

APPEL D'OFFRES

RETOURNER LES SOUMISSIONS À :
Réception des soumissions
Agriculture et Agroalimentaire Canada

Agriculture et Agroalimentaire Canada
 Centre de service de l'est
 Service de réception des offres
 2001, boulevard Robert-Bourassa, bureau 671-TEN
 Montréal, QC
 H3A 3N2

SOUMISSION PRÉSENTÉE À :

Agriculture et Agroalimentaire Canada
 Par la présente, nous offrons de vendre à Sa Majesté la Reine du chef du Canada, conformément aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, la construction énumérée ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Commentaires :

Sujet		
Projet de laboratoire de pathologie à St-John's		
N° de l'invitation	Date	
01B46-15-0187	2015-11-19	
N° de référence du client		
1516-143110-p07		
N° de dossier		
01B46-15-0187		
L'invitation prend fin		
Mardi, Décembre 8, 2015, à 14:00 PM, HNE.		
F.A.B		
<input type="radio"/> Installations <input checked="" type="radio"/> Destination <input type="radio"/> Autre		
Adresser toute demande de renseignements à :		
Carol Rahal		
Titre :		
Agent contractuel		
Courriel :		
carol.rahal@agr.gc.ca		
Numéro de téléphone	Poste	Numéro de télécopieur
514 315-6143		514 283-1918
Destination		
308 rue Brookfield		
Édifice 25		
St-John's, Terre-Neuve		

Instructions : Voir ci-inclus

Livraison exigée	Livraison proposée	
Le 31 mars 2016		
Raison sociale et adresse du fournisseur/de l'entrepreneur		
Numéro de téléphone	Poste	Numéro de télécopieur

BUREAU ÉMETTEUR

Agriculture et Agroalimentaire Canada
 Centre de service de l'est
 Service de réception des offres
 2001, boulevard Robert-Bourassa, bureau 671-TEN
 Montréal, QC
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Nom et titre de la personne autorisée à signer au nom du fournisseur
(caractère d'impression)

Signature

Date



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Formulaire

- Cautionnement de soumission
- Attestation d'assurance
- Cautionnement pour le paiement de la main-d'oeuvre et des matériaux
- Cautionnement d'exécution
- Attestation T4-A
- Formulaire de vérification de sécurité, de consentement et d'autorisation du personnel



Annexe « A »

INSTRUCTIONS GÉNÉRALES À L'INTENTION DES SOUMISSIONNAIRES



INSTRUCTIONS GÉNÉRALES À L'INTENTION DES SOUMISSIONNAIRES

- IG01 Établissement des soumissions
- IG02 Identité ou capacité juridique du soumissionnaire
- IG03 Taxes applicables
- IG04 Frais d'immobilisation
- IG05 Immatriculation et évaluation préalable de l'outillage flottant
- IG06 Liste des sous-traitants et fournisseurs
- IG07 Exigences relatives à la garantie de soumission
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- IG13 Approbation des matériaux de remplacement
- IG14 Conflit d'intérêts / Avantage indu

IG01 ÉTABLISSEMENT DES SOUMISSIONS

- 1) La soumission doit :
 - a) être présentée sur le **FORMULAIRE DE SOUMISSION ET D'ACCEPTATION** fourni par AAC avec le dossier d'appel d'offres ou sur une reproduction claire et lisible de ce formulaire qui doit être identique à tous égards au **FORMULAIRE DE SOUMISSION ET D'ACCEPTATION** fourni par AAC;
 - b) être établie en fonction des documents du dossier d'appel d'offres énumérés dans les Instructions particulières à l'intention des soumissionnaires;
 - c) être remplie correctement à tous égards;
 - d) porter la signature originale d'un représentant dûment autorisé du soumissionnaire; et
 - e) être accompagnée
 - (i) de la garantie de soumission précisée à l'IG07; et
 - (ii) de tout autre document précisé ailleurs dans l'appel d'offres où il est stipulé que ce document doit accompagner la soumission.
- 2) Sous réserve des dispositions du paragraphe 6) de l'IG10, toute modification aux sections pré dactylographiées ou pré-imprimées du formulaire de soumission ou toute condition ou restriction ajoutée à la soumission constituera une cause directe de rejet. Les modifications, corrections, changements ou ratures apportés à des énoncés ou à des chiffres entrés sur le formulaire de soumission par le soumissionnaire doivent être paraphés par les signataires de la soumission. Les modifications, corrections, changements ou ratures non paraphés seront considérés comme nuls.
- 3) Les soumissions envoyées par télécopieur ne sont pas acceptables, à moins d'indication contraire dans les documents du dossier d'appel d'offres.

INSTRUCTIONS GÉNÉRALES À L'INTENTION DES SOUMISSIONNAIRES (suite)

IG02 IDENTITÉ OU CAPACITÉ JURIDIQUE DU SOUMISSIONNAIRE

- 1) Pour confirmer le pouvoir des signataires ou déterminer la capacité juridique en vertu de laquelle le soumissionnaire entend conclure un marché, il faut que le soumissionnaire qui exerce ses activités commerciales sous un nom autre que son nom personnel fournisse à la demande du Canada, avant l'attribution du contrat, une preuve satisfaisante :
 - a) de ce pouvoir de signature et
 - b) de la capacité juridique en vertu de laquelle il exerce ses activités commerciales.

La preuve satisfaisante du pouvoir de signer peut être une copie certifiée conforme d'une résolution nommant les personnes autorisées à signer la présente soumission au nom de la compagnie constituée en personne morale ou de la société de personnes. La preuve de la capacité juridique peut prendre la forme d'une copie des documents d'incorporation ou de l'enregistrement du nom commercial d'un propriétaire unique ou d'une société de personnes.

IG03 TAXES APPLICABLES

- 1) Par « taxes applicables », on entend la taxe sur les produits et services (TPS), la taxe de vente harmonisée (TVH) et toute taxe provinciale, payable par le Canada, selon la loi, comme la taxe de vente du Québec (TVQ) en date du 1er avril 2013.

IG04 FRAIS D'IMMOBILISATION

- 1) Pour l'application de l'article 1.8 LOIS, PERMIS ET TAXES des Conditions générales du contrat, seuls les droits ou les frais ayant trait directement au traitement et à la délivrance de permis de construire doivent être inclus. Les soumissionnaires ne doivent pas inclure, dans le montant de leur soumission, les sommes correspondant à des droits municipaux spéciaux d'aménagement ou de réaménagement qu'une administration municipale peut exiger comme condition préalable à la délivrance des permis de construire.

IG05 IMMATRICULATION ET ÉVALUATION PRÉALABLE DE L'OUTILLAGE FLOTTANT

- 1) Les dragues ou autres outillages flottants qui seront utilisés dans l'exécution des travaux doivent être immatriculés au Canada. Dans le cas des dragues ou des autres outillages flottants non fabriqués au Canada, le soumissionnaire doit se faire délivrer, par Industrie Canada, un certificat d'évaluation et joindre ce certificat à sa soumission. L'outillage ainsi évalué par Industrie Canada pourra être accepté dans le cadre de ce projet de dragage.

IG06 LISTE DES SOUS-TRAITANTS ET DES FOURNISSEURS

- 1) Nonobstant toute liste de sous-traitants que le soumissionnaire peut être tenu de déposer dans le cadre de la soumission, le soumissionnaire devra, dans le délai de quarante-huit (48) heures suivant la réception d'un avis écrit à ce sujet, soumettre toute information demandée dans cet avis, y compris les noms des sous-traitants et des fournisseurs pour la ou les parties des travaux énumérées dans ledit avis. Le non-respect de ces exigences donnera lieu au rejet de la soumission.

IG07 EXIGENCES RELATIVES À LA GARANTIE DE SOUMISSION

- 1) Le soumissionnaire doit inclure dans sa soumission une garantie de soumission sous la forme d'un cautionnement de soumission ou d'un dépôt de garantie. Cette garantie doit représenter au moins 10 % du montant de la soumission. Les taxes applicables ne doivent pas être incluses

INSTRUCTIONS GÉNÉRALES À L'INTENTION DES SOUMISSIONNAIRES (suite)

dans le calcul de la garantie de soumission requise. Le montant maximum de la garantie de soumission exigée est fixé à 2 000 000 \$.

- 2) Le cautionnement de soumission doit être fourni sur un formulaire approuvé <http://www.tbs-sct.gc.ca/pol/doc-fra.aspx?id=14494§ion=text#appS> dûment rempli et portant des signatures originales, et il doit provenir d'une entreprise dont les cautionnements sont acceptés par le Canada au moment de la clôture de l'appel d'offres ou d'une entreprise désignée à l'Appendice L de la Politique sur les marchés du Conseil du Trésor, intitulé [Compagnies de cautionnement reconnues](#).
- 3) Le dépôt de garantie doit être un original, dûment rempli et signé dans l'espace prévu. Il peut s'agir :
 - a) d'une lettre de change, d'une traite bancaire ou d'un mandat de poste à l'ordre du receveur général du Canada, certifié ou fourni par une institution financière agréée; ou
 - b) d'obligations du gouvernement du Canada ou d'obligations garanties inconditionnellement quant au capital et aux intérêts par le gouvernement du Canada.
- 4) Aux fins de l'alinéa 3a) de l'IG07 :
 - a) une lettre de change est un ordre inconditionnel donné par écrit par le soumissionnaire à une institution financière agréée et obligeant cette institution à verser, sur demande et à une certaine date, une certaine somme au receveur général du Canada ou à l'ordre de ce dernier;
 - b) si une lettre de change, une traite bancaire ou un mandat est certifié par une institution ou une société autre qu'une banque à charte, il doit être accompagné d'une preuve, sous la forme d'une lettre ou d'une attestation estampillée sur la lettre de change, la traite bancaire ou le mandat, confirmant que cette institution ou société appartient à au moins l'une des catégories mentionnées à l'alinéa 4c) de l'IG07; et
 - c) une institution financière agréée est :
 - (i) une société ou institution membre de l'Association canadienne des paiements, conformément à la définition établie par la [Loi canadienne sur les paiements](#);
 - (ii) une société qui accepte des dépôts assurés par la Société d'assurance-dépôts du Canada ou par l'Autorité des marchés financiers jusqu'au maximum permis par la loi;
 - (iii) une société qui accepte du public des dépôts dont le remboursement est garanti par Sa Majesté du chef d'une province;
 - (iv) une société, une association ou une fédération constituée ou organisée comme caisse de crédit ou société coopérative de crédit, qui se conforme aux exigences d'une caisse de crédit, lesquelles sont décrites de façon plus précise au paragraphe 137(6) de la [Loi de l'impôt sur le revenu](#); ou
 - (v) la Société canadienne des postes.
- 5) Les obligations visées à l'alinéa 3b) de l'IG07 doivent être fournies à leur valeur courante du marché à la date de clôture de l'appel d'offres, et doivent être :
 - a) payables au porteur;
 - b) accompagnées d'un acte dûment exécuté de transfert des obligations au receveur général du Canada sous la forme prescrite par le *Règlement sur les obligations intérieures du Canada*; ou

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- c) enregistrées quant au capital ou quant au capital et aux intérêts au nom du receveur général du Canada, conformément au *Règlement sur les obligations intérieures du Canada*.
- 6) Une lettre de crédit de soutien irrévocable est acceptable pour le Canada comme solution de rechange à un dépôt de garantie, et le montant doit être établi comme il est mentionné ci-dessus pour un dépôt de garantie.
- 7) La lettre de crédit de soutien irrévocable mentionnée au paragraphe 6) de l'IG07 doit :
- a) constituer une disposition, quelle que soit sa désignation ou description, en vertu de laquelle une institution financière (l'« émetteur »), agissant à la demande et selon les instructions d'un client (le « requérant »), ou en son propre nom,
 - (i) doit verser un paiement au receveur général du Canada ou l'établir à son ordre, à titre de bénéficiaire;
 - (ii) doit accepter et payer les lettres de change tirées par le receveur général du Canada;
 - (iii) autorise une autre institution financière à effectuer ce paiement ou à accepter et à payer ces lettres de change; ou
 - (iv) autorise une autre institution financière à négocier, à la suite d'une demande écrite de paiement, à condition que les modalités de la lettre de crédit soient respectées;
 - b) préciser la somme nominale que l'on peut tirer;
 - c) préciser la date d'expiration;
 - d) prévoir le paiement à vue au receveur général du Canada à partir de la lettre de change de l'institution financière sur présentation d'une demande écrite de paiement signée par le représentant ministériel identifié dans la lettre de crédit par son bureau;
 - e) faire en sorte que plus d'une demande écrite de paiement puisse être présentée à condition que la somme de ces demandes ne dépasse pas la valeur nominale de la lettre de crédit;
 - f) prévoir son assujettissement aux *Règles et usances uniformes relatives aux crédits documentaires* (RUUCD) de la Chambre de commerce internationale (CCI), révision de 2007, publication de la CCI n° 600 (selon les RUUCD de la CCI, un crédit est irrévocable même s'il n'y a aucune indication à cet effet); et
 - g) être émise ou confirmée, dans l'une ou l'autre des langues officielles, par une institution financière qui est membre de l'Association canadienne des paiements et qui est sur le papier en-tête de l'émetteur ou du confirmateur. La mise en page est laissée à la discrétion de l'émetteur ou du confirmateur.
- 8) La garantie de soumission viendra à échéance ou sera retournée, dans les plus brefs délais possibles, suivant :
- a) la date de clôture de l'appel d'offres, pour un soumissionnaire dont la soumission est non conforme; et
 - b) la révision administrative des soumissions, pour les soumissionnaires dont la soumission est conforme et classée du quatrième au dernier rang dans l'échelle de classement; et
 - c) l'attribution du contrat, pour les soumissionnaires dont la soumission est retenue et classée aux deuxième et troisième rangs dans l'échelle de classement;

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- d) la réception de la garantie contractuelle, pour le soumissionnaire retenu; ou
 - e) l'annulation de la demande de soumissions pour tous les soumissionnaires.
- 9) Nonobstant les dispositions du paragraphe 8) de l'IG07 et à condition que trois (3) soumissions conformes ou plus aient été reçues, si une ou plusieurs des soumissions classées du troisième au premier rang sont retirées ou rejetées pour quelque raison que ce soit, le Canada se réserve le droit de retenir la garantie de la soumission conforme suivante afin de retenir la garantie de soumission d'au moins trois (3) soumissions valides et conformes.

IG08 PRÉSENTATION DES SOUMISSIONS

- 1) Il faut inclure le Formulaire de soumission et d'acceptation, dûment rempli, et la garantie de soumission dans une enveloppe scellée fournie par le soumissionnaire. L'enveloppe doit être adressée et remise au bureau désigné dans le formulaire d'APPEL D'OFFRES pour la réception des soumissions. La soumission doit parvenir à ce bureau au plus tard à la date et à l'heure indiquées pour la clôture de l'appel d'offres.
- 2) Sauf indication contraire dans les Instructions particulières à l'intention des soumissionnaires :
- a) la soumission doit être en dollars canadiens;
 - b) aucune protection contre la fluctuation du taux de change n'est offerte; et
 - c) aucune demande de protection contre les fluctuations du taux de change ne sera prise en considération.
- 3) Avant de présenter sa soumission, le soumissionnaire doit s'assurer que les renseignements suivants sont clairement dactylographiés ou écrits en caractères d'imprimerie sur l'enveloppe de soumission :
- a) numéro de l'appel d'offres;
 - b) nom du soumissionnaire;
 - c) adresse de retour; et
 - d) date et heure de clôture.
- 4) La responsabilité de faire parvenir la soumission à la bonne adresse et dans les délais prévus incombe entièrement au soumissionnaire.

IG09 RÉVISION DES SOUMISSIONS

- 1) Une soumission présentée conformément aux présentes instructions peut être révisée par lettre ou par télécopie, pourvu que la révision parvienne au bureau désigné pour la réception des soumissions au plus tard à la date et à l'heure de clôture de l'appel d'offres. Le document ou la télécopie doit porter l'en-tête de lettre ou la signature identifiant le soumissionnaire.
- 2) La soumission à prix unitaires qui est modifiée doit clairement mettre en évidence les changements apportés aux prix unitaires de même que les articles particuliers auxquels chaque changement s'applique.

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- 3) Une lettre ou une télécopie visant à confirmer une modification antérieure doit clairement indiquer qu'il s'agit d'une confirmation.
- 4) Si des dispositions ci-dessus ne sont pas respectées, seules les modifications irrecevables devront être rejetées. L'évaluation portera sur la soumission initiale déposée de même que sur les autres modifications recevables.

