shall, at his own expense, comply with a direction of the Departmental Representative made under GC26.2.

GC27 Insurance

- 27.1 The Contractor shall, at his own expense, obtain and maintain insurance contracts in respect of the work and shall provide evidence thereof to the Departmental Representative in accordance with the requirements of the Insurance Conditions "E".

- 27.2 The insurance contracts referred to in GC27.1 shall

27.2.1 be in a form, of the nature, in the amounts, for the periods and containing the terms and conditions specified in Insurance Conditions "E", and

27.2.2 provide for the payment of claims under such insurance contracts in accordance with GC28.

GC28 Insurance Proceeds

- 28.1 In the case of a claim payable under a Builders Risk/Installation (All Risks) insurance contract maintained by the Contractor pursuant to GC27, the proceeds of the claim shall be paid directly to Her Majesty, and

28.1.1 the monies so paid shall be held by Her Majesty for the purposes of the contract, or

28.1.2 if Her Majesty elects, shall be retained by Her Majesty, in which event they vest in Her Majesty absolutely.

- 28.2 In the case of a claim payable under a General Liability insurance contract maintained by the Contractor pursuant to GC27, the proceeds of the claim shall be paid by the insurer directly to the claimant.

- 28.3 If an election is made pursuant to GC28.1, the Minister may cause an audit to be made of the accounts of the Contractor and of Her Majesty in respect of the part of the work that was lost, damaged or destroyed for the purpose of establishing the difference, if any, between

28.3.1 the aggregate of the amount of the loss or damage suffered or sustained by Her Majesty, including any cost incurred in respect of the clearing and cleaning of the work and its site and any other amount that is payable by the Contractor to Her Majesty under the contract, minus any monies retained pursuant to GC28.12, and

28.3.2 the aggregate of the amounts payable by Her Majesty to the Contractor pursuant to the contract up to the date of the loss or damage.

- 28.4 A difference that is established pursuant to GC28.3 shall be paid forthwith by the party who is determined by the audit to be the debtor to the party who is determined by the audit to be the



creditor.

- 28.5 When payment of a deficiency has been made pursuant to GC28.4, all rights and obligations of Her Majesty and the Contractor under the contract shall, with respect only to the part of the work that was the subject of the audit referred to in GC28.3, be deemed to have been expended and discharged.
- 28.6 If an election is not made pursuant to GC28.1.2 the Contractor shall, subject to GC28.7, clear and clean the work and its site and restore and replace the part of the work that was lost, damaged or destroyed at his own expense as if that part of the work had not yet been performed.
- 28.7 When the Contractor clears and cleans the work and its site and restores and replaces the work referred to in GC 28.6, Her Majesty shall pay him out of the monies referred to in GC28.1 so far as they will thereunto extend.
- 28.8 Subject to GC28.7, payment by Her Majesty pursuant to GC28.7 shall be made in accordance with the contract but the amount of each payment shall be 100% of the amount claimed notwithstanding TP4.4.1 and TP4.4.2.

GC29 Contract Security

- 29.1 The Contractor shall obtain and deliver contract security to the Departmental Representative in accordance with the provisions of the Contract Security Conditions.
- 29.2 If the whole or a part of the contract security referred to in GC29.1 is in the form of a security deposit, it shall be held and disposed of in accordance with GC43 and GC45.
- 29.3 If a part of the contract security referred to in GC29.1 is in the form of a labour and material payment bond, the Contractor shall post a copy of that bond on the work site.

GC30 Changes in the Work

- 30.1 Subject to GC5, the Departmental Representative may, at any time before he issues his Final Certificate of Completion,
- 30.1.1 order work or material in addition to that provided for in the Plans and Specifications; and
- 30.1.2 delete or change the dimensions, character, quantity, quality, description, location or position of the whole or any part of the work or material provided for in the Plans and Specifications or in any order made pursuant to GC30.1.1,
- if that additional work or material, deletion, or change is, in his opinion, consistent with the general intent of the original contract.
- 30.2 The Contractor shall perform the work in accordance with such orders, deletions and changes that are made by the Departmental Representative pursuant to GC30.1 from time to time as if they had appeared in and been part of the Plans and Specifications.



- 30.3 The Departmental Representative shall determine whether or not anything done or omitted by the Contractor pursuant to an order, deletion or change referred to in GC30.1 increased or decreased the cost of the work to the Contractor.
- 30.4 If the Departmental Representative determines pursuant to GC30.3 that the cost of the work to the Contractor has been increased, Her Majesty shall pay the Contractor the increased cost that the Contractor necessarily incurred for the additional work calculated in accordance with GC49 or GC50.
- 30.5 If the Departmental Representative determines pursuant to GC30.3 that the cost of the work to the Contractor has been decreased, Her Majesty shall reduce the amount payable to the Contractor under the contract by an amount equal to the decrease in the cost caused by the deletion or change referred to in GC30.1.2 and calculated in accordance with GC49.
- 30.6 GC30.3 to GC30.5 are applicable only to a contract or a portion of a contract for which a Fixed Price Arrangement is stipulated in the contract.
- 30.7 An order, deletion or change referred to in GC30.1 shall be in writing, signed by the Departmental Representative and given to the Contractor in accordance with GC11.

GC31 Interpretation of Contract by Departmental Representative

- 31.1 If, at any time before the Departmental Representative has issued a Final Certificate of Completion referred to in GC44.1, any question arises between the parties about whether anything has been done as required by the contract or about what the Contractor is required by the contract to do, and, in particular but without limiting the generality of the foregoing, about
- 31.1.1 the meaning of anything in the Plans and Specification,
 - 31.1.2 the meaning to be given to the Plans and Specifications in case of any error therein, omission therefrom, or obscurity or discrepancy in their working or intention,
 - 31.1.3 whether or not the quality or quantity of any material or workmanship supplied or proposed to be supplied by the Contractor meets the requirements of the contract,
 - 31.1.4 whether or not the labour, plant or material provided by the Contractor for performing the work and carrying out the contract are adequate to ensure that the work will be performed in accordance with the contract and that the contract will be carried out in accordance with its terms,
 - 31.1.5 what quantity of any kind of work has been completed by the Contractor, or
 - 31.1.6 the timing and scheduling of the various phases of the performance of the work,
- the question shall be decided by the Departmental Representative whose decision shall be final and conclusive in respect of the work.
- 31.2 The Contractor shall perform the work in accordance with any decisions of the Departmental



Representative that are made under GC31.1 and in accordance with any consequential directions given by the Departmental Representative.

GC32 Warranty and Rectification of Defects in Work

- 32.1 Without restricting any warranty or guarantee implied or imposed by law or contained in the contract documents, the Contractor shall, at his own expense,
- 32.1.1 rectify and make good any defect or fault that appears in the work or comes to the attention of the Minister with respect to those parts of the work accepted in connection with the Interim Certificate of Completion referred to in GC44.2 within 12 months from the date of the Interim Certificate of Completion;
- 32.1.2 rectify and make good any defect or fault that appears in or comes to the attention of the Minister in connection with those parts of the work described in the Interim Certificate of Completion referred to in GC44.2 within 12 months from the date of the Final Certificate of Completion referred to in GC44.1.
- 32.2 The Departmental Representative may direct the Contractor to rectify and make good any defect or fault referred to in GC32.1 or covered by any other expressed or implied warranty or guarantee.
- 32.3 A direction referred to in GC32.2 shall be in writing, may include a stipulation in respect of the time within which a defect or fault is required to be rectified and made good by the Contractor, and shall be given to the Contractor in accordance with GC11.
- 32.4 The Contractor shall rectify and make good any defect or fault described in a direction given pursuant to GC32.2 within the time stipulated therein.