IG10 REJET DES SOUMISSIONS

- 1) Le Canada n'est tenu d'accepter aucune soumission, même la plus basse.
- 2) Sans limiter la portée générale du paragraphe 1) de l'IG10, le Canada peut rejeter une soumission dans l'un ou l'autre des cas suivants :
 - a) le soumissionnaire ou l'un de ses employés ou sous-traitants visés par la soumission a été reconnu coupable en vertu de l'article 121 (Fraudes envers le gouvernement et Entrepreneur qui souscrit à une caisse électorale), de l'article 124 (Achat ou vente d'une charge), de l'article 380 (Fraude commise au détriment de Sa Majesté) ou de l'article 418 (Vente d'approvisionnement défectueux à Sa Majesté) du *Code criminel du Canada* ou de l'alinéa 80(1)d) (Fausse inscription, faux certificat ou faux rapport), du paragraphe 80 (2) (Fraude commise au détriment de Sa Majesté) ou de l'article 154.01 (Fraude commise au détriment de Sa Majesté) de la *Loi sur la gestion des finances publiques*;
 - b) les privilèges permettant au soumissionnaire de présenter des soumissions ont été suspendus ou sont en voie de l'être;
 - c) les privilèges permettant à tout employé ou sous-traitant visé par la soumission de présenter des soumissions sont soumis à une suspension ou en voie de l'être, ce qui rendrait l'employé ou le sous-traitant inadmissible à soumissionner pour les travaux ou pour la partie des travaux que le sous-traitant ou l'employé doit exécuter;
 - d) le soumissionnaire déclare faillite ou ne peut, pour quelque motif que ce soit, exercer ses activités pour une durée prolongée;
 - e) des preuves de fraude, de corruption ou de fausse déclaration ou des preuves confirmant l'incapacité de respecter des lois protégeant les personnes contre toute forme de discrimination ont été déposées à la satisfaction du Canada à l'égard du soumissionnaire, d'un de ses employés ou d'un sous-traitant visé par sa soumission;
 - f) des preuves à la satisfaction du Canada que, compte tenu de son comportement antérieur, le soumissionnaire, un sous-traitant ou une personne désignée pour exécuter les travaux ne convient pas ou s'est comporté de façon inappropriée;
 - g) dans le cadre de transactions actuelles ou antérieures du soumissionnaire avec le Canada :
 - (i) le Canada a exercé ou entend exercer le recours contractuel lui permettant de retirer les travaux au soumissionnaire, au sous-traitant ou à l'employé visé par la soumission; ou
 - (ii) le Canada détermine que le rendement du soumissionnaire dans le cadre d'autres contrats est suffisamment médiocre pour qu'on le juge incapable de répondre au besoin faisant l'objet de la soumission.
- 3) Lors de l'évaluation du rendement du soumissionnaire dans le cadre d'autres contrats conformément au sous-alinéa 2)d)(iv) de l'IG10, le Canada peut tenir compte, notamment, des points suivants :

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- a) la qualité de l'exécution des travaux du soumissionnaire;
 - b) les délais dans lesquels les travaux ont été achevés;
 - c) la gestion générale des travaux et son incidence sur le niveau d'effort exigé de la part du Ministère et de son représentant; et
 - d) l'intégralité et l'efficacité du programme de sécurité de l'entrepreneur lors de l'exécution des travaux.
- 4) Sans limiter la portée générale des paragraphes 1), 2) et 3) de l'IG10, le Canada peut rejeter toute soumission en raison d'une évaluation défavorable des éléments suivants :
- a) le caractère adéquat du prix soumis pour permettre de réaliser les travaux et, dans le cas des soumissions proposant des prix unitaires ou un ensemble de forfaits et de prix unitaires, la mesure dans laquelle chaque prix proposé tient fidèlement compte du coût de l'exécution de la partie des travaux à laquelle ce prix s'applique;
 - b) la capacité du soumissionnaire à fournir la structure de gestion, le personnel compétent, l'expérience et l'équipement nécessaires pour exécuter les travaux de façon compétente dans le cadre du contrat; et
 - c) le rendement du soumissionnaire dans le cadre d'autres contrats.
- 5) Dans les cas où le Canada prévoit rejeter une soumission en application des paragraphes 1), 2), 3) ou 4) de l'IG10, excluant l'alinéa 2)g), l'autorité contractante préviendra le soumissionnaire et lui donnera dix (10) jours pour faire valoir son point de vue avant que la décision définitive ne soit prise concernant le rejet.
- 6) Le Canada peut ignorer les vices de forme et les irrégularités mineures contenues dans les soumissions qu'il reçoit s'il détermine que les différences entre la soumission et les exigences énoncées dans les documents de soumission peuvent être corrigées ou ignorées sans qu'un préjudice ne soit causé aux autres soumissionnaires.

IG11 COÛTS RELATIFS AUX SOUMISSIONS

- 1) Aucun paiement ne sera versé pour des frais engagés aux fins de la préparation et de la présentation d'une soumission en réponse à l'appel d'offres. Le soumissionnaire sera seul responsable des frais engagés à cette fin, ainsi que des frais qu'il aura engagés pour l'évaluation de sa soumission.

IG12 RESPECT DES LOIS APPLICABLES

- 1) En présentant une soumission, le soumissionnaire atteste qu'il a la capacité juridique de conclure un contrat et qu'il a en sa possession tous les permis, licences, inscriptions, attestations, déclarations, dépôts ou autres autorisations valides requis pour satisfaire à toutes les lois et à tous les règlements fédéraux, provinciaux et municipaux qui s'appliquent à la présentation de la soumission et à l'établissement du contrat portant sur l'exécution des travaux.
- 2) Aux fins de vérification des exigences mentionnées au paragraphe 1) de l'IG12, le soumissionnaire doit, sur demande et dans les délais précisés, fournir une copie de chaque permis, licence, inscription, attestation, déclaration, dépôt ou autre autorisation valides indiqués dans la demande.

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- 3) Le non-respect des exigences exprimées au paragraphe 2) de l'IG12 donnera lieu au rejet de la soumission.

IG13 APPROBATION DES MATÉRIAUX DE REMPLACEMENT

- 1) Dans les cas où l'on précise des matériaux en fonction d'une appellation ou d'une marque de commerce ou du nom du fabricant ou du fournisseur, la soumission doit être basée sur l'utilisation des matériaux désignés. Pendant la période d'appel d'offres, on pourra envisager des matériaux de remplacement à la condition que l'agent des marchés reçoive par écrit des données techniques complètes au moins dix (10) jours civils avant la date de clôture de l'appel d'offres.

IG14 CONFLIT D'INTÉRÊTS / AVANTAGE INDU

- 1) Afin de protéger l'intégrité du processus d'approvisionnement, les soumissionnaires sont avisés que le Canada peut rejeter une soumission dans les circonstances suivantes :
 - a) le soumissionnaire, un de ses sous-traitants ou un de leurs employés respectifs, actuels ou anciens, a participé d'une manière ou d'une autre à la préparation de l'appel d'offres ou est en situation de conflit d'intérêts ou d'apparence de conflit d'intérêts;
 - b) le soumissionnaire, un de ses sous-traitants ou un de leurs employés respectifs, actuels ou anciens, a eu accès à des renseignements relatifs à l'appel d'offres qui n'étaient pas à la disposition des autres soumissionnaires, et le Canada juge que cela donne ou semble donner au soumissionnaire un avantage indu.
- 2) L'expérience acquise par un soumissionnaire qui fournit ou a fourni les biens ou services décrits dans l'appel d'offres (ou des biens ou services semblables) ne sera pas en soi considérée par le Canada comme un avantage indu ou comme constituant un conflit d'intérêts. Ce soumissionnaire demeure cependant assujéti aux critères énoncés ci-dessus.
- 3) Dans le cas où le Canada a l'intention de rejeter une soumission conformément au présent article, l'autorité contractante préviendra le soumissionnaire et lui donnera la possibilité de faire valoir son point de vue, avant de prendre une décision définitive. Les soumissionnaires ayant un doute par rapport à une situation particulière devraient communiquer avec l'autorité contractante avant la date de clôture de l'appel d'offres. En soumissionnant, le soumissionnaire déclare qu'il n'est pas en conflit d'intérêts et qu'il ne bénéficie d'aucun avantage indu. Le soumissionnaire reconnaît que le Canada est seul habilité à établir s'il existe un conflit d'intérêts, un avantage indu ou une apparence de conflit d'intérêts ou d'avantage indu.



Annexe « B »

INSTRUCTIONS PARTICULIÈRES À L'INTENTION DES SOUMISSIONNAIRES



INSTRUCTIONS PARTICULIÈRES À L'INTENTION DES SOUMISSIONNAIRES (IP)

IP01	Documents de soumission
IP02	Demandes de renseignements pendant la période de soumission
IP03	Visite facultative des lieux
IP04	Révision des soumissions
IP05	Résultats de l'appel d'offres
IP06	Insuffisance de fonds
IP07	Période de validité des soumissions
IP08	Documents de projet
IP09	Sites Web
IP10	Exigences relatives à la sécurité du personnel

IP01 DOCUMENTS DE SOUMISSION

- 1) Les documents de soumission sont les suivants :
 - (a) INSTRUCTIONS PARTICULIÈRES À L'INTENTION DES SOUMISSIONNAIRES - Page 1 du formulaire AAFC / AAC5323-F;
 - (b) INSTRUCTIONS AUX SOUMISSIONNAIRES – Formulaire AAFC / AAC5301-F;
 - (c) FORMULAIRE DE SOUMISSION ET D'ACCEPTATION – Formulaire AAFC / AAC5313-F;
 - (d) Clauses et conditions précisées dans les DOCUMENTS CONTRACTUELS;
 - (e) Dessins et devis;
 - (f) FORMULAIRE DE SOUMISSION ET D'ACCEPTATION (AAFC / AAC5320-F) et les annexes s'y rattachant;
 - (g) toute modification publiée avant la date de clôture.

La présentation d'une soumission constitue une affirmation que le soumissionnaire a lu ces documents et accepte les modalités qui y sont énoncées.

IP02 DEMANDES DE RENSEIGNEMENTS PENDANT LA PÉRIODE DE SOUMISSION

- 1) Toute demande de renseignements concernant l'appel d'offres doit être présentée par écrit à l'agent d'approvisionnement dont le nom figure à l'APPEL D'OFFRES – page 1, et ce le plus tôt possible pendant la durée de l'appel d'offres. À l'exception de l'approbation de matériaux de remplacement, comme cela est décrit à l'IG13 des INSTRUCTIONS AUX SOUMISSIONNAIRES, toutes les autres demandes de renseignements devraient être reçues au moins cinq (5) jours civils avant la date de clôture de l'appel d'offres afin de laisser suffisamment de temps pour y répondre. Pour ce qui est des demandes de renseignements reçues après cette date, il est possible qu'on ne puisse y répondre.
- 2) Pour assurer la cohérence et la qualité de l'information fournie aux soumissionnaires, l'agent de négociation des marchés examinera le contenu de la demande de renseignements et décidera s'il convient ou non de publier une modification.
- 3) Toutes les demandes de renseignements et autres communications liées à cet appel d'offres envoyées pendant la période de soumission doivent être adressées UNIQUEMENT à l'agent de négociation des marchés dont le nom figure à la page 1 de l'APPEL D'OFFRES. À défaut de respecter cette condition, le soumissionnaire peut (pour cette seule raison) voir sa soumission rejetée.

INSTRUCTIONS PARTICULIÈRES À L'INTENTION DES SOUMISSIONNAIRES (suite)

IP03 VISITE FACULTATIVE DES LIEUX

- 1) Une visite des lieux aura lieu le mardi , 1 i er décembre, 2015 à 09: 00 AM PM HNT.

Les soumissionnaires intéressés devront se présenter à

308 rue Brookfi el d, Edi fi ce 25, à St-John' s à Terre-Neuve.

IP04 RÉVISION DES SOUMISSIONS

- 1) Une soumission peut être révisée par lettre ou par télécopie conformément à l'IG09 des INSTRUCTIONS AUX SOUMISSIONNAIRES. Le numéro du télécopieur pour la réception de révisions est le 514 283-1918 .

IP05 RÉSULTATS DE L'APPEL D'OFFRES

- 1) À la suite de la clôture de l'appel d'offres, les résultats pourront être obtenus auprès du bureau de réception des soumissions en envoyant un courriel à carol . rahal @agr. gc. ca .

IP06 INSUFFISANCE DE FONDS

- 1) Si la soumission conforme la plus basse dépasse le montant des fonds alloués pour les travaux, le Canada, à sa discrétion exclusive, peut prendre l'une ou l'autre, ou une combinaison, des mesures suivantes :
 - (a) annuler l'appel d'offres;
 - (b) obtenir des fonds supplémentaires et attribuer le contrat au soumissionnaire ayant fait l'offre conforme la plus basse;
 - (c) négocier avec le soumissionnaire ayant fait l'offre conforme la plus basse une réduction du prix offert ou de la portée des travaux de 15 % au plus. S'il s'avère impossible de parvenir à une entente satisfaisante pour le Canada, ce dernier exercera l'option (a) ou l'option (b).

IP07 PÉRIODE DE VALIDITÉ DES SOUMISSIONS

- 1) Le gouvernement du Canada se réserve le droit de demander une prorogation de la période de validité des soumissions tel qu'il est précisé à la disposition 4 du FORMULAIRE DE SOUMISSION ET D'ACCEPTATION. Dès la réception d'un avis écrit du gouvernement du Canada, les soumissionnaires auront le choix d'accepter ou de refuser la prorogation proposée.
- 2) Si la prorogation mentionnée à l'alinéa 1) de l'IP07 est acceptée par écrit par tous les soumissionnaires, le Canada poursuivra alors sans tarder l'évaluation des soumissions et les processus d'approbation.
- 3) Si la prorogation mentionnée à l'alinéa 1) de l'IP07 n'est pas acceptée par écrit par tous les soumissionnaires, le Canada pourra alors, à sa seule discrétion, prendre l'une ou l'autre des mesures suivantes :
 - (a) poursuivre l'évaluation des soumissions de ceux qui auront accepté la prorogation proposée et obtenir les approbations nécessaires;
 - (b) annuler l'appel d'offres.

INSTRUCTIONS PARTICULIÈRES À L'INTENTION DES SOUMISSIONNAIRES (suite)

- 4) Les conditions exprimées dans les présentes ne limitent d'aucune façon les droits du Canada définis dans la loi ou aux termes de l'IG10 des INSTRUCTIONS AUX SOUMISSIONNAIRES.

IP08 DOCUMENTS DE PROJET

- 1) À l'attribution du contrat, l'entrepreneur retenu recevra en version papier un ensemble de documents signés (plans d'exécution, devis et modificatifs), sous pli scellé. Des copies supplémentaires, jusqu'à concurrence de deux (2), seront fournies sans frais à la demande de l'entrepreneur. Il incombera à l'entrepreneur d'obtenir d'autres copies et d'en acquitter les frais.

IP09 SITES WEB

L'accès à certains des sites Web figurant dans les documents d'appel d'offres est assuré au moyen d'hyperliens. Voici une liste des adresses des sites Web :

Appendice L de la Politique sur les marchés du Conseil du Trésor, Compagnies de cautionnement reconnues

<http://www.tbs-sct.gc.ca/pol/doc-fra.aspx?id=14494§ion=text#appL>

Sanctions économiques canadiennes

<http://www.international.gc.ca/sanctions/index.aspx?lang=fra>

IP10 EXIGENCES RELATIVES À LA SÉCURITÉ DU PERSONNEL

- 1) Les membres du personnel de l'entrepreneur retenu, de même que tous les sous traitants et leurs employés, qui réaliseront une partie des travaux dans le cadre du marché subséquent doivent se conformer aux exigences de sécurité suivantes :
- Les membres du personnel devant réaliser une partie des travaux doivent TOUS détenir une COTE DE FIABILITÉ valide, délivrée ou approuvée par Agriculture et Agroalimentaire Canada. Tant que les évaluations de sécurité du personnel n'ont pas été complétées à la satisfaction d'Agriculture et Agroalimentaire Canada, le personnel de l'entrepreneur ou du sous-traitant NE PEUT réaliser les travaux prévus dans le marché. Chaque membre du personnel proposé doit remplir un « Formulaire d'autorisation de sécurité » (SCT/TBS 330-23F) à la demande du Canada.



Annexe « C »

FORMULAIRE DE SOUMISSION ET D'ACCEPTATION

FORMULAIRE DE SOUMISSION ET D'ACCEPTATION

CONTRAT DE CONSTRUCTION - GRANDS TRAVAUX

SA01 RENSEIGNEMENTS GÉNÉRAUX					
Description des travaux Le projet de laboratoire de pathologie consiste en un réaménagement complet de l'installation actuelle pour en assurer la conformité aux normes des laboratoires modernes. Il s'agira notamment d'enlever l'amiante présente dans les murs, le plafond et le plancher et d'installer de nouvelles armoires pour le rangement de l'équipement existant et nouveau ainsi que de nouvelles armoires supérieures avec portes vitrées pour le rangement mi eux ordonné des fournitures. En outre, des améliorations seront apportées aux services mécaniques et électriques et au système d'éclairage.					
Numéro de l'invitation à soumissionner 01B46-15-0187			Numéro de dossier / projet 1516-143110-p07		
SA02 DÉNOMINATION COMMERCIALE ET ADRESSE DU SOUMISSIONNAIRE					
Nom					
Adresse					
Pièce/bureau/appt.	Numéro civique	Suffixe de numéro	Rue	Type de rue	Direction de la rue
BP ou numéro de route		Municipalité (ville, village, etc.)		Province	Code postal
No. de téléphone		No. de télécopieur		Courriel	
SA03 OFFRE					
1) Le soumissionnaire offre au Canada, représenté par le ministère de l'Agriculture et de l'Agroalimentaire, d'exécuter les travaux du projet mentionné ci-dessus, conformément aux documents de soumission pour le montant de soumission total de :					
\$ _____ taxes applicables en sus (TPS/TVH/TVQ) (exprimé en chiffres seulement)					
SA04 PÉRIODE DE VALIDITÉ DES SOUMISSIONS					
1) La soumission ne peut être retirée pendant une période de <u>60</u> jours suivant la date de clôture de l'invitation à soumissionner.					
SA05 ANNEXES					
1) Les annexes suivantes sont jointes au présent Formulaire de soumission et d'acceptation :					
<input checked="" type="checkbox"/> Annexe 2					
SA06 ACCEPTATION ET CONTRAT					
1) À l'acceptation de l'offre de l'entrepreneur par le Canada, un contrat exécutoire est conclu entre lui et le Canada. Les documents constituant le contrat sont ceux mentionnés à la disposition CS01 DOCUMENTS DU CONTRAT.					
SA07 DURÉE DES TRAVAUX					
1) L'entrepreneur doit mener à bien les travaux d'ici le <u>2016-03-31</u>					
SA08 GARANTIE DE SOUMISSION					
1) L'entrepreneur doit joindre à sa soumission une garantie de soumission conformément à l'IG08 EXIGENCES RELATIVES À LA GARANTIE DE SOUMISSION.					
2) Si un dépôt de garantie est donné comme garantie de soumission et que l'entrepreneur, suite à l'acceptation de sa soumission par le Canada, refuse de fournir la garantie contractuelle exigée à la disposition CG9 GARANTIE CONTRACTUELLE, le dépôt de garantie sera confisqué; toutefois, le Canada peut renoncer à son droit de confisquer le dépôt de garantie, si cela est dans l'intérêt public.					

SA09 SIGNATURE

Nom et titre de la personne autorisée
à signer au nom du soumissionnaire
(en caractères d'imprimerie)

Nom

Titre

Signature

Date

Nom

Titre

Signature

Date

FORMULAIRE DE SOUMISSION ET D'ACCEPTATION
CONTRAT DE CONSTRUCTION - GRANDS TRAVAUX
ANNEXE 2

LISTE DES SOUS-TRAITANTS

L'entrepreneur sous-traitera les parties des travaux énoncés ci-dessous au sous-traitant désigné. L'entrepreneur convient de n'apporter aucun changement à la liste des sous-traitants avant d'avoir obtenu l'autorisation écrite du représentant ministériel. L'entrepreneur reconnaît que, pour chaque partie des travaux, si plus d'un sous-traitant est désigné, si aucun sous-traitant n'est désigné ou si l'entrepreneur néglige d'indiquer que les travaux seront effectués par ses propres employés, selon le cas, la soumission sera jugée irrecevable.

LISTE DE L'ÉQUIPEMENT

LISTE DES MATÉRIAUX



Annexe « D »

TRAVAUX MAJEURS – CONDITIONS GÉNÉRALES



TRAVAUX MAJEURS - CONDITIONS GÉNÉRALES

Page 1 of 58

**CONDITIONS GÉNÉRALES POUR LES TRAVAUX MAJEURS:
FORMULAIRE AAC 5321 :**

Date de Révision

CG1	DISPOSITIONS GÉNÉRALES	Original
CG2	ADMINISTRATION DU CONTRAT	Original
CG3	EXÉCUTION ET CONTRÔLE DES TRAVAUX	Original
CG4	MESURES DE PROTECTION	Original
CG5	MODALITÉS DE PAIEMENT	Original
CG6	RETARDS ET MODIFICATION DES TRAVAUX	Original
CG7	DÉFAUT, SUSPENSION OU RÉSILIATION DU CONTRAT	Original
CG8	RÈGLEMENT DES DIFFÉRENDS	Original
CG9	SÉCURITÉ DES CONTRATS	Original
CG10	ASSURANCE	Original

CG1 DISPOSITIONS GÉNÉRALES

- CG1.1 INTERPRÉTATION
 - CG1.1.1 En-têtes et renvois
 - CG1.1.2 Terminologie
 - CG1.1.3 Application de certaines dispositions
 - CG1.1.4 Achèvement substantiel
 - CG1.1.5 Achèvement
- CG1.2 DOCUMENTS CONTRACTUELS
 - CG1.2.1 Généralités
 - CG1.2.2 Ordre de priorité
 - CG1.2.3 Sécurité et protection des travaux et des documents
- CG1.3 STATUT DE L'ENTREPRENEUR
- CG1.4 DROITS ET RECOURS
- CG1.5 RIGUEUR DES DÉLAIS
- CG1.6 INDEMNISATION PAR L'ENTREPRENEUR
- CG1.7 INDEMNISATION PAR LE CANADA
- CG1.8 LOIS, PERMIS ET TAXES
- CG1.9 INDEMNISATION DES TRAVAILLEURS
- CG1.10 SÉCURITÉ NATIONALE
- CG1.11 TRAVAILLEURS INAPTES
- CG1.12 CÉRÉMONIES PUBLIQUES ET ENSEIGNES
- CG1.13 CONFLIT D'INTÉRÊTS
- CG1.14 CONVENTIONS ET MODIFICATIONS
- CG1.15 SUCCESSION
- CG1.16 CESSION
- CG1.17 POTS-DE-VIN
- CG1.18 ATTESTATION – HONORAIRES CONDITIONNELS
- CG1.19 SANCTIONS INTERNATIONALES

CG1.1 INTERPRÉTATION**CG1.1.1 En-têtes et renvois**

- 1) Les en-têtes des documents contractuels, sauf ceux des dessins et des devis, ne font pas partie du contrat; ils sont reproduits seulement pour en faciliter la consultation.
- 2) Les renvois à des parties du contrat à l'aide de chiffres précédés de lettres correspondent aux parties du contrat désignées par cette combinaison de chiffres et de lettres et à toutes les autres parties du contrat visées par ces renvois.
- 3) Un renvoi à un paragraphe ou un alinéa suivi d'un chiffre, d'une lettre ou d'une combinaison de chiffres et de lettres constitue, sauf indication contraire, un renvoi au paragraphe ou à l'alinéa faisant partie de la clause dans laquelle ce renvoi est noté.

CG1.1.2 Terminologie

- 1) Dans le contrat

« Canada », « État » et « Sa Majesté » désignent Sa Majesté la Reine du chef du Canada;

« Certificat d'achèvement » signifie le certificat délivré par le Canada à la fin des travaux;

« Certificat d'achèvement substantiel » signifie le certificat délivré par le Canada lorsque les travaux sont substantiellement achevés;

« Certificat de mesure » désigne le certificat délivré par le Canada pour confirmer l'exactitude des quantités finales, des prix unitaires et des valeurs pour la main-d'œuvre, l'outillage et les matériaux fournis et utilisés par l'entrepreneur pour la construction de la partie des travaux à laquelle se rapporte une entente à prix unitaire;

« Conditions supplémentaires » désigne la partie du contrat modifiant ou complétant les Conditions générales;

« Contrat » désigne les documents mentionnés dans ce contrat et tous les autres documents précisés ou visés dans l'un quelconque des documents faisant partie du contrat, et inclut les modifications apportées à ces documents par convention des parties;

« Coût estimatif total », « coût estimatif révisé », « augmentation (diminution) » à la page 1 du contrat ou de la modification au contrat désigne un montant utilisé à des fins administratives internes seulement qui comprend le montant du contrat, ou le montant révisé du contrat, ou le montant qui augmenterait ou diminuerait le montant du contrat et les taxes applicables, conformément à l'évaluation de l'autorité contractante; il ne s'agit pas d'une opinion fiscale de la part du Canada;

« Dans les présentes », « par les présentes », « des présentes », « en vertu des présentes » et les expressions comparables désignent l'ensemble du contrat, et non une section ou une partie du contrat en particulier;

« Entente à forfait » désigne la partie du contrat prescrivant le versement d'un forfait pour l'exécution des travaux correspondants;

« Entente à prix unitaire » désigne la partie du contrat prescrivant le produit de la multiplication d'un prix par unité de mesure par le nombre d'unités de mesure pour l'exécution des travaux correspondants;

« Entrepreneur » signifie la personne qui passe un contrat avec le Canada pour fournir l'ensemble de la main-d'œuvre, des matériaux et de l'outillage permettant d'exécuter les travaux en vertu de ce contrat, y compris le surintendant de l'entrepreneur identifié par écrit au Canada;

« Fournisseur » signifie la personne ayant un contrat directement avec l'entrepreneur pour fournir l'outillage ou les matériaux non personnalisés pour les travaux;

« Garantie du contrat » signifie toute garantie donnée au Canada par l'entrepreneur conformément au contrat;

« Jour ouvrable » désigne une journée distincte du samedi, du dimanche ou d'un jour férié observé dans le secteur du bâtiment, dans la région où se déroulent les travaux;

« Matériaux » comprend les marchandises, articles, machineries, équipements, appareils et choses devant être fournis en vertu du contrat pour être incorporés aux travaux;

« Montant du contrat » signifie le montant indiqué dans le contrat et à verser à l'entrepreneur pour les travaux, sous réserve des modalités et des conditions du contrat, excluant les taxes applicables;

« Outillage » comprend les outils, instruments, machines, véhicules, constructions, équipements, articles et choses qui sont nécessaires à l'exécution des travaux, autres que les matériaux et les outils habituellement fournis par une personne de métier dans l'exercice d'un métier;

« Personne » comprend également, sauf lorsque le contrat stipule le contraire, une corporation, une compagnie, une entreprise, une firme, une coentreprise, un consortium ou une société;

« Représentant du ministère » signifie la personne désignée dans le contrat ou dans un avis écrit signifié à l'entrepreneur comme représentant du ministère pour l'application de ce contrat, y compris toute personne autorisée et désignée par ce dernier par écrit;

« Sous-traitant » désigne une personne ayant un contrat directement avec l'entrepreneur, conformément à la CG3.6 SOUS-TRAITANCE, pour exécuter une ou des parties des travaux ou pour fournir des matériaux personnalisés pour les travaux;

« Surintendant » signifie l'employé ou du représentant de l'entrepreneur désigné par ce dernier pour exercer les fonctions décrites dans la CG2.6 SURINTENDANT;

« Tableau des prix unitaires » signifie le tableau des prix figurant dans le contrat;

« Taxes applicables » signifie la taxe sur les produits et services (TPS), la taxe de vente harmonisée (TVH) et toute taxe provinciale payable par le Canada selon la loi, telle que la taxe de vente du Québec (TVQ) à compter du 1^{er} avril 2013;

« Travaux » désigne, sous réserve de toute disposition contraire du contrat, tout ce que l'entrepreneur doit faire, fournir ou livrer pour exécuter le contrat, conformément aux documents contractuels.

CG1.1.3 Application de certaines dispositions

- 1) Toutes les dispositions du contrat qui s'appliquent expressément à une entente à prix unitaire ne s'appliquent pas à toute partie des travaux visée par une entente à forfait.
- 2) Toutes les dispositions du contrat qui s'appliquent expressément à une entente à forfait ne s'appliquent pas à toute partie des travaux visée par une entente à prix unitaire.

CG1.1.4 Achèvement substantiel

- 1) Les travaux sont considérés comme étant substantiellement achevés :
 - a) lorsque, à la suite des inspections et essais réalisés, une partie substantielle ou la totalité des travaux prévus au contrat est, de l'avis du Canada, prête à être utilisée par le Canada ou est utilisée aux fins prévues;
 - b) lorsque les travaux qui restent à effectuer en vertu du contrat peuvent, de l'avis du Canada, être achevés ou rectifiés à un coût n'excédant pas :
 - (i) 3 % des premiers 500 000 \$;
 - (ii) 2 % des prochains 500 000 \$; et

(iii) 1 % du reste

du montant du contrat au moment du calcul de ce coût.

- 2) Lorsque la totalité ou une partie substantielle des travaux est prête à être utilisée aux fins prévues et
 - a) que le reste ou une partie des travaux ne peut être achevé dans les délais précisés dans le contrat ou dans une version modifiée, conformément à la CG6.5 RETARDS ET PROLONGATION DE DÉLAI, pour des raisons indépendantes de la volonté de l'entrepreneur ou
 - b) que le Canada et l'entrepreneur ont convenu de ne pas terminer les travaux dans les délais précisés,

le coût de la partie des travaux qui n'a pas été terminée en raison de circonstances indépendantes de la volonté de l'entrepreneur ou que le Canada et l'entrepreneur ont convenu de ne pas terminer dans les délais précisés est déduit du montant du contrat mentionné au sous-alinéa l'alinéa 1)b) de la CG1.1.4, et ce coût ne fait pas partie du coût des travaux restants à effectuer aux fins de la détermination de l'achèvement substantiel.

CG1.1.5 Achèvement

- 1) Les travaux sont réputés avoir été achevés lorsque l'ensemble de la main-d'œuvre, de l'outillage et des matériaux nécessaires ont été utilisés ou fournis et que l'entrepreneur a respecté le contrat, de même que tous les ordres et toutes les directives donnés à cet égard, à la satisfaction du Canada.

CG1.2 DOCUMENTS CONTRACTUELS

CG1.2.1 Généralités

- 1) Les documents contractuels sont complémentaires, et les exigences de l'un quelconque de ces documents ont le même caractère obligatoire que si elles étaient indiquées dans tous les documents.
- 2) Dans les documents contractuels, le singulier s'entend également du pluriel lorsque le contexte l'exige.
- 3) Nulle disposition des documents contractuels n'aura pour effet de créer une relation contractuelle entre le Canada et un sous-traitant ou un fournisseur, leurs sous-traitants ou leurs fournisseurs, ou leurs mandataires ou employés.

CG1.2.2 Ordre de priorité

- 1) En cas de divergence ou de contradiction dans les documents suivants, leur prépondérance est établie selon l'ordre ci-après :
 - a) toute modification ou variante des documents contractuels apportée conformément aux Conditions générales;

- b) toute modification déposée avant la date de clôture de l'appel d'offres;
- c) les Conditions supplémentaires;
- d) les Conditions générales;
- e) le Formulaire de soumission et d'acceptation rempli en bonne et due forme lorsqu'il est accepté;
- f) les dessins et devis;

les dates ultérieures déterminent la priorité des documents dans chacune des catégories de documents ci-dessus.

- 2) En cas de divergence ou de contradiction dans l'information reproduite dans les dessins et devis, les règles suivantes s'appliquent :
 - a) les devis l'emportent sur les dessins;
 - b) les dimensions exprimées en chiffres sur un dessin, lorsque celles-ci diffèrent des dimensions à l'échelle sur le même dessin, l'emportent sur ces dernières;
 - c) les dessins à grande échelle l'emportent sur les dessins à petite échelle.

CG1.2.3 Sécurité et protection des travaux et des documents

- 1) L'entrepreneur garde et protège les documents contractuels, les dessins, les renseignements, les maquettes et les copies fournis ou non par le Canada à l'entrepreneur, contre toute perte ou dommage de quelque nature que ce soit.
- 2) L'entrepreneur respecte le caractère confidentiel de tous les renseignements qui lui sont fournis par le Canada ou en son nom relativement aux travaux et de tous les renseignements qu'il élabore dans le cadre des travaux. Il ne devra pas divulguer ces renseignements à quiconque sans l'autorisation écrite du Canada, mais pourra toutefois divulguer à un sous-traitant autorisé conformément au contrat les renseignements nécessaires à l'exécution du contrat de sous-traitance. Cette section ne s'applique pas aux renseignements :
 - a) publiquement accessibles d'une source autre que l'entrepreneur; ou
 - b) dont l'entrepreneur a pris connaissance auprès d'une source distincte du Canada, sauf s'il s'agit d'une source qui, au su de l'entrepreneur, est tenue de ne pas les divulguer en vertu de son obligation envers le Canada.
- 3) Lorsque le contrat, les travaux ou tout renseignements visés au paragraphe 2) sont désignés par le Canada comme très secrets, secrets, confidentiels ou protégés, l'entrepreneur doit, en tout temps, prendre toute mesure raisonnable jugée nécessaire pour les protéger, y compris les mesures qui peuvent être précisées ailleurs dans le contrat ou fournies par écrit, périodiquement, par le Canada.
- 4) Sans limiter la portée générale des paragraphes 2) et 3) de la CG1.2.3, lorsque le contrat, les travaux ou tout renseignement visés au paragraphe 2) sont désignés par le Canada comme très secrets, secrets, confidentiels ou protégés, le Canada a le droit d'inspecter les locaux de l'entrepreneur et de ses sous-traitants ou fournisseurs, de même que ceux de quelque autre

personne que ce soit, à tous les niveaux, pour des raisons de sécurité, en tout temps pendant la durée du contrat; l'entrepreneur doit respecter toutes les instructions écrites délivrées par le Canada et s'assurer que tous ces sous-traitants ou fournisseurs en font autant, en ce qui a trait aux documents ainsi désignés, y compris lorsque des employés de l'entrepreneur et de ses sous-traitants et fournisseurs et de quelque autre personne que ce soit, à tous les niveaux, doivent signer et fournir des déclarations se rapportant à des enquêtes de sûreté, à des cotes de sécurité et à d'autres procédures.