GC33 Non-Compliance by Contractor

- 33.1 If the Contractor fails to comply with any decision or direction given by the Departmental Representative pursuant to GC18, GC24, GC26, GC31 or GC32, the Departmental Representative may employ such methods as he deems advisable to do that which the Contractor failed to do.
- 33.2 The Contractor shall, on demand, pay Her Majesty an amount that is equal to the aggregate of all cost, expenses and damage incurred or sustained by Her Majesty by reason of the Contractor's failure to comply with any decision or direction referred to in GC33.1, including the cost of any methods employed by the Departmental Representative pursuant to GC33.1.

GC34 Protesting Departmental Representative's Decisions

- 34.1 The Contractor may, within ten days after the communication to him of any decision or direction referred to in GC30.3 or GC33.1, protest that decision or direction.
- 34.2 A protest referred to in GC34.1 shall be in writing, contain full reasons for the protest, be signed



by the Contractor and be given to Her Majesty by delivery to the Departmental Representative.

- 34.3 If the Contractor gives a protest pursuant to GC34.2, any compliance by the Contractor with the decision or direction that was protested shall not be construed as an admission by the Contractor of the correctness of that decision or direction, or prevent the Contractor from taking whatever action he considers appropriate in the circumstances.
- 34.4 The giving of a protest by the Contractor pursuant to GC34.2 shall not relieve him from complying with the decision or direction that is the subject of the protest.
- 34.5 Subject to GC34.6, the Contractor shall take any action referred to in GC34.3 within three months after the date that a Final Certificate of Completion is issued under GC44.1 and not afterwards.
- 34.6 The Contractor shall take any action referred to in GC34.3 resulting from a direction under GC32 within three months after the expiry of a warranty or guarantee period and not afterwards.
- 34.7 Subject to GC34.8, if Her Majesty determines that the Contractor's protest is justified, Her Majesty shall pay the Contractor the cost of the additional labour, plant and material necessarily incurred by the Contractor in carrying out the protested decision or direction.
- 34.8 Costs referred to in GC34.7 shall be calculated in accordance with GC48 to GC50.

GC35 Changes in Soil Conditions and Neglect or Delay by Her Majesty

- 35.1 Subject to GC35.2 no payment, other than a payment that is expressly stipulated in the contract, shall be made by Her Majesty to the Contractor for any extra expense or any loss or damage incurred or sustained by the Contractor.

- 35.2 If the Contractor incurs or sustains any extra expense or any loss or damage that is directly attributable to

35.2.1 a substantial difference between the information relating to soil conditions at the work site that is contained in the Plans and Specifications or other documents supplied to the Contractor for his use in preparing his tender or a reasonable assumption of fact based thereon made by the Contractor, and the actual soil conditions encountered by the Contractor at the work site during the performance of the contract, or

35.2.2 any neglect or delay that occurs after the date of the contract on the part of Her Majesty in providing any information or in doing any act that the contract either expressly requires Her Majesty to do or that would ordinarily be done by an owner in accordance with the usage of the trade,

he shall, within ten days of the date the actual soil conditions described in GC35.2.1 were encountered or the neglect or delay described in GC35.2.2 occurred, give the Departmental Representative written notice of his intention to claim for that extra expense or that loss or damage.

- 35.3 When the Contractor has given a notice referred to in GC35.2, he shall give the Departmental Representative a written claim for extra expense or loss or damage within 30 days of the date that



a Final Certificate of Completion referred to in GC44.1 is issued and not afterwards.

- 35.4 A written claim referred to in GC35.3 shall contain a sufficient description of the facts and circumstances of the occurrence that is the subject of the claim to enable the Departmental Representative to determine whether or not the claim is justified and the Contractor shall supply such further and other information for that purpose as the Departmental Representative requires from time to time.
- 35.5 If the Departmental Representative determines that a claim referred to in GC35.3 is justified, Her Majesty shall make an extra payment to the Contractor in an amount that is calculated in accordance with GC47 to GC50.
- 35.6 If, in the opinion of the Departmental Representative, an occurrence described in GC35.2.1 results in a savings of expenditure by the Contractor in performing the contract, the amount set out in the Articles of Agreement shall, subject to GC35.7, be reduced by an amount that is equal to the saving.
- 35.7 The amount of the saving referred to in GC35.6 shall be determined in accordance with GC47 to GC49.
- 35.8 If the Contractor fails to give a notice referred to in GC35.2 and a claim referred to in GC35.3 within the times stipulated, an extra payment shall not be made to him in respect of the occurrence.

GC36 Extension of Time

- 36.1 Subject to GC36.2, the Departmental Representative may, on the application of the Contractor made before the day fixed by the Articles of Agreement for completion of the work or before any other date previously fixed under this General Condition, extend the time for its completion by fixing a new date if, in the opinion of the Departmental Representative, causes beyond the control of the Contractor have delayed its completion.
- 36.2 An application referred to in GC36.1 shall be accompanied by the written consent of the bonding company whose bond forms part of the contract security.

GC37 Assessments and Damages for Late Completion

- 37.1 For the purposes of this General Condition
- 37.1.1 the work shall be deemed to be completed on the date that an Interim Certificate of Completion referred to in GC44.2 is issued, and
- 37.1.2 "period of delay" means the number of days commencing on the day fixed by the Articles of Agreement for completion of the work and ending on the day immediately preceding the day on which the work is completed but does not include any day within a period of extension granted pursuant to GC36.1, and any other day on which, in the opinion of the Departmental Representative, completion of the work was delayed for reasons beyond the control of the Contractor.



- 37.2 If the Contractor does not complete the work by the day fixed for its completion by the Articles of Agreement but completes it thereafter, the Contractor shall pay Her Majesty an amount equal to the aggregate of
- 37.2.1 all salaries, wages and travelling expenses incurred by Her Majesty in respect of persons overseeing the performance of the work during the period of delay;
 - 37.2.2 the cost incurred by Her Majesty as a result of the inability to use the completed work for the period of delay; and
 - 37.2.3 all other expenses and damages incurred or sustained by Her Majesty during the period of delay as a result of the work not being completed by the day fixed for its completion.
- 37.3 The Minister may waive the right of Her Majesty to the whole or any part of the amount payable by the Contractor pursuant to GC37.2 I, in the opinion of the Minister, it is in the public interest to do so.

GC38 Taking the Work Out of the Contractor's Hands

- 38.1 The Minister may, at his sole discretion, by giving a notice in writing to the Contractor in accordance with GC11, take all or any part of the work out of the Contractor's hands, and may employ such means as he sees fit to have the work completed if the Contractor
- 38.1.1 Has not, within six days of the Minister or the Departmental Representative giving notice to the Contractor in writing in accordance with GC11, remedied any delay in the commencement or any default in the diligent performance of the work to the satisfaction of the Departmental Representative;
 - 38.1.2 has defaulted in the completion of any part of the work within the time fixed for its completion by the contract;
 - 38.1.3 has become insolvent;
 - 38.1.4 has committed an act of bankruptcy;
 - 38.1.5 has abandoned the work;
 - 38.1.6 has made an assignment of the contract without the consent required by GC3.1; or
 - 38.1.7 has otherwise failed to observe or perform any of the provisions of the contract.
- 38.2 If the whole or any part of the work is taken out of the Contractor's hands pursuant to GC38.1,
- 38.2.1 the Contractor's right to any further payment that is due or accruing due under the contract is, subject only to GC38.4, extinguished, and
 - 38.2.2 the Contractor is liable to pay Her Majesty, upon demand, an amount that is equal to the amount of all loss and damage incurred or sustained by Her Majesty in respect of the



Contractor's failure to complete the work.