- 5) L'entrepreneur doit protéger les travaux et le contrat, les devis, les dessins et tous les autres renseignements que lui fournit le Canada et est responsable, envers ce dernier, de toutes les pertes ou de tous les dommages de quelque nature que ce soit et découlant de quelque cause que ce soit.

CG1.3 STATUT DE L'ENTREPRENEUR

- 1) L'entrepreneur est engagé, en vertu du contrat, à titre d'entrepreneur indépendant.
- 2) L'entrepreneur, ses sous-traitants et fournisseurs et quelque autre personne que ce soit, à tous les niveaux, ainsi que leurs employés, ne sont pas engagés à titre d'employés, de préposés ou de mandataires du Canada.
- 3) Pour les besoins du contrat, l'entrepreneur est seul responsable de toutes les sommes à verser et de toutes les retenues à prélever en vertu de la loi relativement à l'exécution des travaux, ainsi que des sommes à verser dans le cadre du Régime de pensions du Canada ou du Régime de rentes du Québec, de l'assurance-emploi, du Régime de santé et sécurité au travail, de régimes provinciaux de santé ou d'assurance, et de l'impôt sur le revenu.

CG1.4 DROITS ET RECOURS

- 1) Sauf dans les cas prévus expressément dans le contrat, les droits et obligations imposés en vertu du contrat et les droits et recours dont on peut se prévaloir à ce titre s'ajoutent aux devoirs, aux obligations, aux droits et aux recours normalement imposés ou prévus par la loi et sans les restrictions.

CG1.5 RIGUEUR DES DÉLAIS

- 1) Le temps est de l'essence même du contrat.

CG1.6 INDEMNISATION PAR L'ENTREPRENEUR

- 1) L'entrepreneur acquitte toutes les redevances et tous les droits de brevet nécessaires à l'exécution du contrat et assume à ses frais la défense du Canada contre toutes les réclamations, actions ou procédures déposées ou intentées contre le Canada et alléguant que les travaux ou toute partie de ceux-ci réalisés ou fournis par l'entrepreneur pour le Canada portent atteinte à des brevets, modèles industriels, droits d'auteur, marques de commerce, secrets industriels ou autres droits de propriété susceptibles d'exécution au Canada.
- 2) L'entrepreneur tient le Canada indemne ou à couvert de toutes, réclamations, demandes d'indemnités, pertes, frais, dommages, actions, poursuites ou procédures présentés ou intentés par quiconque et découlant, directement ou indirectement, des activités de

l'entrepreneur, de ses sous-traitants et fournisseurs, et de toute autre personne à tous les niveaux, dans l'exécution des travaux.

- 3) Pour l'application du paragraphe 2) de la CG1.6, le terme « activités » signifie toute activité exécutée de manière fautive, toute omission relativement à une activité et tout retard dans l'exécution d'une activité.

CG1.7 INDEMNISATION PAR LE CANADA

- 1) Le Canada, sous réserve des dispositions de la [Loi sur la responsabilité civile de l'État et le contentieux administratif](#), de la [Loi sur les brevets](#) et de toutes les autres lois touchant ses droits, pouvoirs, privilèges ou obligations, tient indemne et à couvert l'entrepreneur de tous coûts, réclamations, demandes d'indemnités, pertes, dommages, actions en justice, poursuites ou procédures découlant de ses activités en vertu du contrat attribuables directement à :
 - a) une lacune ou un vice, réel ou allégué, dans les droits du Canada concernant le chantier s'il en est propriétaire;
 - b) une contrefaçon ou prétendue contrefaçon par l'entrepreneur de tout brevet d'invention ou de toute autre forme de propriété intellectuelle, dans l'exécution de tout acte aux fins du contrat, comportant l'utilisation d'un modèle, d'un plan, d'un dessin ou de toute autre chose fournis par le Canada à l'entrepreneur aux fins des travaux.

CG1.8 LOIS, PERMIS ET TAXES

- 1) L'entrepreneur observe toutes les dispositions législatives et réglementaires applicables à l'exécution des travaux ou toute partie de celles-ci, qu'elles soient fédérales, provinciales ou municipales, y compris, sans nécessairement s'y limiter, toute loi se rapportant à la santé, aux conditions de travail et à la protection de l'environnement; il doit exiger que tous ses sous-traitants et fournisseurs, à tous les niveaux, en fassent autant comme si les travaux étaient exécutés pour un maître d'ouvrage autre que le Canada. L'entrepreneur doit fournir au Canada la preuve confirmant que ces lois et règlements sont respectés à tout moment où le Canada lui adresse une demande à cet effet.
- 2) Sauf indication contraire dans le contrat, l'entrepreneur obtient et maintient en vigueur tous les permis, certificats, licences, enregistrements et autorisations nécessaires pour exécuter les travaux conformément à la loi.
- 3) Avant le début des travaux sur le chantier, l'entrepreneur dépose auprès de l'administration municipale un montant égal à l'ensemble des droits et des frais qui, en vertu de la loi, seraient payables à cette administration municipale pour les permis de construction, comme si les travaux étaient exécutés pour un maître d'ouvrage autre que le Canada.
- 4) Dans les 10 jours qui suivent l'offre mentionnée au paragraphe 3) de la CG1.8, l'entrepreneur avise le Canada du montant qu'il a déposé auprès de l'administration municipale et précise si ce dépôt a été accepté ou non.
- 5) Si l'administration municipale n'a pas accepté le montant déposé, l'entrepreneur verse cette somme au Canada dans les 6 jours suivant l'expiration du délai fixé au paragraphe 4) de la CG1.8.

- 6) Pour l'application de la présente clause, l'expression « administration municipale » désigne une administration qui aurait compétence pour autoriser l'exécution des travaux si le propriétaire n'en était pas le Canada.
- 7) Nonobstant le lieu de résidence de l'entrepreneur verse toute taxe applicable découlant de l'exécution des travaux prévus au contrat.
- 8) Conformément à la déclaration statutaire visée au paragraphe 4) de la CG5.5 ACHÈVEMENT SUBSTANTIEL DES TRAVAUX, l'entrepreneur dont ni le lieu de résidence ni la place d'affaires n'est dans la province ou le territoire où sont effectués les travaux prévus au contrat, fournit au Canada une preuve d'enregistrement auprès des autorités provinciales responsables de la taxe de vente dans cette province.
- 9) Pour le paiement des taxes applicables ou pour le dépôt de la garantie du paiement des taxes applicables découlant directement ou indirectement de l'exécution des travaux, et nonobstant la clause stipulant que si l'ensemble des matériaux, de l'outillage et des droits sur tous les biens immobiliers, permis, pouvoirs et privilèges appartiennent au Canada après que ce dernier les ait acquis, conformément à la CG3.10 MATÉRIAUX, OUTILLAGE ET BIENS IMMOBILIERS DEVENUS PROPRIÉTÉ DU CANADA, l'entrepreneur assume la responsabilité, à titre d'utilisateur ou de consommateur, du paiement des taxes applicables ou du dépôt de garantie pour le paiement des taxes applicables, durant la période pendant laquelle il utilise ou consomme ces matériaux, cet outillage et ces droits conformément aux lois pertinentes.
- 10) Les ministères et les organismes fédéraux doivent payer les taxes applicables.
- 11) Les taxes applicables seront payées par le Canada conformément aux dispositions sur la présentation de demande de paiement. Il revient à l'entrepreneur de facturer les taxes applicables selon le taux approprié, conformément aux lois en vigueur. L'entrepreneur accepte de remettre aux autorités fiscales appropriées les sommes acquittées ou exigibles au titre de taxes applicables.
- 12) L'entrepreneur n'a pas droit aux exemptions fiscales dont jouit le Canada, notamment pour le paiement des taxes de vente provinciales, sauf indication contraire de la loi. L'entrepreneur doit payer la taxe de vente provinciale, les taxes accessoires et toute taxe à la consommation qui s'appliquent sur les biens ou services taxables utilisés ou consommés dans le cadre de l'exécution du contrat (conformément aux lois en vigueur), y compris les matériaux incorporés dans des biens immobiliers.
- 13) Dans les cas où les taxes applicables, les droits de douane et les taxes d'accise sont compris dans le montant du contrat, ce dernier sera ajusté afin de tenir compte de toute augmentation ou diminution des taxes applicables, droits de douane et taxes d'accise qui se sera produite entre la présentation de la soumission et l'attribution du contrat. Toutefois, il n'y aura pas d'ajustement relatif à toute modification visant à augmenter le montant du contrat, si un avis public assez détaillé de la modification, qui aurait pu permettre à l'entrepreneur d'en calculer les effets, a été donné avant la date de clôture de la soumission.
- 14) Retenue d'impôt de 15 % – Agence du revenu du Canada

En vertu de la [Loi de l'impôt sur le revenu](#), 1985, ch. 1 (5^e suppl.) et du [Règlement de l'impôt sur le revenu](#), le Canada doit retenir 15 % du montant à payer à l'entrepreneur pour des services rendus au Canada si l'entrepreneur n'est pas un résident du Canada, à

moins que ce dernier obtienne une exonération valide de l'Agence du revenu du Canada. Le montant retenu sera conservé dans un compte pour l'entrepreneur pour tout impôt à payer exigible par le Canada.

CG1.9 INDEMNISATION DES TRAVAILLEURS

- 1) Avant le début des travaux, de même qu'à la date de l'achèvement substantiel des travaux et avant la délivrance du certificat d'achèvement, l'entrepreneur dépose des pièces justificatives confirmant qu'il respecte les lois sur l'indemnisation des travailleurs applicables sur les lieux des travaux, et notamment qu'il a acquitté les sommes exigibles à ce titre.
- 2) En tout temps pendant la durée du contrat, à la demande du Canada, l'entrepreneur dépose les pièces justificatives démontrant qu'il respecte ces lois et qu'il en est de même de ses sous-traitants et de toute autre personne à tous les niveaux et de toute autre personne participant à l'exécution des travaux qui est assujettie à ces lois.

CG1.10 SÉCURITÉ NATIONALE

- 1) Si le Canada est d'avis que les travaux sont de nature à mettre en cause la sécurité nationale, il peut ordonner à l'entrepreneur :
 - a) de lui fournir tout renseignement sur les personnes embauchées ou à embaucher par l'entrepreneur aux fins du contrat; et
 - b) de retirer du chantier toute personne dont l'emploi peut en l'occurrence, de l'avis du Canada, comporter un risque pour la sécurité nationale;et l'entrepreneur doit s'y conformer.
- 2) Les contrats que l'entrepreneur pourra conclure avec les personnes qui seront affectées à l'exécution des travaux doivent contenir des dispositions qui lui permettront de s'acquitter de toute obligation qui lui incombe en vertu du paragraphe 1) de la CG1.10.

CG1.11 TRAVAILLEURS INAPTES

- 1) Le Canada ordonnera à l'entrepreneur de retirer du chantier toute personne engagée par ce dernier aux fins de l'exécution du contrat qui, de l'avis du Canada, est incompétente ou s'est conduite de façon malveillante, et l'entrepreneur doit interdire l'accès au chantier à toute personne ainsi retirée.

CG1.12 CÉRÉMONIES PUBLIQUES ET ENSEIGNES

- 1) L'entrepreneur ne permet pas de cérémonies publiques relativement aux travaux sans le consentement préalable du Canada.
- 2) L'entrepreneur n'érige ou ne permet l'érection d'enseignes ou de panneaux publicitaires sur les travaux ou le chantier sans le consentement préalable du Canada.

CG1.13 CONFLIT D'INTÉRÊTS

- 1) Il est entendu qu'une personne assujettie aux dispositions relatives à l'après-mandat du Code régissant la conduite des titulaires de charge publique concernant les conflits d'intérêts et l'après-mandat ou du Code de valeurs et d'éthique de la fonction publique ne peut bénéficier directement du présent contrat, à moins que cette personne ne respecte les dispositions applicables concernant l'après-mandat.

CG1.14 CONVENTIONS ET MODIFICATIONS

- 1) Le contrat constitue l'intégralité des conventions conclues entre les parties en ce qui a trait à son objet et annule et remplace toutes négociations, communications et autres conventions antérieures s'y rapportant, qu'elles aient été écrites ou verbales, sauf si elles sont intégrées par renvoi. Aucune modalité, condition, déclaration, affirmation ou clause autres que celles énoncées au contrat ne lient les parties.
- 2) Le défaut de l'une ou l'autre des parties d'exiger, à quelque moment, que l'autre partie se conforme à une clause du contrat n'aura pas pour effet d'empêcher qu'elle puisse exiger l'exécution de cette clause ultérieurement; de même, la renonciation par l'une ou l'autre des parties à invoquer le manquement de l'autre partie à une clause ou condition du contrat ne sera pas réputée constituer une renonciation à son droit d'opposer tout manquement ultérieur à cette même clause ou condition.
- 3) Le contrat pourra être modifié uniquement en conformité des modalités qui y sont prévues.

CG1.15 SUCCESSION

- 1) Le contrat est au bénéfice des parties au contrat, de même qu'à celui de leurs héritiers légaux, exécuteurs testamentaires, administrateurs, successeurs et, sous réserve de la CG1.16 CESSION, au bénéfice de leurs ayants droit, qui sont tous par ailleurs liés par ses dispositions.

CG1.16 CESSION

- 1) L'entrepreneur ne peut céder le contrat, en totalité ou en partie, sans le consentement écrit du Canada.

CG1.17 POTS-DE-VIN

- 1) L'entrepreneur déclare aux fins des présentes qu'aucun pot-de-vin, présent, bénéfice ou autre avantage n'a été ni ne sera consenti, promis ou offert, directement ou indirectement, à un représentant ou à un employé du Canada ni à un membre de sa famille, en vue d'exercer une influence sur la conclusion ou la gestion du contrat.

CG1.18 ATTESTATION – HONORAIRES CONDITIONNELS

- 1) À la présente :
 - a) « honoraires conditionnels » signifie tout paiement ou autre forme de rémunération, qui est subordonné au degré de succès ou calculé en fonction du degré de succès obtenu en rapport à l'obtention d'un contrat gouvernemental, ou à la négociation d'une partie ou de

- la totalité des conditions de ce contrat ou à toute demande ou démarche reliée à ce contrat;
- b) « employé(e) » signifie toute personne avec qui l'entrepreneur a une relation employeur-employé;
 - c) « personne » comprend une personne ou un groupe de personnes, une corporation, une société de personnes, une organisation et une association et, sans limiter la portée générale de ce qui précède, tout particulier qui est tenue de fournir au directeur une déclaration en vertu de l'article 5 de la [Loi sur le lobbying](#), L.R.C. 1985, ch. 44 (4^e suppl.) et de ses modifications.
- 2) L'entrepreneur atteste qu'il n'a pas versé ni convenu de verser, directement ou indirectement, et s'engage à ne pas verser, directement ou indirectement, des honoraires conditionnels pour la sollicitation, la négociation ou l'obtention du présent contrat ou en rapport à toute demande ou démarche reliée au présent contrat, à aucune personne autre qu'un employé agissant dans l'exécution normale de ses fonctions.
 - 3) Tous les comptes et documents concernant le versement d'honoraires ou de toute autre rémunération reliés à la sollicitation, l'obtention ou la négociation du contrat sont assujettis aux dispositions du contrat portant sur les comptes et la vérification.
 - 4) Si l'entrepreneur fait une fausse déclaration aux termes de la présente section ou ne respecte pas les obligations précisées dans le présent document, le Canada peut soit retirer à l'entrepreneur les travaux qui lui ont été confiés conformément aux dispositions du contrat, soit recouvrer, de l'entrepreneur, par une réduction du prix du contrat ou autrement, le montant total des honoraires conditionnels.

CG1.19 SANCTIONS INTERNATIONALES

- 1) Les personnes au Canada, et les Canadiens à l'étranger, sont liés par les sanctions économiques imposées par le Canada. En conséquence, le gouvernement du Canada ne peut accepter la livraison d'aucun bien ou service provenant, directement ou indirectement, d'un ou plusieurs pays ou de personnes assujettis aux [sanctions économiques](#).
 - 2) Une condition essentielle de ce contrat est que l'entrepreneur ne fournisse pas au gouvernement du Canada un bien ou un service assujetti aux sanctions économiques.
 - 3) L'entrepreneur est tenu par la loi de respecter tout changement apporté à la réglementation durant la période du contrat. Lors de l'exécution du contrat, si l'imposition de sanctions contre un pays ou une personne ou l'ajout d'un bien ou service à la liste des biens et services assujettis aux sanctions empêche l'entrepreneur de satisfaire la totalité ou une partie de ses obligations, l'entrepreneur peut demander que le contrat soit résilié conformément à la CG7.3
- RÉSILIATION DU CONTRAT.

CONDITIONS GÉNÉRALES (CG) 2 - ADMINISTRATION DU CONTRAT

- CG2.1 POUVOIRS DU REPRÉSENTANT DU MINISTÈRE
- CG2.2 INTERPRÉTATION DU CONTRAT
- CG2.3 AVIS
- CG2.4 RÉUNIONS DE CHANTIER
- CG2.5 EXAMEN ET INSPECTION DES TRAVAUX
- CG2.6 SURINTENDANT
- CG2.7 NON-DISCRIMINATION DANS L'EMBAUCHE ET L'EMPLOI DE LA MAIN-D'OEUVRE
- CG2.8 COMPTES ET VÉRIFICATIONS

CG2.1 POUVOIRS DU REPRÉSENTANT DU MINISTÈRE

- 1) Le Canada doit désigner un représentant du ministère et doit aviser l'entrepreneur du nom, de l'adresse et du numéro de téléphone du représentant du ministère.
- 2) Le représentant du ministère exerce les devoirs et fonctions du Canada en vertu du contrat.
- 3) Le représentant du ministère est autorisé à adresser des instructions et directives à l'entrepreneur et à accepter au nom du Canada tout avis, ordre ou autre communication de l'entrepreneur relativement aux travaux.
- 4) Le représentant du ministère doit, dans un délai raisonnable, examiner et donner suite aux documents déposés par l'entrepreneur conformément aux exigences du contrat.

CG2.2 INTERPRÉTATION DU CONTRAT

- 1) Dans l'éventualité où, avant l'émission du certificat d'achèvement, surgit toute question concernant le respect du contrat ou les mesures que l'entrepreneur doit adopter en vertu du contrat, et en particulier, sans limiter la portée générale de ce qui précède, concernant:
 - a) la signification de quoi que ce soit dans les dessins et devis;
 - b) l'interprétation des dessins et devis en cas d'erreur, omission, ambiguïté ou divergence dans leur texte ou intention;
 - c) le respect des exigences du contrat quant à la quantité ou la qualité des matériaux ou du travail que l'entrepreneur fournit ou se propose de fournir;
 - d) la suffisance de la main-d'œuvre, de l'outillage ou des matériaux que l'entrepreneur fournit pour la réalisation des travaux et du contrat, afin d'assurer l'exécution des travaux suivant le contrat et pour l'exécution du contrat conformément à ses dispositions;
 - e) la quantité de tout genre de travaux exécutés par l'entrepreneur; ou
 - f) l'échéancier et la programmation des diverses phases de l'exécution des travaux, tel que spécifié au contrat;

Cette question est tranchée par le Canada, sous réserve des dispositions de la CG8, « Règlement des différends ».

- 2) L'entrepreneur doit exécuter les travaux conformément aux décisions adoptées par le Canada en vertu de l'alinéa 1) de la CG2.2 et conformément à toute directive du Canada qui en découle.
- 3) Si l'entrepreneur ne respecte pas les instructions ou les directives données par le Canada conformément au contrat, le Canada peut recourir aux méthodes qu'il juge pertinentes pour exécuter ce que l'entrepreneur a omis d'exécuter, et l'entrepreneur, sur demande, verse au Canada une somme égale à l'ensemble des coûts, frais et dommages encourus ou subis par le Canada en raison du défaut de l'entrepreneur de respecter ces instructions ou directives, y compris les frais découlant des méthodes employées par le Canada pour corriger les omissions de l'entrepreneur.

CG2.3 AVIS

- 1) Sous réserve de l'alinéa 3) de la CG2.3, tout avis, ordre ou autre communication peut être donné de quelque manière que ce soit et, s'il doit l'être par écrit, être adressé au destinataire, à l'adresse indiquée dans le contrat ou à la dernière adresse en provenance de laquelle l'expéditeur a reçu un avis écrit en application de cet alinéa.
- 2) Tout avis, ordre ou autre communication donné conformément à l'alinéa 1) de la CG2.3 est réputé avoir été reçu par l'une ou l'autre des parties:
 - a) le jour où il a été livré, s'il lui a été livré personnellement;
 - b) le jour de sa réception ou le sixième jour après son envoi par la poste, selon la première de ces deux dates, s'il lui a été envoyé par la poste;
 - c) dans les 24 heures suivant sa transmission, s'il lui a été envoyé par télécopieur ou courrier électronique.
- 3) Un avis donné en vertu de la CG7.1, « Reprise des travaux confiés à l'entrepreneur », de la CG7.2, « Suspension des travaux », et de la CG7.3, « Résiliation du contrat » doit être par écrit et, s'il est livré en mains propres, doit être remis à l'entrepreneur, s'il est constitué en société individuelle opérant sous une raison sociale, ou à un dirigeant de l'entrepreneur, s'il est constitué en société de personnes ou en société par actions.

CG2.4 RÉUNIONS DE CHANTIER

- 1) De concert avec le Canada, l'entrepreneur doit organiser des réunions de chantier à intervalles réguliers, avec toutes les parties impliquées, qui doivent y participer afin d'assurer, entre autres, la bonne coordination des travaux.

CG2.5 EXAMEN ET INSPECTION DES TRAVAUX

- 1) Le Canada doit examiner les travaux pour déterminer s'ils se déroulent conformément au contrat et pour enregistrer les données nécessaires afin de calculer la valeur des travaux exécutés. Le Canada doit mesurer et enregistrer les quantités de main-d'œuvre, d'outillage et de matériaux, utilisés ou fournis par l'entrepreneur dans l'exécution des travaux ou dans toute partie des travaux assujettis à une entente à prix unitaire, et doit faire connaître sur demande à l'entrepreneur le résultat de ces calculs, en plus de permettre à l'entrepreneur d'inspecter tous les registres s'y rapportant.

- 2) Le Canada doit rejeter les travaux ou les matériaux qui, à son avis, ne respectent pas les exigences du contrat et doit exiger l'inspection ou la mise à l'essai des travaux, que ces travaux soit fabriqués, installés ou complétés ou non. Si ces travaux ne sont pas conformes à ces exigences, l'entrepreneur doit les corriger et verser au Canada, sur demande, l'ensemble des frais et des dépenses raisonnables encourus par le Canada pour faire effectuer cet examen.
- 3) L'entrepreneur doit permettre au Canada d'avoir accès aux travaux et à leur emplacement en tout temps et doit toujours prévoir des installations suffisantes, sécuritaires et adéquates pour permettre à des personnes autorisées par le Canada et aux représentants des administrations compétentes d'examiner et d'inspecter les travaux. Si des parties des travaux sont en préparation dans des établissements situées ailleurs qu'à l'emplacement des travaux, le Canada doit avoir accès aux dits travaux pendant tout leur déroulement.
- 4) L'entrepreneur doit fournir au Canada les renseignements relatifs à l'exécution du contrat que le Canada peut exiger, et doit apporter toute l'aide possible en vue de permettre au Canada de s'assurer que les travaux sont exécutés conformément au contrat, d'accomplir tous ses autres devoirs et d'exercer tous les pouvoirs conformément au contrat.
- 5) Si, en vertu du contrat ou des directives du Canada ou en vertu des lois ou ordonnances en vigueur à l'emplacement des travaux, des travaux sont désignés aux fins de l'exécution d'essais, inspections ou pour fin d'approbations, l'entrepreneur doit, dans un délai raisonnable aviser le Canada de la date à laquelle les travaux seront prêts à être examinés et inspectés. Il appartient à l'entrepreneur d'organiser les inspections, les essais ou les approbations et d'envoyer au Canada un préavis raisonnable de l'heure et la date auxquels ils auront lieu.
- 6) Si des travaux désignés pour des essais, inspections ou approbations sont recouverts par l'entrepreneur ou que ce dernier permet qu'ils soient ainsi recouverts avant que lesdits essais, inspections ou approbations soient réalisées, il doit, à la demande du Canada, découvrir ces travaux et veiller à ce que les inspections, essais ou approbations soient exécutés ou donnés intégralement et d'une manière satisfaisante et recouvrir ou faire recouvrir à nouveau les travaux à ses frais.

CG2.6 SURINTENDANT

- 1) Avant le début des travaux, l'entrepreneur désigne un surintendant et transmet au Canada, le nom, l'adresse et le numéro de téléphone de ce surintendant. L'entrepreneur assigne le surintendant à l'emplacement des travaux pendant les heures de travail jusqu'à l'achèvement des travaux.
- 2) Le surintendant est entièrement responsable des opérations de l'entrepreneur pendant l'exécution des travaux et est autorisé à accepter, au nom de l'entrepreneur, les avis, ordres ou autres communications données au surintendant ou à l'entrepreneur relativement aux travaux.
- 3) À la demande du Canada, l'entrepreneur doit destituer un surintendant qui, de l'avis du Canada, est incompetent ou s'est conduit de manière malveillante et désigne aussitôt un autre surintendant à la satisfaction du Canada.
- 4) L'entrepreneur ne doit pas remplacer un surintendant sans le consentement écrit du Canada. Si un surintendant est remplacé sans ce consentement, le Canada peut refuser de délivrer les documents ou les certificats se rapportant aux paiements progressifs, à l'achèvement substantiel ou à l'achèvement des travaux jusqu'à ce que le surintendant ait

été réintégré dans ses fonctions ou qu'un autre surintendant acceptable au Canada l'ait remplacé.

CG2.7 NON-DISCRIMINATION DANS L'EMBAUCHE ET L'EMPLOI DE LA MAIN-D'ŒUVRE

- 1) Pour l'application de la présente clause, on entend par « personnes » l'entrepreneur, ses sous-traitants et les fournisseurs à tous les niveaux, ainsi que leurs employés, mandataires, représentants autorisés ou invités et toutes les autres personnes intervenant dans l'exécution des travaux ou ayant accès au chantier. Ce terme désigne également les personnes morales comme les sociétés de personnes, les entreprises, les cabinets, les coentreprises, les consortiums et les sociétés par actions.
- 2) Sans restreindre les dispositions de l'alinéa 3) de la CG2.6, « Surintendant », l'entrepreneur ne doit refuser d'employer une personne ou d'exercer de quelque façon que ce soit des distinctions injustes à l'endroit d'une personne en raison:
 - a) de la race, de l'origine nationale ou ethnique, de la couleur, de la religion, de l'âge, du sexe, de l'orientation sexuelle, de l'état matrimonial, de la situation de famille, de l'état de personne graciée ou d'une déficience de la personne;
 - b) de la race, de l'origine nationale ou ethnique, de la couleur, de la religion, de l'âge, du sexe, de l'orientation sexuelle, de l'état matrimonial, de la situation de famille, de l'état de personne graciée ou d'une déficience de toute personne ayant un lien avec elle;
 - c) du fait que cette personne a porté plainte ou a fourni des renseignements ou parce qu'une plainte a été portée ou des renseignements ont été fournis en son nom relativement à toute prétendue omission de la part de l'entrepreneur de se conformer aux sous-alinéas a) ou b).
- 3) L'entrepreneur doit s'assurer que dans les 2 jours ouvrables suivant le dépôt d'une plainte écrite alléguant qu'on a contrevenu à l'alinéa 2) de la CG2.7, il:
 - a) fait parvenir une directive écrite aux personnes désignées par le plaignant pour leur demander de mettre fin à toutes les activités justifiant la plainte;
 - b) transmet au Canada, par courrier recommandé ou par messenger, un exemplaire de la plainte;
 - c) lorsque les Conditions de travail s'appliquent selon les circonstances de la plainte, transmet un exemplaire de la plainte au Programme du travail de RHDCC, à l'attention du directeur compétent, selon les modalités exposées dans les Conditions de travail. (On entend par « Programme du travail de RHDCC » la division du travail du ministère fédéral des Ressources humaines et du Développement social.)
- 4) Dans les 24 heures suivant la réception d'une directive du Canada à cette fin, l'entrepreneur retire de l'emplacement et de l'exécution des travaux en vertu du contrat, toutes personnes qui, selon le Canada, contreviennent aux dispositions de l'alinéa 2) de la CG2.7.
- 5) Au plus tard 30 jours suivant la réception de la directive visée à l'alinéa 4) de la CG2.7, l'entrepreneur doit commencer à prendre les mesures nécessaires pour corriger l'infraction décrite dans cette directive.

- 6) Si une directive est émise conformément à l'alinéa 4) de la CG2.7, le Canada peut, selon le cas, retenir, à même les fonds à verser à l'entrepreneur, une somme représentant le total des coûts et du paiement visés à l'alinéa 8) de la CG2.7, ou exercer compensation conformément à la CG5.9, « Droit de compensation », à concurrence de ladite somme.
- 7) Si l'entrepreneur refuse de se conformer aux dispositions de l'alinéa 5) de la CG2.7, le Canada doit prendre les mesures nécessaires pour faire corriger l'infraction et calcule tous les frais supplémentaires engagés à ce titre par le Canada.
- 8) Le Canada peut dédommager directement le plaignant à même les sommes à verser à l'entrepreneur après avoir reçu, de la part du plaignant:
 - a) une sentence arbitrale rendue conformément à la [Loi sur l'arbitrage commercial](#) L.R., 1985, ch. 17 (2esupplément);
 - b) une décision écrite rendue en application de la [Loi canadienne sur les droits de la personne](#), L.R. 1985, ch. H-6;
 - c) une décision écrite rendue en application des lois provinciales ou territoriales sur les droits de la personne; ou
 - d) un jugement prononcé par un tribunal compétent.
- 9) Si le Canada est d'avis que l'entrepreneur a contrevenu à l'une quelconque des dispositions de cette clause, le Canada peut retirer les travaux confiés à l'entrepreneur, conformément à la CG7.1, « Travaux retirés à l'entrepreneur ».
- 10) Sous réserve de l'alinéa 7) de la CG3.6, « Sous-traitance », l'entrepreneur doit s'assurer que les dispositions de cette clause sont reproduites dans toutes les conventions et dans tous les contrats conclus dans le cadre des travaux.

CG2.8 COMPTES ET VÉRIFICATIONS

- 1) L'entrepreneur, en plus de répondre aux exigences stipulées à l'alinéa 6) de la CG3.4, « Exécution des travaux », tient des registres complets pour les coûts estimatifs et réels des travaux, ainsi que tous appels d'offres, offres de prix, contrats, correspondances, factures, reçus et pièces justificatives s'y rapportant, et doit mettre ceux-ci à la disposition du Canada et du sous-receveur général du Canada ou des personnes appelées à intervenir en leur nom, sur demande pour fin de vérifications et inspections.
- 2) L'entrepreneur doit permettre à toutes les personnes visées à l'alinéa 1) de la CG2.8 de tirer des copies et de prélever des extraits des registres et des documents, et doit fournir à ces personnes ou entités l'information dont elles pourraient avoir besoin périodiquement eu égard à ces registres et documents.
- 3) L'entrepreneur doit s'assurer que les registres restent intacts jusqu'à l'expiration d'un délai de deux ans suivant la date à laquelle le certificat d'achèvement a été délivré ou jusqu'à l'expiration de tout autre délai que le Canada peut fixer.
- 4) L'entrepreneur doit obliger tous les sous-traitants à tous les niveaux et toutes les autres personnes contrôlées directement ou indirectement par lui ou qui lui sont affiliées, de même que toutes les personnes le contrôlant directement ou indirectement, à respecter les exigences de cette clause au même titre que lui.