- 38.3 If the whole or any part of the work that is taken out of the Contractor's hands pursuant to GC38.1 is completed by Her Majesty, the Departmental Representative shall determine the amount, if any, of the holdback or a progress claim that had accrued and was due prior to the date on which the work was taken out of the Contractor's hands and that is not required for the purposes of having the work performed or of compensating Her Majesty for any other loss or damage incurred or sustained by reason of the Contractor's default.
- 38.4 Her Majesty may pay the Contractor the amount determined not to be required pursuant to GC38.3.

GC39 Effect of Taking the Work Out of the Contractor's Hands

- 39.1 The taking of the work or any part thereof out of the Contractor's hands pursuant to GC38 does not operate so as to relieve or discharge him from any obligation under the contract or imposed upon him by law except the obligation to complete the performance of that part of the work that was taken out of his hands.
- 39.2 If the work or any part thereof is taken out of the Contractor's hands pursuant to GC38, all plant and material and the interest of the Contractor is all real property, licenses, powers and privileges acquired, used or provided by the Contractor under the contract shall continue to be the property of Her Majesty without compensation to the Contractor.
- 39.3 When the Departmental Representative certifies that any plant, material, or any interest of the Contractor referred to in GC39.2 is no longer required for the purposes of the work, or that it is not in the interest of Her Majesty to retain that plant, material or interest, it shall revert to the Contractor.

G40 Suspension of Work by Minister

- 40.1 The Minister may, when in his opinion it is in the public interest to do so, require the Contractor to suspend performance of the work either for a specified or an unspecified period by giving a notice of suspension in writing to the Contractor in accordance with GC11.
- 40.2 When a notice referred to in GC40.1 is received by the Contractor in accordance with GC11, he shall suspend all operations in respect of the work except those that, in the opinion of the Departmental Representative, are necessary for the care and preservation of the work, plant and material.
- 40.3 The Contractor shall not, during a period of suspension, remove any part of the work, plant or material from its site without the consent of the Departmental Representative.
- 40.4 If a period of suspension is 30 days or less, the Contractor shall, upon the expiration of that period, resume the performance of the work and he is entitled to be paid the extra cost, calculated in accordance with GC48 to GC50, of any labour, plant and material necessarily incurred by him as a result of the suspension.



- 40.5 If, upon the expiration of a period of suspension of more than 30 days, the Minister and the Contractor agree that the performance of the work will be continued by the Contractor, the Contractor shall resume performance of the work subject to any terms and conditions agreed upon by the Minister and the Contractor.
- 40.6 If, upon the expiration of a period of suspension of more than 30 days, the Minister and the Contractor do not agree that performance of the work will be continued by the Contractor or upon the terms and conditions under which the Contractor will continue the work, the notice of suspension shall be deemed to be a notice of termination pursuant to GC41.

GC41 Termination of Contract

- 41.1 The Minister may terminate the contract at any time by giving a notice of termination in writing to the Contractor in accordance with GC11.
- 41.2 When a notice referred to in GC41.1 is received by the Contractor in accordance with GC11, he shall, subject to any conditions stipulated in the notice, forthwith cease all operations in performance of the contract.
- 41.3 If the contract is terminated pursuant to GC41.1, Her Majesty shall pay the Contractor, subject to GC41.4, an amount equal to
- 41.3.1 the cost to the contractor of all labour, plant and material supplied by him under the contract up to the date of termination in respect of a contract or part thereof for which a Unit Price Arrangement is stipulated in the contract, or
- 41.3.2 the lesser of
- 41.3.2.1 an amount, calculated in accordance with the Terms and Payment, that would have been payable to the Contractor had he completed the work, and
- 41.3.2.2 an amount that is determined to be due to the Contractor pursuant to GC49 in respect of a contract or part thereof for which a Fixed Price Arrangement is stipulated in the contract
- less the aggregate of all amounts that were paid to the Contractor by Her Majesty and all amounts that are due to Her Majesty from the Contractor pursuant to the contract.
- 41.4 If Her Majesty and the Contractor are unable to agree about an amount referred to in GC41.3 that amount shall be determined by the method referred to in GC50.

GC42 Claims Against and Obligations of the Contractor or Subcontractor

- 42.1 Her Majesty may, in order to discharge lawful obligations of and satisfy claims against the Contractor or a subcontractor arising out of the performance of the contract, pay any amount that is due and payable to the Contractor pursuant to the contract directly to the obligees of and the claimants against the Contractor or the subcontractor but such amount if any, as is paid by Her Majesty, shall not exceed that amount which the Contractor would have been obliged to pay to



such claimant had the provisions of the Provincial or Territorial lien legislation, or, in the Province of Quebec, the law relating to privileges, been applicable to the work. Any such claimant need not comply with the provisions of such legislation setting out the steps by way of notice, registration or otherwise as might have been necessary to preserve or perfect any claim for lien or privilege which claimant might have had;

- 42.2 Her Majesty will not make any payment as described in GC42.1 unless and until that claimant shall have delivered to Her Majesty:

42.2.1 a binding and enforceable Judgment or Order of a court of competent jurisdiction setting forth such amount as would have been payable by the Contractor to the claimant pursuant to the provisions of the applicable Provincial or Territorial lien legislation, or, in the Province of Quebec, the law relating to privileges, had such legislation been applicable to the work; or

42.2.2 a final and enforceable award of an arbitrator setting forth such amount as would have been payable by the Contractor to the claimant pursuant to the provisions of the applicable Provincial or Territorial lien legislation, or, in the Province of Quebec, the law relating to privileges, had such legislation been applicable to the work; or

42.2.3 the consent of the Contractor authorizing a payment.

For the purposes of determining the entitlement of a claimant pursuant to GC42.2.1 and GC42.2.2, the notice required by GC42.8 shall be deemed to replace the registration or provision of notice after the performance of work as required by any applicable legislation and no claim shall be deemed to have expired, become void or unenforceable by reason of the claimant not commencing any action within the time prescribed by any applicable legislation.

- 42.3 The Contractor shall, by the execution of his contract, be deemed to have consented to submit to binding arbitration at the request of any claimant those questions that need be answered to establish the entitlement of the claimant to payment pursuant to the provisions of GC42.1 and such arbitration shall have as parties to it any subcontractor to whom the claimant supplied material, performed work or rented equipment should such subcontractor wish to be adjoined and the Crown shall not be a party to such arbitration and, subject to any agreement between the Contractor and the claimant to the contrary, the arbitration shall be conducted in accordance with the Provincial or Territorial legislation governing arbitration applicable in the Province or Territory in which the work is located.

- 42.4 A payment made pursuant to GC42.1 is, to the extent of the payment, a discharge of Her Majesty's liability to the Contractor under the contract and may be deducted from any amount payable to the Contractor under the contract.