CONDITIONS GÉNÉRALES (CG) 3 - EXÉCUTION ET CONTRÔLE DES TRAVAUX

- CG3.1 CALENDRIER D'AVANCEMENT
- CG3.2 ERREURS ET OMISSIONS
- CG3.3 SÉCURITÉ SUR LE CHANTIER
- CG3.4 EXÉCUTION DES TRAVAUX
- CG3.5 MATÉRIAUX
- CG3.6 SOUS-TRAITANCE
- CG3.7 CONSTRUCTION PAR D'AUTRES ENTREPRENEURS OU TRAVAILLEURS
- CG3.8 MAIN-D'ŒUVRE
- CG3.9 TAUX DE TRANSPORT PAR CAMION (ANNULÉE)
- CG3.10 MATÉRIAUX, OUTILLAGE ET BIENS IMMOBILIERS DEVENUS LA PROPRIÉTÉ DU CANADA
- CG3.11 TRAVAUX DÉFECTUEUX
- CG3.12 DÉBLAIEMENT DU CHANTIER
- CG3.13 GARANTIE ET RECTIFICATION DES DÉFECTUOSITÉS DES TRAVAUX

CG3.1 CALENDRIER D'AVANCEMENT

- 1) L'entrepreneur doit:
 - a) préparer et présenter au Canada, avant de déposer sa première réclamation progressive, un calendrier d'avancement conformément aux exigences du contrat;
 - b) surveiller le déroulement des travaux par rapport à ce calendrier et le mettre à jour conformément aux modalités stipulées dans les documents contractuels;
 - c) aviser le Canada de toutes les révisions à apporter au calendrier en raison d'une prolongation du délai d'exécution du contrat approuvée par le Canada; et

préparer et présenter au Canada, à la date de délivrance du certificat d'achèvement substantiel, la mise à jour de tout calendrier indiquant clairement à la satisfaction du Canada, un échéancier détaillé des travaux inachevés et des travaux requis pour corriger toutes les déficiences énumérées.

CG3.2 ERREURS ET OMISSIONS

- 1) L'entrepreneur doit signaler au Canada avec diligence toutes erreurs, divergences ou omissions qu'il peut constater en examinant les documents contractuels. En exécutant cet examen, l'entrepreneur n'assume aucune responsabilité envers le Canada, résultant de l'exactitude de l'examen. L'entrepreneur n'assume aucune responsabilité pour les dommages ou les coûts résultant des erreurs, divergences ou omissions qu'il n'a pas relevés dans les documents contractuels préparés par le Canada ou en son nom.

CG3.3 SÉCURITÉ SUR LE CHANTIER

- 1) Sous réserve de la CG3.7, « Construction par d'autres entrepreneurs ou travailleurs », l'entrepreneur est seul responsable de la sécurité en construction à l'emplacement du travail. Il doit adopter, appliquer et surveiller toutes les mesures de précaution et tous les programmes de santé et sécurité relativement à l'exécution des travaux. Dans les cas d'urgence, l'entrepreneur doit soit interrompre les travaux, apporter des modifications ou

ordonner l'exécution de travaux supplémentaires pour assurer la sécurité des personnes et la protection des travaux, ainsi que de la propriété avoisinante.

- 2) Avant le début des travaux, l'entrepreneur avise les autorités compétentes en matière de santé et sécurité à l'emplacement des travaux de la date prévue pour le début des travaux et leur fournit tous les renseignements supplémentaires qu'elles pourraient exiger.

CG3.4 EXECUTION DES TRAVAUX

- 1) L'entrepreneur doit exécuter, utiliser ou fournir et payer l'ensemble de la main-d'œuvre, de l'outillage, des matériaux, des outils, des machineries et équipements de construction, de l'eau, du chauffage, de l'éclairage, de l'énergie, du transport et des autres installations et services nécessaires à l'exécution des travaux conformément au contrat.
- 2) L'entrepreneur exécute en tout temps les travaux avec compétence, diligence et célérité, conformément aux normes de l'industrie de la construction et au calendrier d'avancement préparé conformément à la CG3.1, « Calendrier d'avancement » il fait en outre appel à des effectifs suffisants pour s'acquitter de ses obligations conformément à ce calendrier.
- 3) Sous réserve de l'alinéa 4) de la CG3.4, l'entrepreneur assure la surveillance, la garde et le contrôle des travaux et dirige et supervise les travaux de manière à respecter le contrat. L'entrepreneur est responsable des moyens, méthodes, techniques, séquences et procédures de construction et de la coordination des différentes parties des travaux.
- 4) Lorsque requis par écrit par le Canada, l'entrepreneur apporte les modifications appropriées aux méthodes, à l'outillage ou à la main-d'œuvre, chaque fois que le Canada juge que les activités de l'entrepreneur sont dangereuses ou que celles-ci ont un effet détériorant aux travaux ou aux installations existantes ou à l'environnement ou portent atteinte à la sécurité des personnes à l'emplacement des travaux.
- 5) L'entrepreneur est seul responsable de la conception, du montage, de l'opération, de l'entretien et de l'enlèvement des structures temporaires et des autres installations provisoires, ainsi que des méthodes de construction utilisées aux fins de les ériger, les opérer, les entretenir et les enlever. L'entrepreneur doit mobiliser et payer des ingénieurs professionnels compétents dans les disciplines visées pour assurer ces fonctions si la loi ou le contrat l'exige et dans tous les cas où, en raison de la nature de ces installations temporaires et de leurs méthodes de construction, il faut faire appel aux compétences d'ingénieurs professionnels afin de produire des résultats sécuritaires et satisfaisants.
- 6) L'entrepreneur doit conserver au moins un exemplaire des documents contractuels courants, des documents soumis, des rapports et comptes rendus de réunion de chantier, en bon état et rendre ceux-ci accessibles au Canada.
- 7) À l'exception des parties des travaux qui sont nécessairement exécutées hors de l'emplacement des travaux, l'entrepreneur doit confiner l'outillage, l'entreposage des matériaux et les opérations des employés aux limites prescrites par les lois, ordonnances, permis ou documents contractuels.

CG3.5 MATÉRIAUX

- 1) Sauf indication contraire dans le contrat, tous les matériaux intégrés dans les travaux doivent être neufs.
- 2) Sous réserve de l'alinéa 3) de la CG3.5, si un matériau spécifié comme étant réutilisé, remis en état ou recyclé n'est pas disponible, l'entrepreneur adresse au Canada une demande d'autorisation de le remplacer par un matériau comparable à celui spécifié.
- 3) Si de l'avis du Canada la demande de substitution d'un matériau réutilisé, remis en état ou recyclé est justifiée et que le matériau de remplacement est de qualité et de valeur satisfaisantes par rapport à celui qui est spécifié et est adéquat pour l'usage visé, le Canada peut approuver la substitution, sous réserve des conditions suivantes:
 - a) la demande de substitution doit être adressée par écrit au Canada et être appuyée par des renseignements présentés sous la forme de documentation du fabricant, d'échantillons et autres données qui peuvent être exigées par le Canada;
 - b) la demande de substitution de l'entrepreneur ne devra pas nuire au calendrier d'avancement du contrat et devra être présentée dans un délai suffisamment éloigné de la date à laquelle il faut commander les matériaux;
 - c) la substitution des matériaux n'est autorisée qu'avec l'approbation écrite préalable du Canada, et tous les matériaux substitués fournis ou installés sans cette approbation doivent être enlevés du chantier aux frais de l'entrepreneur, et les matériaux spécifiés doivent être installés sans frais additionnels pour le Canada;
 - d) l'entrepreneur est responsable de tous les coûts additionnels encourus par le Canada, par lui-même et par ses sous-traitants et fournisseurs à tous les niveaux en résultat de l'utilisation de matériaux substitués.

CG3.6 SOUS-TRAITANCE

- 1) Sous réserve de la présente clause, l'entrepreneur peut sous-traiter une partie quelconque des travaux, mais non l'ensemble de ceux-ci.
- 2) L'entrepreneur doit aviser le Canada par écrit de son intention de sous-traiter des travaux.
- 3) L'avis dont il est question à l'alinéa 2) de la CG3.6 doit préciser la partie des travaux que l'entrepreneur a l'intention de sous-traiter et l'identité du sous-traitant qu'il a l'intention de retenir.
- 4) Le Canada peut s'opposer, pour des motifs raisonnables, à la sous-traitance proposée, en avisant par écrit l'entrepreneur dans un délai de six jours suivant la réception par le Canada de l'avis indiqué à l'alinéa 2) de la CG3.6.
- 5) Si le Canada s'oppose à une sous-traitance, l'entrepreneur ne procède pas à la sous-traitance envisagée.
- 6) L'entrepreneur ne peut, sans le consentement écrit du Canada, remplacer ni permettre que soit remplacé un sous-traitant qu'il aura retenu conformément à la présente clause.

- 7) L'entrepreneur s'assure que toutes les modalités d'application générale du contrat sont incorporées dans tous les autres contrats conclus dans le cadre de ce contrat, à tous les niveaux, à l'exception des contrats attribués uniquement pour la fourniture d'outillage ou de matériaux.
- 8) Nul contrat entre le l'entrepreneur et un sous-traitant ou nul consentement du Canada à tel contrat ne sera interprété comme relevant l'entrepreneur de quelque obligation en vertu du contrat ou comme imposant quelque responsabilité au Canada.

CG3.7 CONSTRUCTION PAR D'AUTRES ENTREPRENEURS OU TRAVAILLEURS

- 1) Le Canada se réserve le droit d'affecter, à l'emplacement des travaux, d'autres entrepreneurs ou travailleurs, avec ou sans outillage et matériaux.
- 2) Lorsque d'autres entrepreneurs ou travailleurs sont affectés à l'emplacement des travaux, le Canada doit:
 - a) conclure des contrats distincts, dans toute la mesure du possible, avec les autres entrepreneurs, selon des conditions contractuelles compatibles avec les conditions du contrat;
 - b) s'assurer que les assurances souscrites par les autres entrepreneurs s'harmonisent avec les assurances souscrites par l'entrepreneur en prenant compte leur incidence sur les travaux;
 - c) prendre toutes les précautions raisonnables pour éviter les conflits de travail ou les autres différends découlant des travaux des autres entrepreneurs ou travailleurs.
- 3) Lorsque d'autres entrepreneurs ou travailleurs sont affectés à l'emplacement des travaux, l'entrepreneur doit:
 - a) collaborer avec eux pour l'accomplissement de leurs tâches et dans l'exercice de leurs obligations;
 - b) coordonner et programmer les travaux en fonction des travaux des autres entrepreneurs et travailleurs;
 - c) participer, sur demande, avec les autres entrepreneurs et travailleurs, à l'examen de leur calendrier d'exécution;
 - d) dans les cas où une partie des travaux est affectée par les travaux d'autres entrepreneurs ou travailleurs, ou dépend de leurs travaux pour sa bonne exécution et, avant d'exécuter cette partie des travaux, aviser rapidement et par écrit le Canada, de l'existence de toutes déficiences apparentes qui y sont relevées. Le défaut de l'entrepreneur de s'acquitter de cette obligation, aura pour effet d'invalider toutes les réclamations présentées contre le Canada en raison des déficiences des travaux des autres entrepreneurs ou travailleurs, sauf les déficiences qui ne peuvent être raisonnablement décelées;
 - e) lorsqu'en vertu des lois provinciales ou territoriales applicables, l'entrepreneur est reconnu comme étant responsable de la sécurité en construction à

l'emplacement du travail , il doit assumer, conformément aux dites lois, les devoirs découlant de ce rôle.

- 4) Si, lors de la conclusion du contrat, l'entrepreneur ne pouvait raisonnablement prévoir que d'autres entrepreneurs ou travailleurs seraient affectés à l'emplacement des travaux et à la condition que l'entrepreneur:
 - a) engage des frais supplémentaires pour respecter les exigences de l'alinéa 3) de la CG3.7;
 - b) donne au Canada, par écrit, un avis de réclamation pour ces frais supplémentaires dans les 30 jours de la date à laquelle les autres entrepreneurs ou travailleurs ont été affectés à l'emplacement des travaux;

le Canada doit verser à l'entrepreneur les frais de main-d'œuvre, d'outillage et de matériaux supplémentaires, qui ont été rendus nécessaires et effectivement encourus, calculés conformément à la CG6.4, « Calcul du prix ».

CG3.8 MAIN-D'ŒUVRE

- 1) Compte tenu des impératifs d'économie et de la nécessité d'exécuter avec diligence les travaux, l'entrepreneur emploie un nombre raisonnable de personnes ayant été en service actif dans les Forces armées canadiennes et qui en ont reçu une libération honorable dans la mesure où elles sont disponibles.
- 2) L'entrepreneur assure le bon ordre et la discipline parmi ses employés et les travailleurs affectés aux travaux et ne doit pas retenir les services de personnes qui ne sont pas compétentes pour les tâches à accomplir.

CG3.9 TAUX DE TRANSPORT PAR CAMION

ANNULÉE.

CG3.10 MATÉRIAUX, OUTILLAGE ET BIENS IMMOBILIERS DEVENUS LA PROPRIÉTÉ DU CANADA

- 1) Sous réserve de l'alinéa 9) de la CG1.8, « Lois, permis et taxes#160;», tous les matériaux et l'outillage ainsi que tout droit de l'entrepreneur sur tous les biens immobiliers, permis, pouvoirs et privilèges achetés, utilisés ou consommés par l'entrepreneur pour les travaux, appartiennent au Canada aux fins des travaux, dès leur acquisition, utilisation ou affectation et continue d'appartenir au Canada:
 - a) dans le cas des matériaux, jusqu'à ce que le Canada déclare qu'ils ne sont plus requis pour les travaux; et
 - b) dans le cas de l'outillage, des biens immobiliers, des permis, des pouvoirs et des privilèges, jusqu'à ce que le Canada déclare que le droit dévolu au Canada en l'espèce n'est plus requis pour les travaux.
- 2) Les matériaux ou l'outillage appartenant au Canada en vertu de l'alinéa 1) de la CG3.10 ne doivent pas, sans le consentement écrit du Canada, être enlevés de

l'emplacement des travaux, ni être utilisés ou aliénés, sauf pour l'exécution des travaux..

- 3) Le Canada n'est pas responsable des pertes ou des dommages relatifs aux matériaux ou à l'outillage visés dans l'alinéa 1) de la CG3.10, quelle qu'en soit la cause; l'entrepreneur est responsable de toute perte ou tout dommage, que les matériaux ou outillage appartiennent au Canada.

CG3.11 TRAVAUX DÉFECTUEUX

- 1) L'entrepreneur enlève promptement de l'emplacement des travaux et remplace ou reprend l'exécution des travaux défectueux, que ces travaux aient été ou non intégrés dans les travaux et que les déficiences soient attribuables ou non à un vice d'exécution, à l'utilisation de matériaux défectueux ou à des dommages causés par un autre acte, une omission ou la négligence de l'entrepreneur.
- 2) L'entrepreneur répare promptement à ses frais les autres travaux détruits ou endommagés par l'enlèvement ou la réfection des travaux défectueux.
- 3) Lorsque, de l'avis du Canada, il n'est pas pratique de corriger des travaux défectueux ou des travaux non exécutés selon les modalités prévues dans les documents contractuels, le Canada peut déduire, de la somme à verser normalement à l'entrepreneur, une somme équivalente à la différence entre la valeur des travaux exécutés et les travaux prévus dans les documents contractuels.
- 4) L'omission du Canada de rejeter des travaux ou des matériaux défectueux ne constitue pas pour autant une acceptation de ces travaux ou matériaux.

CG3.12 DÉBLAIEMENT DU CHANTIER

- 1) L'entrepreneur veille à ce que les travaux et leur emplacement restent en parfait état de propreté et évite d'y accumuler des rebuts et des débris.
- 2) Avant la délivrance du certificat d'achèvement substantiel, l'entrepreneur enlève les rebuts et les débris, de même que tout l'outillage et les matériaux non requis à l'exécution du reste des travaux et, sauf indication contraire dans les documents contractuels, fait en sorte que les travaux et leur emplacement soient propres et convenables pour l'occupation du Canada.
- 3) Avant la délivrance du certificat d'achèvement, l'entrepreneur doit retirer de l'emplacement de travaux, tout l'outillage et les matériaux excédentaires de même que tous les rebuts et débris.
- 4) Les obligations imposées à l'entrepreneur dans les alinéas 1) à 3) de la CG3.12 ne s'appliquent pas aux rebuts et aux autres débris laissés par les employés du Canada ou par les autres entrepreneurs et travailleurs visés dans la CG3.7, « Construction par d'autres entrepreneurs ou travailleurs ».