- 42.5 To the extent that the circumstances of the work being performed for Her Majesty permit, the Contractor shall comply with all laws in force in the Province or Territory where the work is being performed relating to payment period, mandatory holdbacks, and creation and enforcement of mechanics' liens, builders' liens or similar legislation or in the Province of Quebec, the law relating to privileges.

- 42.6 The Contractor shall discharge all his lawful obligations and shall satisfy all lawful claims against him arising out of the performance of the work at least as often as the contract requires Her



Majesty to pay the Contractor.

- 42.7 The Contractor shall, whenever requested to do so by the Departmental Representative, make a statutory declaration deposing to the existence and condition of any obligations and claims referred to in GC42.6.
- 42.8 GC42.1 shall only apply to claims and obligations
- 42.8.1 the notification of which has been received by the Departmental Representative in writing before payment is made to the Contractor pursuant to TP4.10 and within 120 days of the date on which the claimant
- 42.8.1.1 should have been paid in full under the claimant's contract with the Contractor or subcontractor where the claim is for money that was lawfully required to be held back from the claimant; or
- 42.8.1.2 performed the last of the services, work or labour, or furnished the last of the material pursuant to the claimant's contract with the Contractor or subcontractor where the claim is not for money referred to in GC42.8.1.1, and
- 42.8.2 the proceedings to determine the right to payment of which, pursuant to GC42.2. shall have commenced within one year from the date that the notice referred to in GC42.8.1 was received by the Departmental Representative, and
- the notification required by GC42.8.1 shall set forth the amount claimed to be owing and the person who by contract is primarily liable.
- 42.9 Her Majesty may, upon receipt of a notice of claim under GC42.8.1, withhold from any amount that is due and payable to the Contractor pursuant to the contract the full amount of the claim or any portion thereof.
- 42.10 The Departmental Representative shall notify the Contractor in writing of receipt of any claim referred to in GC42.8.1 and of the intention of Her Majesty to withhold funds pursuant to GC42.9 and the Contractor may, at any time thereafter and until payment is made to the claimant, be entitled to post, with Her Majesty, security in a form acceptable to Her Majesty in an amount equal to the value of the claim, the notice of which is received by the Departmental Representative and upon receipt of such security Her Majesty shall release to the Contractor any funds which would be otherwise payable to the Contractor, that were withheld pursuant to the provisions of GC42.9 in respect of the claim of any claimant for whom the security stands.

GC43 Security Deposit – Forfeiture or Return

- 43.1 If
- 43.1.1 the work is taken out of the Contractor's hands pursuant to GC38,
- 43.1.2 the contract is terminated pursuant to GC41, or
- 43.1.3 the Contractor is in breach of or in default under the contract,



Her Majesty may convert the security deposit, if any, to Her own use.

- 43.2 If Her Majesty converts the contract security pursuant to GC43.1, the amount realized shall be deemed to be an amount due from Her Majesty to the Contractor under the contract.
- 43.3 Any balance of an amount referred to in GC43.2 that remains after payment of all losses, damage and claims of Her Majesty and others shall be paid by Her Majesty to the Contractor if, in the opinion of the Departmental Representative, it is not required for the purposes of the contract.

GC44 Departmental Representative's Certificates

- 44.1 On the date that
- 44.1.1 the work has been completed, and
 - 44.1.2 the Contractor has complied with the contract and all orders and directions made pursuant thereto,
- both to the satisfaction of the Departmental Representative, the Departmental Representative shall issue a Final Certificate of Completion to the Contractor.
- 44.2 If the Departmental Representative is satisfied that the work is substantially complete he shall, at any time before he issues a certificate referred to in GC44.1, issue an Interim Certificate of Completion to the Contractor, and
- 44.2.1 for the purposes of GC44.2 the work will be considered to be substantially complete,
 - 44.2.1.1 when the work under the contract or a substantial part thereof is, in the opinion of the Departmental Representative, ready for use by Her Majesty or is being used for the purpose intended; and
 - 44.2.1.2 when the work remaining to be done under the contract is, in the opinion of the Departmental Representative, capable of completion or correction at accost of not more that
 - 44.2.1.2.1 -3% of the first \$500,000, and
 - 44.2.1.2.2 -2% of the next \$500,000, and
 - 44.2.1.2.3 -1% of the balance
- of the value of the contract at the time this cost is calculated.
- 44.3 For the sole purpose of GC44.2.1.2, where the work or a substantial part thereof is ready for use or is being used for the purposes intended and the remainder of the work or a part thereof cannot be completed by the time specified in A2.1, or as amended pursuant to GC36, for reasons beyond the control of the Contractor or where the Departmental Representative and the Contractor agree not to complete a part of the work within the specified time, the cost of that part of the work



which was either beyond the control of the Contractor to complete or the Departmental Representative and the Contractor have agreed not to complete by the time specified shall be deducted from the value of the contract referred to GC44.2.1.2 and the said cost shall not form part of the cost of the work remaining to be done in determining substantial completion.

- 44.4 An Interim Certificate of Completion referred to in GC44.2 shall describe the parts of the work not completed to the satisfaction of the Departmental Representative and all things that must be done by the Contractor

44.4.1 before a Final Certificate of Completion referred to in GC44.1 will be issued, and

44.4.2 before the 12-month period referred to in GC32.1.2 shall commence for the said parts and all the said things.

- 44.5 The Departmental Representative may, in addition to the parts of the work described in an Interim Certificate of Completion referred to in GC44.2, require the Contractor to rectify any other parts of the work not completed to his satisfaction and to do any other things that are necessary for the satisfactory completion of the work.

- 44.6 If the contract or a part thereof is subject to a Unit Price Arrangement, the Departmental Representative shall measure and record the quantities of labour, plant and material, performed, used and supplied by the Contractor in performing the work and shall, at the request of the Contractor, inform him of those measurements.

- 44.7 The Contractor shall assist and co-operate with the Departmental Representative in the performance of his duties referred to in GC44.6 and shall be entitled to inspect any record made by the Departmental Representative pursuant to GC44.6.

- 44.8 After the Departmental Representative has issued a Final Certificate of Completion referred to in GC44.1, he shall, if GC44.6 applies, issue a Final Certificate of Measurement.

- 44.9 A Final Certificate of Measurement referred to in GC44.8 shall

44.9.1 contain the aggregate of all measurements of quantities referred to in GC44.6, and

44.9.2 be binding upon and conclusive between Her Majesty and the Contractor as to the quantities referred to therein.

GC45 Return of Security Deposit

- 45.1 After an Interim Certificate of Completion referred to in GC44.2 has been issued, Her Majesty shall, if the Contractor is not in breach of or in default under the contract, return to the Contractor all or any part of the security deposit that, in the opinion of the Departmental Representative, is not required for the purposes of the contract.

- 45.2 After a Final Certificate of Completion referred to in GC44.1 has been issued, Her Majesty shall return to the Contractor the remainder of any security deposit unless the contract stipulates otherwise.



- 45.3 If the security deposit was paid into the Consolidated Revenue Fund of Canada, Her Majesty shall pay interest thereon to the Contractor at a rate established from time to time pursuant to section 21(2) of the Financial Administration Act.

GC46 Clarification of Terms in GC47 to GC50

- 46.1 For the purposes of GC47 to GC50,
- 46.1.1 "Unit Price Table" means the table set out in the Articles of Agreement, and
- 46.1.2 "plant" does not include tools customarily provided by a tradesman in practicing his trade.

GC47 Additions or Amendments to Unit Price Table

- 47.1 Where a Unit Price Arrangement applies to the contract or a part thereof the Departmental Representative and the Contractor may, by an agreement in writing,
- 47.1.1 add classes of labour or material, and units of measurement, prices per unit and estimated quantities to the Unit Price Table if any labour, plant or material that is to be included in the Final Certificate of Measurement referred to in GC44.8 is not included in any class of labour, plant or material set out in the Unit Price Table; or
- 47.1.2 subject to GC47.2 and GC47.3, amend a price set out in the Unit Price Table for any class of labour, plant or material included therein if the Final Certificate of Measurement referred to in GC44.8 shows or is expected to show that the total quantity of that class of labour, plant or material actually performed, used or supplied by the Contractor in performing the work is
- 47.1.2.1 less than 85% of that estimated total quantity, or
- 47.1.2.2 in excess of 115% of that estimated total quantity.
- 47.2 In no event shall the total cost of an item set out in the Unit Price Table that has been amended pursuant to GC47.1.2.1 exceed the amount that would have been payable to the Contractor had the estimated total quantity actually been performed, used or supplied.
- 47.3 An amendment that is made necessary by GC47.1.2.2 shall apply only to the quantities that are in excess of 115%.
- 47.4 If the Departmental Representative and the Contractor do not agree as contemplated in GC47.1, the Departmental Representative shall determine the class and the unit of measurement of the labour, plant or material and, subject to GC47.2 and GC47.3, the price per unit therefore shall be determined in accordance with GC50.

GC48 Determination of Cost – Unit Price Table



- 48.1 Whenever, for the purposes of the contract, it is necessary to determine the cost of labour, plant or material, it shall be determined by multiplying the quantity of that labour, plant or material expressed in the unit set out in column 3 of the Unit Price Table by the price of that unit set out in column 5 of the Unit Price Table.

GC49 Determination of Cost – Negotiation

- 49.1 If the method described in GC48 cannot be used because the labour, plant or material is of a kind or class that is not set out in the Unit Price Table, the cost of that labour, plant or material for the purposes of the contract shall be the amount agreed upon from time to time by the Contractor and the Departmental Representative.
- 49.2 For the purposes of GC49.1, the Contractor shall submit to the Departmental Representative any necessary cost information requested by the Departmental Representative in respect of the labour, plant and material referred to in GC49.1

GC50 Determination of Cost – Failing Negotiation

- 50.1 If the methods described in GC47, GC48 or GC49 fail for any reason to achieve a determination of the cost of labour, plant and material for the purposes referred to therein, that cost shall be equal to the aggregate of
- 50.1.1 all reasonable and proper amounts actually expended or legally payable by the Contractor in respect of the labour, plant and material that falls within one of the classes of expenditure described in GC50.2 that are directly attributable to the performance of the contract,
 - 50.1.2 an allowance for profit and all other expenditures or costs, including overhead, general administration cost, financing and interest charges, and every other cost, charge and expenses, but not including those referred to in GC50.1.1 or GC50.1.3 or a class referred to in GC50.2, in an amount that is equal to 10% of the sum of the expenses referred to in GC50.1.1, and
 - 50.1.3 interest on the cost determined under GC50.1.1 and GC50.1.2, which interest shall be calculated in accordance with TP9,
- provide that the total cost of an item set out in the Unit Price Table that is subject to the provisions of GC47.1.2.1 does not exceed the amount that would have been payable to the Contractor had the estimated total quantity of the said item actually be performed, used or supplied.
- 50.2 For purposes of GC50.1.1 the classes of expenditure that may be taken into account in determining the cost of labour, plant and material are,
- 50.2.1 payments to subcontractors;
 - 50.2.2 wages, salaries and travelling expenses of employees of the Contractor while they are actually and properly engaged on the work, other than wages, salaries, bonuses, living



and travelling expenses of personnel of the Contractor generally employed at the head office or at a general office of the Contractor unless they are engaged at the work site with the approval of the Departmental Representative,

- 50.2.3 assessments payable under any statutory authority relating to workmen's compensation, unemployment insurance, pension plan or holidays with pay;
- 50.2.4 rent that is paid for plant or an amount equivalent of the said rent if the plant is owned by the Contractor that is necessary for and used in the performance of the work, if the rent of the equivalent amount is reasonable and use of that plant has been approved by the Departmental Representative;
- 50.2.5 payments for maintaining and operating plant necessary for and used in the performance of the work, and payments for effecting such repairs thereto as, in the opinion of the Departmental Representative, are necessary to the proper performance of the contract other than payments for any repairs to the plant arising out of defects existing before its allocation to the work;
- 50.2.6 payments for material that is necessary for and incorporated in the work, or that is necessary for and consumed in the performance of the contract;
- 50.2.7 payments for preparation, delivery, handling, erection, installation, inspection protection and removal of the plant and material necessary for and used in the performance of the contract; and
- 50.2.8 any other payments made by the Contractor with the approval of the Departmental Representative that are necessary for the performance of the contract.

GC51 Records to be kept by Contractor

51.1 The Contractor shall

- 51.1.1 maintain full records of his estimated and actual cost of the work together with all tender calls, quotations, contracts, correspondence, invoices, receipts and vouchers relating thereto.
- 51.1.2 make all records and material referred to in GC51.1.1 available to audit and inspection by the Minister and the Deputy Receiver General for Canada or by persons acting on behalf of either of both of them, when requested;
- 51.1.3 allow any of the person referred to in GC51.1.2 to make copies of and to take extracts from any of the records and material referred to in GC51.1.1; and
- 51.1.4 furnish any person referred to in GC51.1.2 with any information he may require from time to time in connection with such records and material.

- 51.2 The records maintained by the Contractor pursuant to GC51.1.1 shall be kept intact by the Contractor until the expiration of two years after the date that a Final Certificate of Completion referred to in GC44.1 was issued or until the expiration of such other period of time as the



Minister may direct.

- 51.3 The Contractor shall cause all subcontractors and all other persons directly or indirectly controlled by or affiliated with the Contractor and all persons directly or indirectly having control of the Contractor to comply with GC51.1 and GC51.2 as if they were the Contractor.

GC52 Conflict of Interest

- 52.1 It is a term of this contract that no former public office holder who is not in compliance with the Conflict of Interest and Post-Employment Code for Public Office Holders shall derive a direct benefit from this contract.

GC53 Contractor Status

- 53.1 The Contractor shall be engaged under the contract as an independent contractor.
- 53.2 The Contractor and any employee of the said Contractor is not engaged by the contract as an employee, servant or agent of Her Majesty.
- 53.3 For the purposes of GC53.1 and GC53.2 the Contractor shall be solely responsible for any and all payments and deductions required to be made by law including those required for Canada or Quebec Pension Plans, Unemployment Insurance, Worker's Compensation or Income Tax.