CG3.13 GARANTIE ET RECTIFICATION DES DÉFECTUOSITÉS DES TRAVAUX

- 1) Sans restreindre la portée des garanties implicites ou explicites prévues par la loi ou le contrat, l'entrepreneur, à ses frais:

- a) rectifie et corrige toute défectuosité ou tout vice qui se manifeste dans les travaux ou qui est signalé au Canada quant aux parties des travaux acceptées aux termes du certificat d'achèvement substantiel dans le délai de 12 mois suivant la date de l'achèvement substantiel des travaux;
 - b) rectifie et répare toute défectuosité ou tout vice qui se manifeste dans les travaux ou qui est signalé au Canada quant aux parties des travaux décrites dans le certificat d'achèvement substantiel dans le délai de 12 mois suivant la date du certificat d'achèvement;
 - c) transfère et cède au Canada, toute garantie prolongée d'un sous-traitant, fabricant ou fournisseur, ou les garanties implicites ou imposées par la loi ou reproduites dans le contrat et portant sur des durées supérieures au délai de 12mois précisé ci-dessus. Les garanties prolongées ou les garanties visées dans les présentes ne doivent pas dépasser ce délai de 12mois; en vertu de ces garanties, l'entrepreneur, sauf dans les cas prévus ailleurs dans le contrat, rectifie et corrige toute défectuosité ou tout vice qui se manifeste dans les travaux ou qui est signalé au Canada;
 - d) remet au Canada, avant la délivrance du certificat d'achèvement, la liste de toutes les garanties prolongées et des garanties visées à l'alinéa c) ci-dessus.
- 2) Le Canada peut ordonner à l'entrepreneur de rectifier et réparer toute défectuosité ou tout vice prévu à l'alinéa 1) de la CG3.13 ou couvert par tout autre garantie implicite ou explicite; l'entrepreneur rectifie et répare toute défectuosité ou vice dans le délai précisé dans cet ordre.
 - 3) L'ordre mentionné à l'alinéa 2) de la CG3.13 doit être par écrit et doit signifié à l'entrepreneur conformément à la CG2.3, « Avis ».

Conditions générales (CG) 4 - Mesures de protection

- CG4.1 Protection des travaux et des biens
- CG4.2 Précautions contre les dommages, les contrefaçons, les incendies et les autres risques
- CG4.3 Matériaux, outillage et biens immobiliers fournis par le Canada
- CG4.4 État de site contaminé

CG4.1 PROTECTION DES TRAVAUX ET DES BIENS

- 1) L'entrepreneur protège les travaux et le chantier contre toute perte ou tout dommage de quelque nature que ce soit et protège de même les matériaux, l'outillage et les biens immobiliers qui lui sont confiés et qui sont placés sous sa garde et son contrôle, qu'ils soient fournis ou non par le Canada à l'entrepreneur.
- 2) L'entrepreneur fournit toutes les installations nécessaires au maintien de la sécurité et aide toute personne autorisée par le Canada à inspecter les travaux et leur emplacement ou à prendre les mesures de sécurité qui s'imposent.
- 3) Le Canada peut ordonner à l'entrepreneur de prendre telles mesures et d'exécuter tels travaux qui de l'avis du Canada sont raisonnables et nécessaires afin d'assurer l'observation des alinéas 1) ou 2) de la CG4.1 ou afin de rectifier un manquement à ces dispositions; l'entrepreneur doit se conformer à cet ordre.

CG4.2 PRÉCAUTIONS CONTRE LES DOMMAGES, LES CONTREFAÇONS, LES INCENDIES ET LES AUTRES RISQUES

- 1) L'entrepreneur prend toutes les mesures nécessaires pour s'assurer :
 - a) que nulle personne n'est blessée, nul bien endommagé et nul droit, servitude ou privilège enfreint en raison de l'activité de l'entrepreneur dans le cadre de l'exécution des travaux;
 - b) que la circulation piétonnière et autre sur tout chemin ou cours d'eau publics ou privés ne soit indûment entravée, interrompue ou rendue dangereuse par l'exécution ou l'existence des travaux, des matériaux ou de l'outillage;
 - c) que les risques d'incendie sur le chantier ou l'emplacement des travaux soient éliminés et que tout incendie soit rapidement maîtrisé;
 - d) que la santé et la sécurité de toutes les personnes affectées à l'exécution des travaux ne soient pas menacées par les méthodes ou les moyens mis en œuvre;
 - e) que des services médicaux adéquats soient offerts en permanence, pendant l'exécution des travaux, à toutes les personnes affectées à ces travaux ou à leur emplacement ;
 - f) que des mesures sanitaires adéquates soient prises relativement aux travaux et à leur emplacement;
 - g) que l'ensemble des jalons, bouées et repères placés à l'emplacement des travaux par le Canada soient protégés et ne soient pas enlevés, abîmés, modifiés ou détruits.

- 2) Le Canada peut ordonner à l'entrepreneur d'exercer les activités et d'exécuter les travaux que le Canada juge raisonnables et nécessaires pour assurer de respecter l'alinéa 1) de la CG4.2 ou pour remédier à un manquement à cet alinéa; l'entrepreneur doit se conformer à cet ordre.

CG4.3 MATÉRIAUX, OUTILLAGE ET BIENS IMMOBILIERS FOURNIS PAR LE CANADA

- 1) Sous réserve de l'alinéa 2) de la CG4.3, l'entrepreneur est responsable, envers le Canada de toute perte ou dommage aux matériaux, à l'outillage ou aux biens immobiliers que le Canada a fournis ou placés sous la garde et le contrôle de l'entrepreneur aux fins du contrat, que la perte ou le dommage soit attribuable ou non à des causes indépendantes de la volonté de l'entrepreneur.
- 2) L'entrepreneur n'est pas responsable, envers le Canada, de toute perte ou dommage aux matériaux, à l'outillage ou aux biens immobiliers visés à l'alinéa 1) de la CG4.3, si cette perte ou dommage est imputable et directement attribuable à l'usure normale.
- 3) L'entrepreneur n'utilise les matériaux, l'outillage ou les biens immobiliers fournis par le Canada uniquement que pour l'exécution du contrat.
- 4) En cas de défaut de l'entrepreneur de rectifier, dans un délai raisonnable, les pertes ou les dommages dont il est responsable en vertu de l'alinéa 1), le Canada peut les faire rectifier aux frais de ce dernier, et l'entrepreneur assume la responsabilité de ces frais envers le Canada et paye à ce dernier, sur demande, une somme équivalente à ceux-ci.
- 5) L'entrepreneur tient des registres, que le Canada peut de temps à autre exiger, pour l'ensemble des matériaux, de l'outillage et des biens immobiliers fournis par le Canada et, lorsque le Canada l'exige, il établit à la satisfaction de ce dernier que les matériaux, l'outillage et les biens immobiliers sont à l'endroit et dans l'état dans lequel ils devraient être.

CG4.4 ÉTAT DE SITE CONTAMINE

- 1) Pour l'application de la CG4.4, il y a état de site contaminé lorsque des irritants ou contaminants solides, liquides, gazeux, thermiques ou radioactifs, ou d'autres substances ou matériaux dangereux ou toxiques, dont les moisissures et les autres formes de champignons, sont présents sur le chantier dans une quantité ou une concentration assez élevée pour constituer un danger, réel ou potentiel, pour l'environnement, les biens ou la santé et la sécurité de toute personne.
- 2) Si l'entrepreneur constate un état de site contaminé dont il n'avait pas connaissance ou qui ne lui a pas été divulgué ou s'il a des motifs raisonnables de croire à l'existence d'un état de site contaminé sur le chantier, il doit :
 - a) prendre toutes les mesures raisonnables, y compris arrêter les travaux, afin d'éviter que cet état de site contaminé n'entraîne quelque blessure, maladie ou décès, ou dégradation des biens ou de l'environnement;
 - b) aviser immédiatement le Canada de la situation, par écrit;
 - c) prendre toutes les mesures raisonnables pour réduire au minimum les frais supplémentaires que pourrait entraîner tout arrêt des travaux.

- d) Dès la réception de l'avis de l'entrepreneur, le Canada détermine rapidement s'il existe un état de site contaminé et indique par écrit, à l'entrepreneur, les mesures à prendre ou les travaux qu'il doit exécuter en raison de la décision du Canada.
- e) Si le Canada juge nécessaire de retenir les services de l'entrepreneur, ce dernier doit suivre les directives du Canada en ce qui a trait à l'excavation, au traitement, à l'enlèvement et à l'élimination de toute substance ou tous matériaux polluants.
- f) Le Canada peut en tout temps, à sa seule et entière discrétion, retenir les services d'experts et d'entrepreneurs spécialisés pour aider à établir l'existence et l'ampleur de la contamination et le traitement approprié des conditions du site contaminé; l'entrepreneur doit leur permettre l'accès aux lieux et collaborer avec eux à l'accomplissement de leurs tâches et obligations.
- g) Sauf disposition contraire du contrat, les modalités de la CG6.4, « Calcul du prix », doivent s'appliquer à tous les travaux supplémentaires à effectuer à cause d'un état de site contaminé.

CONDITIONS GÉNÉRALES (CG) 5 - MODALITÉS DE PAIEMENT

- CG5.1 Interprétation
- CG5.2 Montant à verser
- CG5.3 Augmentation ou diminution des coûts
- CG5.4 Paiement progressif
- CG5.5 Achèvement substantiel des travaux
- CG5.6 Achèvement définitif
- CG5.7 Paiement non exécutoire pour le Canada
- CG5.8 Réclamations et obligations
- CG5.9 Droit de compensation
- CG5.10 Dédommagement pour retard d'achèvement
- CG5.11 Retard de paiement
- CG5.12 Intérêts sur les réclamations réglées
- CG5.13 Remise du dépôt de garantie

CG5.1 INTERPRÉTATION

Dans les présentes modalités de paiement:

- 1) La « période de paiement » signifie un intervalle de 30 jours consécutifs ou tout autre intervalle plus long convenu entre l'entrepreneur et le Canada.
- 2) Un montant est « dû et payable » lorsqu'il doit être versé à l'entrepreneur par le Canada conformément à la CG5.4, « Paiement progressif », à la CG5.5, « Achèvement substantiel des travaux », ou à la CG5.6, « Achèvement définitif ».
- 3) Un montant est en « souffrance » lorsqu'il demeure impayé le premier jour suivant le jour où il est dû et payable.
- 4) La « date de paiement » signifie la date du titre négociable d'un montant dû et payable par le receveur général du Canada.
- 5) Le « taux d'escompte » signifie le taux d'intérêt fixé par la Banque du Canada, qui représente le taux minimum auquel elle consent des avances à court terme aux membres de l'Association canadienne des paiements.
- 6) Le « taux d'escompte moyen » signifie la moyenne arithmétique simple du taux d'escompte en vigueur chaque jour, à 16h, heure de l'Est, pour le mois de calendrier immédiatement antérieur à la date de paiement.

CG5.2 MONTANT À VERSER

- 1) Sous réserve à toutes autres dispositions du contrat, le Canada verse à l'entrepreneur, aux dates et selon les modalités indiquées ci-après, le montant par lequel l'ensemble des montants dus par le Canada à l'entrepreneur conformément au contrat excède les montants dus par l'entrepreneur au Canada; et l'entrepreneur doit accepter ce montant en règlement de tout ce qu'il a fourni et fait relativement aux travaux auxquels le paiement se rapporte.
- 2) Dans tout paiement fait à l'entrepreneur, l'omission de déduire un montant qui est dû au Canada par l'entrepreneur ne peut constituer une renonciation à son droit de recevoir ce

montant, ni une reconnaissance de l'absence d'un tel droit lors de tout paiement ultérieur à l'entrepreneur.

- 3) Advenant qu'un paiement soit versé en excédent de ce qui est dû à l'entrepreneur pour les travaux exécutés, l'entrepreneur remboursera immédiatement le trop-perçu au Canada, que ce dernier l'exige ou non, et tout montant non réglé portera des intérêts simples au taux d'escompte moyen majoré de 3p. 100 par an à compter du premier jour du trop-perçu jusqu'au jour précédant le remboursement de l'entrepreneur.
- 4) Aucun paiement ne sera fait à l'entrepreneur autre qu'un paiement prévu expressément dans le contrat pour tous frais supplémentaires, pertes ou dommages engagés ou subis par l'entrepreneur.

CG5.3 AUGMENTATION OU DIMINUTION DES COÛTS

- 1) Le montant du contrat doit être ni augmenté ni réduit en raison d'une augmentation ou d'une diminution du coût des travaux résultant d'une augmentation ou d'une diminution du coût de la main-d'œuvre, de l'outillage, des matériaux ou des rajustements salariaux énoncés ou prescrits dans les Conditions de travail.
- 2) Nonobstant l'alinéa 1) de la CG5.3, si des changements, dont l'imposition d'une nouvelle taxe, de nouveaux droits de douane ou d'autres droits ou leur annulation, l'application de frais ou d'autres dispositions comparables imposées en vertu des lois sur la taxe de vente, les douanes et la taxe d'accise du gouvernement du Canada, d'une province ou d'un territoire, ont une incidence sur le coût des travaux de l'entrepreneur et interviennent:
 - a) après que l'entrepreneur ait déposé sa soumission; ou
 - b) après la date de présentation de la dernière révision de la soumission de l'entrepreneur, si elle a été révisée;
 - c) le montant du contrat doit être rajusté selon les modalités prévues à l'alinéa 3) de la CG5.3.
- 3) En cas de changements visés à l'alinéa 2) de la CG5.3, le montant du contrat doit être majoré ou diminué d'une somme déterminée par le Canada, suite à son examen des registres pertinents de l'entrepreneur mentionnés à la CG2.8, « Comptes et vérification », comme étant l'augmentation ou la réduction des coûts engagés par l'entrepreneur et qui est directement attribuable à ces changements.
- 4) Aux fins de l'alinéa 2) de la CG5.3, si une taxe est modifiée après la date de clôture de l'appel d'offres, mais alors que le ministre des Finances ou l'administration provinciale ou territoriale compétente a annoncé publiquement cette modification avant la date de clôture de l'appel d'offres, ladite modification est censée être intervenue avant cette date de clôture.
- 5) Nonobstant les alinéas 2) à 4) de la CG5.3, nul rajustement du montant du contrat en ce qui a trait à la totalité ou à toute partie des travaux ne sera apporté en cas de changement visé dans la présente clause et intervenant après la date prévue au contrat pour l'achèvement de la totalité ou d'une partie des travaux.

CG5.4 PAIEMENT PROGRESSIF

- 1) À l'expiration de la période de paiement, l'entrepreneur doit déposer, auprès du Canada :
 - a) une réclamation progressive écrite sous une forme acceptable au Canada, décrivant intégralement toute partie achevée des travaux et tous les matériaux livrés à l'emplacement des travaux mais non incorporés aux travaux durant la période de paiement faisant l'objet de la réclamation progressive;
 - b) une déclaration statutaire complétée et signée en bonne et due forme attestant qu'à la date de la réclamation progressive, l'entrepreneur s'est acquitté de toutes ses obligations en vertu de la loi en ce qui a trait aux Conditions de travail et qu'à l'égard des travaux, l'entrepreneur s'est acquitté de toutes ses obligations légales envers ses sous-traitants et fournisseurs, désignés collectivement, dans la déclaration comme étant les « sous-traitants et fournisseurs ».
- 2) Dans le délai de 10 jours de la réception de la réclamation progressive et de la déclaration statutaire complétée par l'entrepreneur, le Canada procède ou fait procéder à l'inspection de la partie des travaux et matériaux décrits dans la réclamation progressive et présente à l'entrepreneur un rapport progressif indiquant la valeur de la partie des travaux et des matériaux décrits dans cette réclamation et confirmant que selon l'avis du Canada:
 - a) sont conformes aux dispositions du contrat; et
 - b) ne sont visées par aucun autre rapport progressif se rapportant au contrat.
- 3) Sous réserve de la CG5.2, « Montant à payer », et de l'alinéa 5) de la CG5.4, le Canada verse à l'entrepreneur une somme égale à:
 - a) 95p. 100 de la valeur indiquée dans le rapport progressif du Canada, si l'entrepreneur a fourni un cautionnement pour le paiement de la main-d'œuvre et des matériaux; ou
 - b) 90p. 100 de la valeur indiquée dans le rapport progressif du Canada, si l'entrepreneur n'a pas fourni de cautionnement pour le paiement de la main-d'œuvre et des matériaux.
- 4) Le Canada verse la somme visée à l'alinéa 3) de la CG5.4 au plus tard:
 - a) 30 jours après la réception par le Canada de la réclamation progressive et la déclaration statutaire visées à l'alinéa 1) de la CG5.4; ou
 - b) 15 jours après que le Canada ait reçu le calendrier d'avancement de l'entrepreneur ou son calendrier d'avancement à jour, conformément à la CG3.1, « Calendrier d'avancement »selon l'échéance la plus éloignée.
- 5) Dans le cas de la première réclamation progressive, l'entrepreneur doit déposer tous les documents à l'appui de cette réclamation exigés par le contrat pour la première réclamation progressive; cette exigence est une condition préalable à l'exécution par le Canada de son obligation en vertu de l'alinéa 3 de la CG5.4.