GENERAL CONDITONS

- IC 1 Proof of Insurance**
- IC 2 Risk Management**
- IC 3 Payment of Deductible**
- IC 4 Insurance Coverage**

GENERAL INSUANCE COVERAGES

- GCI 1 Insured**
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COMMERCIAL GENERAL LIABILITY

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BUILDER'S RISK – INSTALLATION FLOATER – ALL RISKS

- BR 1 Scope of Policy**
- BR 2 Property Insured**
- BR 3 Insurance Proceeds**
- BR 4 Amount of Insurance**
- BR 5 Deductible**
- BR 6 Subrogation**
- BR 7 Exclusion Qualifications**

INSURER'S CERTIFICATE OF INSURANCE



General Conditions

IC 1 Proof of Insurance (02/12/03)

Within thirty (30) days after acceptance of the Contractor's tender, the Contractor shall, unless otherwise directed in writing by the Contracting Officer, deposit with the Contracting Officer an Insurer's Certificate of Insurance in the form displayed in this document and, if requested by the Contracting Officer, the originals or certified true copies of all contracts of insurance maintained by the Contractor pursuant to the Insurance Coverage Requirements shown hereunder.

IC 2 Risk Management (01/10/94)

The provisions of the Insurance Coverage Requirements contained hereunder are not intended to cover all of the Contractor's obligations under GC8 of the General Conditions "C" of the contract. Any additional risk management measures or additional insurance coverages the Contractor may deem necessary to fulfill its obligations under GC8 shall be at its own discretion and expense.

IC 3 Payment of Deductible (01/10/94)

The payment of monies up to the deductible amount made in satisfaction of a claim shall be borne by the Contractor.

IC 4 Insurance Coverage (02/12/03)

The Contractor has represented that it has in place and effect the appropriate and usual liability insurance coverage as required by these Insurance Conditions and the Contractor has warranted that it shall obtain, in a timely manner and prior to commencement of the Work, the appropriate and usual property insurance coverage as required by these Insurance Conditions and, further, that it shall maintain all required insurance policies in place and effect as required by these Insurance Conditions.



INSURANCE COVERAGE REQUIREMENTS

PART I GENERAL INSURANCE COVERAGES (GIC)

GIC 1 Insured (02/12/03)

Each insurance policy shall insure the Contractor, and shall include, as an Additional Named Insured, Her Majesty the Queen in right of Canada, represented by the National Research Council Canada.

GIC 2 Period of Insurance (02/12/03)

Unless otherwise directed in writing by the Contracting Officer or otherwise stipulated elsewhere in these Insurance Conditions, the policies required hereunder shall be in force and be maintained from the date of the contract award until the day of issue of the Departmental Representative's Final Certificate of Completion.

GIC 3 Proof of Insurance (01/10/94)

Within twenty five (25) days after acceptance of the Contractor's tender, the Insurer shall, unless otherwise directed by the Contractor, deposit with the Contractor an Insurer's Certificate of Insurance in the form displayed in the document and, if requested, the originals or certified true copies of all contracts of insurance maintained by the Contractor pursuant to the requirements of these Insurance Coverages.

GIC 4 Notification (01/10/94)

Each Insurance policy shall contain a provision that (30) days prior written notice shall be given by the Insurer to Her Majesty in the event of any material change in or cancellation of coverage. Any such notice received by the Contractor shall be transmitted forthwith to Her Majesty.

PART II COMMERCIAL GENERAL LIABILITY

CGL 1 Scope of Policy (01/10/94)

The policy shall be written on a form similar to that known and referred to in the insurance industry as IBC 2100 – Commercial General Liability policy (Occurrence form) and shall provide for limit of liability of not less than \$2,000,000 inclusive for Bodily Injury and Property Damage for any one occurrence or series of occurrences arising out of one cause. Legal or defence cost incurred in respect of a claim or claims shall not operate to decrease the limit of liability.

CGL 2 Coverages/Provisions (01/10/94)



The policy shall include but not necessarily be limited to the following coverages/provisions.

- 2.1 Liability arising out of or resulting from the ownership, existence, maintenance or use of premises by the Contractor and operations necessary or incidental to the performance of this contract.
- 2.2 "Broad Form" Property Damage including the loss of use of property.
- 2.3 Removal or weakening of support of any building or land whether such support be natural or otherwise.
- 2.4 Elevator liability (including escalators, hoists and similar devices).
- 2.5 Contractor's Protective Liability
- 2.6 Contractual and Assumed Liabilities un this contact.
- 2.7 Completed Operations Liability – The insurance, including all aspects of this Part II of these Insurance Conditions shall continue for a period of at least one (1) year beyond the date of the Departmental Representative's Final Certificate of Completion for the Completed Operations.
- 2.8 Cross Liability – The Clause shall be written as follows:

Cross Liability – The insurance as is afforded by this policy shall apply in respect to any claim or action brought against any one Insured by any other Insured. The coverage shall apply in the same manner and to the same extent as though a separate policy had been issued to each Insured. The inclusion herein of more than one Insured shall not increase the limit of the Insurer's liability.

- 2.9 Severability of Interests – The Clause shall be written as follows:

Severability of Interests – This policy, subject to the limits of liability stated herein, shall apply separately to each Insured in the same manner and to the same extent as if a separate policy had been issued to each. The inclusion herein of more than one insured shall not increase the limit of the Insurer's liability.

CGL 3 Additional Exposures (02/12/03)

The policy shall either include or be endorsed to include the following exposures of hazards if the Work is subject thereto:

- 3.1 Blasting
- 3.2 Pile driving and calsson work
- 3.3 Underpinning
- 3.4 Risks associated with the activities of the Contractor on an active airport



- 3.5 Radioactive contamination resulting from the use of commercial isotopes
- 3.6 Damage to the portion of an existing building beyond that directly associated with an addition, renovation or installation contract.
- 3.7 Marine risks associated with the contraction of piers, wharves and docks.

CGL 4 Insurance Proceeds
(01/10/94)

Insurance Proceeds from this policy are usually payable directly to a Claimant/Third Party.

CGL 5 Deductible
(02/12/03)

This policy shall be issued with a deductible amount of not more than \$10,000 per occurrence applying to Property Damage claims only.

PART III
BUILDER'S RISK - INSTALLATION FLOATER - ALL RISKS

BR 1 Scope of Policy
(01/10/94)

The policy shall be written on an "All Risks" basis granting coverages similar to those provided by the forms known and referred to in the insurance industry as "Builder's Risk Comprehensive Form" or "Installation Floater - All Risks".

BR 2 Property Insured
(01/10/94)

The property insured shall include:

- 2.1 The Work and all property, equipment and materials intended to become part of the finished Work at the site of the project while awaiting, during and after installation, erection or construction including testing.
- 2.2 Expenses incurred in the removal from the construction site of debris of the property insured, including demolition of damaged property, de-icing and dewatering, occasioned by loss, destruction or damage to such property and in respect of which insurance is provided by this policy.

BR 3 Insurance Proceeds
(01/10/94)

- 3.1 Insurance proceeds from this policy are payable in accordance with GC28 of the General Conditions "C" of the contract.
- 3.2 This policy shall provide that the proceeds thereof are payable to Her Majesty or as the Minister may direct.



- 3.3 The Contractor shall do such things and execute such documents as are necessary to effect payment of the proceeds.

BR 4 Amount of Insurance
(01/10/94)

The amount of insurance shall not be less than the sum of the contract value plus the declared value (if any) set forth in the contract documents of all material and equipment supplied by Her Majesty at the site of the project to be incorporated into and form part of the finished Work.

BR 5 Deductible
(02/12/03)

The Policy shall be issued with a deductible amount of not more than \$10,000.

BR 6 Subrogation
(01/10/94)

The following Clause shall be included in the policy:

"All rights of subrogation or transfer of rights are hereby waived against any corporation, firm, individual or other interest, with respect to which, insurance is provided by this policy".

BR 7 Exclusion Qualifications
(01/10/94)

The policy may be subject to the standard exclusions but the following qualifications shall apply:

- 7.1 Faulty materials, workmanship or design may be excluded only to the extent of the cost of making good thereof and shall not apply to loss or damage resulting therefrom.
- 7.2 Loss or damage caused by contamination by radioactive material may be excluded except for loss or damage resulting from commercial isotopes used for industrial measurements, inspection, quality control radiographic or photographic use.
- 7.3 Use and occupancy of the project or any part of section thereof shall be permitted where such use and occupancy is for the purpose for which the project is intended upon completion.



INSURER'S CERTIFICATE OF INSURANCE

(TO BE COMPLETED BY INSURER (NOT BOKER) AND DELIVERD TO NATIONAL RESEARCH COUNCIL CANADA WITH 30 DAYS FOLLOWING ACCEPTANCE OF TENDER)

CONTRACT

DESCRIPTION OF WORK	CONTRACT NUMBER	AWARD DATE
LOCATION		

INSURER

NAME
ADDRESS

BROKER

NAME
ADDRESS

INSURED

NAME OF CONTRACTOR
ADDRESS

ADDITIONAL INSURED

HER MAJESTY THE QUEEN IN RIGHT OF CANADA AS REPRESENTED BY THE NATIONAL RESEARCH COUNCIL CANADA

THIS DOCUENT CERTIFIES THAT THE FOLLOWING POLICES OF INSURANCE ARE AT PRESENT IN FORCE COVERING ALL OPERATIONS OF THE INSURE IN CONNECTION WITH THE CONTRACT MADE BETWEEN THE NAMED INSURED AND THE NATIONAL RESEARCH COUNCIL CANADA AND IN ACCORDANCE WITH THE INSURANCE CONDITIONS "E"

POLICY					
TYPE	NUMBER	INCEPTION DATE	EXPIRY DATE	LIMITS OF LIABILITY	DEDUCTIBLE
COMMERCIAL GENERAL LIABILITY					
BUILDERS RISK "AL RISKS"					
INSTALLATION FLOATER "ALL RISKS"					

THE INSURER AGREES TO NOTIFY THE NATIONAL RESEARCH COUNCIL CANADA IN WRITING 30 DAYS PRIOR TO ANY MATERIAL CHANGE IN OR CANCELLATION OF ANY POLICY OR COVERAGE SPECIFICALLY RELATED TO THE CONTRACT

NAME OF INSURER'S OFFICER OR AUTHORIZED EMPLOYEE	SIGNATURE	DATE:
		TELEPHONE NUMBER:

ISSUANCE OF THIS CERTIFIATE SHALL NOT LIMIT OR RESTRICT THE RIGHT OF THE NATIONAL RESEARCH COUNCIL CANADA TO REQUEST AT ANY TIME DUPLICATE COPIES OF SAID INSURANCE POLICIES



CS1 Obligation to provide Contract Security

- 1.1 The Contractor shall, at the Contractor's own expense, provide one or more of the forms of contract security prescribed in CS2.
- 1.2 The Contractor shall deliver to the Departmental Representative the contract security referred to in CS1.1 within 14 days after the date that the Contractor receives notice that the Contractor's tender or offer was accepted by Her Majesty.

CS2 Prescribed Types and Amounts of Contract Security

- 2.1 The Contractor shall deliver to the Departmental Representative pursuant to CS1
 - 2.1.1 a performance bond and a labour and material payment bond each in an amount that is equal to not less than 50% of the contract amount referred to in the Articles of Agreement, or
 - 2.1.2 a labour and material payment bond in an amount that is equal to not less than 50% of the contract amount referred to in the Articles of Agreement, and a security deposit in an amount that is equal to
 - 2.1.2.1 not less than 10% of the contract amount referred to in the Articles of Agreement where that amount does not exceed \$250,000, or
 - 2.1.2.2 \$25,000 plus 5% of the part of the contract amount referred to in the Articles of Agreement that exceeds \$250,000, or
 - 2.1.3 a security deposit in an amount prescribed by CS2.12 plus an additional amount that is equal to 10% of the contract amount referred to in the Articles of Agreement.
- 2.2 A performance bond and a labour and material payment bond referred to in CS2.1 shall be in a form and be issued by a bonding or surety company that is approved by Her Majesty.
- 2.3 The amount of a security deposit referred to in CS2.1.2 shall not exceed \$250,000 regardless of the contract amount referred to in the Articles of Agreement.
- 2.4 A security deposit referred to in CS2.1.2 and CS2.1.3 shall be in the form of
 - 2.4.1 a bill of exchange made payable to the Receiver General of Canada and certified by an approved financial institution or drawn by an approved financial institution on itself, or
 - 2.4.2 bonds of or unconditionally guaranteed as to principal and interest by the Government of Canada.
- 2.5 For the purposes of CS2.4
 - 2.5.1 a bill of exchange is an unconditional order in writing signed by the Contractor and addressed to an approved financial institution, requiring the said institution to pay, on demand, at a fixed or determinable future time a sum certain of money to, or to the order



of, the Receiver General for Canada, and

2.5.2 If a bill of exchange is certified by a financial institution other than a chartered bank then it must be accompanied by a letter or stamped certification confirming that the financial institution is in at least one of the categories referred to in CS2.5.3

2.5.3 an approved financial institution is

2.5.3.1 any corporation or institution that is a member of the Canadian Payments Association,

2.5.3.2 a corporation that accepts deposits that are insured by the Canada Deposit Insurance Corporation or the Régie de l'assurance-dépôts du Québec to the maximum permitted by law,

2.5.3.3 a credit union as defined in paragraph 137(6)(b) of the *Income Tax Act*,

2.5.3.4 a corporation that accepts deposits from the public, if repayment of the deposit is guaranteed by Her Majesty in right of a province, or

2.5.3.5 The Canada Post Corporation.

2.5.4 the bonds referred to in CS2.4.2 shall be

2.5.4.1 made payable to bearer, or

2.5.4.2 accompanied by a duly executed instrument of transfer of the bonds to the Receiver General for Canada in the form prescribed by the Domestic Bonds of Canada Regulations, or

2.5.4.3 registered, as to principal or as to principal and interest in the name of the Receiver General for Canada pursuant to the Domestic Bonds of Canada Regulations, and

2.5.4.4 provided on the basis of their market value current at the date of the contract.



Government of Canada
Gouvernement du Canada

Contract Number / Numéro du contrat

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SECURITY REQUIREMENTS CHECK LIST (SRCL)

LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE

1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine National Research Council of Canada		2. Branch or Directorate / Direction générale ou Direction Dominion Astrophysical Observatory	
3. a) Subcontract Number / Numéro du contrat de sous-traitance		3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant	
4. Brief Description of Work / Brève description du travail Provide Construction / Installation services of WATER-MAIN-UPGRADE for NRC Dominion Astrophysical Observatory located at 5071 West Saanich Road Victoria BC V9E 2E7			
5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?		<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?		<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
6. Indicate the type of access required / Indiquer le type d'accès requis			
6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS? (Specify the level of access using the chart in Question 7. c) (Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c)		<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.		<input type="checkbox"/> No Non	<input checked="" type="checkbox"/> Yes Oui
6. c) Is this a commercial courier or delivery requirement with no overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciale sans entreposage de nuit?		<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès			
Canada <input type="checkbox"/>		NATO / OTAN <input type="checkbox"/>	
		Foreign / Étranger <input type="checkbox"/>	
7. b) Release restrictions / Restrictions relatives à la diffusion			
No release restrictions Aucune restriction relative à la diffusion <input type="checkbox"/>		All NATO countries Tous les pays de l'OTAN <input type="checkbox"/>	
Not releasable À ne pas diffuser <input type="checkbox"/>			
Restricted to: / Limité à: <input type="checkbox"/> Specify country(ies): / Préciser le(s) pays:		Restricted to: / Limité à: <input type="checkbox"/> Specify country(ies): / Préciser le(s) pays:	
		No release restrictions Aucune restriction relative à la diffusion <input type="checkbox"/>	
		Restricted to: / Limité à: <input type="checkbox"/> Specify country(ies): / Préciser le(s) pays:	
7. c) Level of information / Niveau d'information			
PROTECTED A PROTÉGÉ A <input type="checkbox"/>		NATO UNCLASSIFIED NATO NON CLASSIFIÉ <input type="checkbox"/>	
PROTECTED B PROTÉGÉ B <input type="checkbox"/>		NATO RESTRICTED NATO DIFFUSION RESTREINTE <input type="checkbox"/>	
PROTECTED C PROTÉGÉ C <input type="checkbox"/>		NATO CONFIDENTIAL NATO CONFIDENTIEL <input type="checkbox"/>	
CONFIDENTIAL CONFIDENTIEL <input type="checkbox"/>		NATO SECRET NATO SECRET <input type="checkbox"/>	
SECRET SECRET <input type="checkbox"/>		COSMIC TOP SECRET COSMIC TRÈS SECRET <input type="checkbox"/>	
TOP SECRET TRÈS SECRET <input type="checkbox"/>			
TOP SECRET (SIGINT) TRÈS SECRET (SIGINT) <input type="checkbox"/>			
		PROTECTED A PROTÉGÉ A <input type="checkbox"/>	
		PROTECTED B PROTÉGÉ B <input type="checkbox"/>	
		PROTECTED C PROTÉGÉ C <input type="checkbox"/>	
		CONFIDENTIAL CONFIDENTIEL <input type="checkbox"/>	
		SECRET SECRET <input type="checkbox"/>	
		TOP SECRET TRÈS SECRET <input type="checkbox"/>	
		TOP SECRET (SIGINT) TRÈS SECRET (SIGINT) <input type="checkbox"/>	

TBS/SCT 350-103(2004/12)

Security Classification / Classification de sécurité
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Canada



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PART A (continued) / PARTIE A (suite)

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC Information or assets?
Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS? ☒ No ☐ Yes
Non Oui

If Yes, indicate the level of sensitivity:

Dans l'affirmative, indiquer le niveau de sensibilité :

9. Will the supplier require access to extremely sensitive INFOSEC information or assets?
Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate? ☒ No ☐ Yes
Non Oui

Short Title(s) of material / Titre(s) abrégé(s) du matériel :

Document Number / Numéro du document :

PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)

10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis



RELIABILITY STATUS
COTE DE FIABILITÉ



CONFIDENTIAL
CONFIDENTIEL



SECRET
SECRET



TOP SECRET
TRÈS SECRET



TOP SECRET-- SIGINT
TRÈS SECRET -- SIGINT



NATO CONFIDENTIAL
NATO CONFIDENTIEL



NATO SECRET
NATO SECRET



COSMIC TOP SECRET
COSMIC TRÈS SECRET



SITE ACCESS
ACCÈS AUX EMPLACEMENTS

Special comments:

Commentaires spéciaux :

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.

REMARQUE : Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work?
Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail? ☒ No ☐ Yes
Non Oui

If Yes, will unscreened personnel be escorted?

Dans l'affirmative, le personnel en question sera-t-il escorté?



No
Non

Yes
Oui

PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)

INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED Information or assets on its site or premises?
Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS? ☒ No ☐ Yes
Non Oui

11. b) Will the supplier be required to safeguard COMSEC information or assets?
Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC? ☒ No ☐ Yes
Non Oui

PRODUCTION

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises?
Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ? ☒ No ☐ Yes
Non Oui

INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED Information or data?
Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS? ☒ No ☐ Yes
Non Oui

11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency?
Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale? ☒ No ☐ Yes
Non Oui

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PART C - (continued) / PARTIE C - (suite)

For users completing the form manually use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.

Les utilisateurs qui remplissent le formulaire manuellement doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form online (via the Internet), the summary chart is automatically populated by your responses to previous questions.

Dans le cas des utilisateurs qui remplissent le formulaire en ligne (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Category Catégorie	PROTECTED PROTÉGÉ			CLASSIFIED CLASSIFIÉ			NATO				COMSEC					
	A	B	C	CONFIDENTIAL CONFIDENTIEL	SECRET	TOP SECRET TRÈS SECRET	NATO RESTRICTED NATO DIFFUSION RESTREINTE	NATO CONFIDENTIAL NATO CONFIDENTIEL	NATO SECRET	COSMIC TOP SECRET COSMIC TRÈS SECRET	PROTECTED PROTÉGÉ			CONFIDENTIAL	SECRET	TOP SECRET TRÈS SECRET
											A	B	C			
Information / Assets Renseignements / Biens Production																
IT Media / Support TI																
IT Link / Lien électronique																

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?
La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE?

☒ No
Non ☐ Yes
Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée
« Classification de sécurité » au haut et au bas du formulaire.

12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?
La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE?

☒ No
Non ☐ Yes
Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée
« Classification de sécurité » au haut et au bas du formulaire et indiquez qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).



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PART D - AUTHORIZATION / PARTIE D - AUTORISATION

13. Organization Project Authority / Chargé de projet de l'organisme

Name (print) - Nom (en lettres moulées)

Clyde Donnelly

Title - Titre

Site Infrastructure Manager

Signature

Telephone No. - N° de téléphone
250-363-0004

Facsimile No. - N° de télécopieur
250-363-0077

E-mail address - Adresse courriel
Clyde.Donnelly@nrc-cnrc.gc.ca

Date

Aug 29 2014

14. Organization Security Authority / Responsable de la sécurité de l'organisme

Name (print) - Nom (en lettres moulées)

Charlotte Carrier

Title - Titre

CG, Contracts Personnel Security Coordin

Signature

Telephone No. - N° de téléphone
613-993-8956

Facsimile No. - N° de télécopieur
613-990-0946

E-mail address - Adresse courriel
Charlotte.Carrier@nrc-cnrc.gc.ca

Date

30 Aug 2014

15. Are there additional instructions (e.g. Security Guide, Security Classification Guide) attached?

Des instructions supplémentaires (p. ex. Guide de sécurité, Guide de classification de la sécurité) sont-elles jointes?

☒ No
Non

☐ Yes
Oui

16. Procurement Officer / Agent d'approvisionnement

Name (print) - Nom (en lettres moulées)

MARC BÉDARD

Title - Titre

Senior Contracting Officer

Signature

Telephone No. - N° de téléphone
613 993-2274

Facsimile No. - N° de télécopieur

E-mail address - Adresse courriel

Date

Sept 2nd/14

17. Contracting Security Authority / Autorité contractante en matière de sécurité

Name (print) - Nom (en lettres moulées)

Title - Titre

Signature

Telephone No. - N° de téléphone

Facsimile No. - N° de télécopieur

E-mail address - Adresse courriel

Date