CG5.5 ACHÈVEMENT SUBSTANTIEL DES TRAVAUX

- 1) Si, à quelque moment avant la délivrance du certificat d'achèvement, le Canada constate que les travaux sont substantiellement exécutés selon les modalités énoncées dans le sous-alinéa 1b) de la CG1.1.4, « Achèvement substantiel », le Canada délivre un certificat d'achèvement substantiel à l'intention de l'entrepreneur. Le certificat d'achèvement substantiel:
 - a) indique la date d'achèvement substantiel des travaux;
 - b) décrit les parties des travaux non achevés à la satisfaction du Canada;
 - c) décrit toutes les mesures à prendre par l'entrepreneur avant la délivrance d'un certificat d'achèvement et avant le début de la période de garantie de 12 mois visée dans la CG3.13, « Garantie et rectification des défauts des travaux », en ce qui a trait aux dites parties des travaux et mesures en question.
- 2) La délivrance d'un certificat d'achèvement substantiel ne dégage pas l'entrepreneur de ses obligations en vertu de la CG3.11, « Travaux défectueux ».
- 3) Sous réserve de la CG5.2, « Montant à verser », et de l'alinéa 4) de la CG5.5, le Canada doit verser à l'entrepreneur le montant visé à l'alinéa 1) de la CG5.2, « Montant à verser », moins l'ensemble:
 - a) de tous les paiements effectués conformément à la CG5.4, « Paiement progressif »
 - b) de la somme égale à l'estimation faite par le Canada des coûts encourus par le Canada pour corriger les défauts décrites dans le certificat d'achèvement substantiel;
 - c) de la somme égale à l'estimation faite par le Canada des coûts encourus par le Canada pour achever les parties des travaux décrites dans le certificat d'achèvement substantiel, autres que les défauts qui y sont énumérées.
- 4) Le Canada paie le montant visé à l'alinéa 3) de la CG5.5 au plus tard:
 - a) 30 jours après la date de délivrance d'un certificat d'achèvement substantiel; ou
 - b) 15 jours après la date à laquelle l'entrepreneur transmet au Canada:
 - i. une déclaration statutaire attestant qu'à la date du certificat d'achèvement substantiel, l'entrepreneur s'est acquitté de toutes ses obligations légales aux termes des Conditions de travail, qu'il s'est acquitté de toutes ses obligations légales envers ses sous-traitants et fournisseurs en ce qui a trait aux travaux visés par le contrat et qu'il s'est acquitté de toutes ses obligations légales conformément à la CG1.8, « Lois, permis et taxes »;
 - ii. une pièce justificative confirmant qu'il respecte les lois sur l'indemnisation des travailleurs conformément à la CG1.9, « Indemnisation des travailleurs »; et
 - iii. une mise à jour du calendrier d'avancement conformément aux exigences de la CG3.1, « Calendrier d'avancement »;

selon l'échéance la plus éloignée.

CG5.6 ACHÈVEMENT DÉFINITIF

- 1) Lorsque le Canada est d'avis que l'entrepreneur a respecté le contrat et toutes les instructions et les directives données dans le cadre de ce contrat et que les travaux sont achevés conformément aux modalités de la CG1.1.5, « Achèvement », le Canada délivre un certificat d'achèvement à l'entrepreneur et, si la totalité ou une partie des travaux fait l'objet d'une entente à prix unitaire, le Canada délivre un certificat définitif de mesurage qui, sous réserve de la CG8, « Règlements des différends », est exécutoire entre le Canada et l'entrepreneur en ce qui a trait aux quantités visées dans les présentes.
- 2) Sous réserve de la CG5.2, « Montant à verser », et de l'alinéa 3) de la CG5.6, le Canada verse à l'entrepreneur la somme visée dans la CG5.2, « Montant à verser », moins l'ensemble de la somme de tous les paiements effectués conformément à la CG5.4, « Paiement progressif », et à la CG5.5, « Achèvement substantiel des travaux ».
- 3) Le Canada verse la somme visée à l'alinéa 2) de la CG5.6 dans au plus tard:
 - a) 60 jours suivant la date de délivrance du certificat d'achèvement; ou
 - b) 15 jours suivant la date à laquelle l'entrepreneur transmet au Canada:
 - i. une déclaration statutaire attestant qu'il s'est acquitté de toutes ses obligations légales et qu'il a réglé toutes les réclamations légales formulées contre lui dans le cadre de l'exécution du contrat;
 - ii. une pièce justificative confirmant qu'il respecte les lois sur l'indemnisation des travailleurs, conformément à la CG1.9, « Indemnisation des travailleurs »;

selon l'échéance la plus éloignée.

CG5.7 PAIEMENT NON EXÉCUTOIRE POUR LE CANADA

- 1) Ni l'acceptation d'une réclamation progressive ou d'un rapport progressif, ni les paiements effectués par le Canada en vertu du contrat, ni l'occupation partielle ou totale des travaux par le Canada ne constituent une acceptation de la part du Canada de toute partie des travaux ou matériaux qui n'est pas conforme aux exigences du contrat.

CG5.8 RÉCLAMATIONS ET OBLIGATIONS

- 1) L'entrepreneur doit s'acquitter de toutes ses obligations légales et doit faire droit à toutes les réclamations légales qui lui sont adressées en conséquence de l'exécution des travaux au moins aussi souvent que le contrat oblige le Canada à payer l'entrepreneur.
- 2) L'entrepreneur doit transmettre au Canada, à sa demande, une déclaration statutaire attestant de l'existence et de l'état des obligations et réclamations qui lui sont présentées dans le cadre de l'exécution des travaux.
- 3) Afin de d'acquitter toutes obligations légales de l'entrepreneur ou d'un sous-traitant ou de satisfaire à toutes réclamations légales contre eux résultant de l'exécution du contrat, le

Canada peut payer tout montant dû et exigible par l'entrepreneur en vertu du contrat, directement aux réclamants de l'entrepreneur ou du sous-traitant. Ce paiement comporte quittance de l'obligation du Canada envers l'entrepreneur jusqu'à concurrence du montant ainsi payé et peut être déduit des sommes dues à l'entrepreneur en vertu du contrat.

- 4) Pour l'application de l'alinéa 3) de la CG5.8 et sous réserve de l'alinéa 6) de la CG5.8, les réclamations ou obligations sont réputées légales lorsqu'elles sont reconnues comme tel par:
 - a) un tribunal compétent;
 - b) un arbitre dûment nommé pour adjuger de la réclamation; ou
 - c) le consentement écrit de l'entrepreneur en autorisant le règlement.
- 5) Si, n'eut été que l'entrepreneur a exécuté les travaux pour le Canada, une réclamation ou une obligation avait été assujettie aux dispositions des lois provinciales ou lois des territoires sur les privilèges ou, au Québec, aux dispositions du Code civil du Québec concernant les hypothèques légales:
 - a) le montant qui peut être versé par le Canada au réclamant en vertu des alinéas 3) et 4) de la CG5.8 ne peut excéder le montant que l'entrepreneur aurait été tenu de verser au réclamant si les dispositions de ces lois s'étaient appliquées aux travaux;
 - b) un réclamant n'a pas à se conformer aux dispositions de ces lois en ce qui a trait aux formalités d'avis, d'enregistrement ou autres formalités à accomplir et qui aurait été nécessaire d'accomplir afin de conserver ou valider tout privilège ou hypothèque légale qu'il aurait pu faire valoir;
 - c) pour permettre d'établir les droits d'un réclamant, l'avis exigé en vertu de l'alinéa 8) de la CG5.8 est réputé remplacer les formalités d'enregistrement ou d'avis que les lois pertinentes exigent d'accomplir après la fin des travaux; nulle réclamation n'est réputée expirée, nulle ou inopposable pour le motif que le réclamant a omis de déposer une action en justice dans les délais prescrits par les lois mentionnées ci-haut.
- 6) à la demande de tout réclamant, l'entrepreneur doit soumettre à l'arbitrage obligatoire les questions ayant trait au droit du réclamant au paiement de la réclamation. Les parties à l'arbitrage sont, entre autres, les sous-traitants ou fournisseurs auxquels le réclamant a fourni des matériaux, ou qui ont exécuté des travaux ou loué de l'équipement, s'ils souhaitent participer à l'arbitrage; le Canada n'est pas partie à l'arbitrage. Sous réserve de tout accord conclu entre l'entrepreneur et le réclamant, l'arbitrage se déroule conformément aux lois provinciales ou des territoires régissant l'arbitrage à l'endroit où les travaux ont été exécutés.
- 7) L'alinéa 3) de la CG5.8 ne s'applique qu'aux réclamations et aux obligations:
 - a) dont l'avis fait état du montant réclamé et de l'identité de la personne, en vertu du contrat et qui est transmis au Canada avant que le paiement final soit versé à l'entrepreneur conformément à la CG5.6, « Achèvement définitif », et dans les 120 jours de la date à laquelle le réclamant:
 - i. aurait dû être payé en totalité conformément au contrat qui le lie à l'entrepreneur et à son sous-traitant ou fournisseur, si la réclamation porte

sur une somme qui fut légalement retenue à même les sommes dues au réclamant; ou

- ii. s'est acquitté des derniers services ou travaux ou a fourni les derniers matériaux conformément au contrat qui le lie à l'entrepreneur ou à son sous-traitant ou fournisseur, dans les cas où la réclamation porte sur des sommes dont il n'est pas légalement requis quelles soient retenues du réclamant;
- b) pour lesquelles les procédures visant à établir les droits au paiement, conformément à l'alinéa 5) de la CG5.8, ont été entamées dans l'année suivant la date à laquelle l'avis exigé dans le sous-alinéa 7)a) de la CG5.8 a été reçu par le Canada, sous réserve des dispositions de la loi provinciale ou des territoires applicable, le cas échéant.
- 8) Sur réception d'un avis de réclamation, le Canada peut retenir, à même toutes les sommes dues et payables à l'entrepreneur en vertu du contrat, l'intégralité ou toute partie du montant de cette réclamation.
 - 9) Le Canada doit aviser par écrit l'entrepreneur avec diligence de toutes les réclamations reçues et l'aviser de son intention de retenir des fonds. L'entrepreneur peut, à tout moment par la suite et jusqu'à ce que le paiement soit effectué au réclamant, déposer, auprès du Canada, une sûreté à la satisfaction de ce dernier dont le montant est équivalent à la valeur de la réclamation; sur réception de cette sûreté, le Canada verse à l'entrepreneur tous les fonds qui auraient dû normalement lui être versés et qui ont été retenus conformément aux dispositions de cette clause suite à la réclamation d'un réclamant pour laquelle la sûreté a été déposée.

CG5.9 DROIT DE COMPENSATION

- 1) Sans restreindre tout droit de compensation ou de déduction prévu explicitement ou implicitement par la loi ou ailleurs dans le contrat, le Canada peut opérer compensation de toute somme due par l'entrepreneur au Canada en vertu du contrat ou de tout autre contrat en cours, à l'encontre des sommes dues par le Canada à l'entrepreneur en vertu du contrat.
- 2) Pour les fins de l'alinéa 1) de la CG5.9, l'expression « contrat en cours » signifie un contrat conclu entre le Canada et l'entrepreneur :
 - a) en vertu duquel l'entrepreneur est légalement obligé d'exécuter des travaux ou de fournir de la main-d'œuvre ou des matériaux; ou
 - b) à l'égard duquel le Canada a, depuis la date du contrat, exercé son droit de retirer à l'entrepreneur les travaux faisant l'objet de ce contrat.

CG5.10 DÉDOMMAGEMENT POUR RETARD D'ACHÈVEMENT

- 1) Pour les fins de cette clause:
 - a) les travaux sont censés être achevés à la date du certificat d'achèvement;
 - b) « période de retard » signifie la période commençant le jour fixé pour l'achèvement des travaux et se terminant le jour précédant immédiatement le jour de l'achèvement des travaux, à l'exception cependant de tout jour faisant partie d'un délai de

prolongation accordée en vertu de la CG6.5, « Retards et prolongation du délai », et de tout autre jour où, de l'avis du Canada, l'achèvement des travaux a été retardé pour des raisons indépendantes de la volonté de l'entrepreneur.

- 2) Si l'entrepreneur n'achève pas les travaux au jour fixé pour leur achèvement, mais achève ces travaux par la suite, l'entrepreneur verse au Canada un montant égal à l'ensemble:
 - a) de tous les salaires, gages et frais de déplacement versés par le Canada aux personnes surveillant l'exécution des travaux pendant la période de retard;
 - b) des coûts encourus par le Canada en conséquence de l'impossibilité pour le Canada de faire usage des travaux achevés pendant la période de retard; et
 - c) de tous les autres frais et dommages encourus ou subis par le Canada pendant la période de retard par suite de l'inachèvement des travaux à la date prévue.
- 3) S'il estime que l'intérêt public le commande, le Canada peut renoncer à son droit à la totalité ou à toute partie d'un paiement exigible de l'entrepreneur conformément à l'alinéa 2) de la CG5.10.

CG5.11 RETARD DE PAIEMENT

- 1) Nonobstant la CG1.5, « Rigueur des délais », tout retard accusé par le Canada à faire un paiement à sa date d'exigibilité en vertu de la CG5, « Modalités de paiement », ne constitue pas un défaut du Canada aux termes du contrat.
- 2) Sous réserve de l'alinéa 3) de la CG5.11, le Canada verse à l'entrepreneur des intérêts simples au taux d'escompte moyen majoré de 3p. 100 par an sur tout montant en souffrance en vertu de l'alinéa 3) de la CG5.1, « Interprétation » les intérêts s'appliquent à compter du premier jour de retard jusqu'au jour précédant la date du paiement.
- 3) Les intérêts sont versés sans que l'entrepreneur ait à en faire la demande, sous réserve des conditions suivantes:
 - a) pour ce qui est des montants en souffrance depuis moins de 15 jours, aucun intérêt ne sera versé en vertu de paiements effectués à l'intérieur de cette période, à moins que l'entrepreneur en fasse la demande après que lesdits montants soient dus; et
 - b) les intérêts ne seront ni exigibles, ni versés sur les paiements anticipés en souffrance, le cas échéant.

CG5.12 INTÉRÊTS SUR LES RÉCLAMATIONS RÉGLÉES

- 1) Pour les fins de cette clause, une réclamation signifie tout montant faisant l'objet d'un litige et assujéti à des négociations entre le Canada et l'entrepreneur en vertu du contrat.
- 2) Une réclamation est réputée réglée lorsqu'une entente par écrit est signée par le Canada et l'entrepreneur et fait état du montant de la réclamation à verser par le Canada et des travaux pour lesquels ledit montant doit être versé.

- 3) Une réclamation réglée est réputée être impayée à compter de la journée qui suit immédiatement la date à laquelle la réclamation était due et exigible en vertu du contrat, s'il n'y avait pas eu contestation.
- 4) Le Canada doit verser à l'entrepreneur des intérêts simples sur le montant d'une réclamation réglée, au taux d'escompte moyen majoré de 3p. 100 par an à compter du premier jour où cette réclamation est censée être en souffrance jusqu'au jour précédant la date de paiement.

CG5.13 REMISE DU DÉPÔT DE GARANTIE

- 1) Après la délivrance du certificat d'achèvement substantiel et à condition que l'entrepreneur n'ait pas manqué à ses engagements en vertu du contrat ou ne soit pas en défaut au terme du contrat, le Canada doit retourner à l'entrepreneur la totalité ou toute partie du dépôt de garantie qui, de l'avis du Canada, n'est pas requise aux fins du contrat.
- 2) Après la délivrance du certificat d'achèvement, le Canada doit retourner à l'entrepreneur le solde de tout dépôt de garantie, sauf stipulation contraire du contrat.
- 3) Si le dépôt de garantie a été versé au Fonds du revenu consolidé du Canada, le Canada doit payer à l'entrepreneur l'intérêt sur ledit dépôt selon le taux établi en application de l'article 21(2) de la [*Loi sur la gestion des finances publiques \(LGFP\)*](#).

CONDITIONS GÉNÉRALES (CG) 6 - RETARDS ET MODIFICATIONS DES TRAVAUX

- CG6.1 MODIFICATIONS DES TRAVAUX
- CG6.2 CHANGEMENTS DES CONDITIONS DU SOUS-SOL
- CG6.3 RESTES HUMAINS, VESTIGES ARCHÉOLOGIQUES ET OBJETS PRÉSENTANT UN INTÉRÊT HISTORIQUE OU SCIENTIFIQUE
- CG6.4 CALCUL DU PRIX
 - CG6.4.1 CALCUL DU PRIX AVANT D'APPORTER DES MODIFICATIONS
 - CG6.4.2 CALCUL DU PRIX APRÈS AVOIR APPORTÉ DES MODIFICATIONS
 - CG6.4.3 CALCUL DU PRIX DES PRIX UNITAIRES
- CG6.5 RETARDS ET PROLONGATION DE DÉLAI

CG6.1 MODIFICATIONS DES TRAVAUX

- 1) En tout temps avant la délivrance d'un certificat d'achèvement, le Canada peut ordonner pour des additions, suppressions ou autres modifications aux travaux ou des changements à l'emplacement ou au positionnement de l'ensemble ou d'une partie des travaux à la condition que ces additions, suppressions, modifications ou autre révision soient, selon lui, conformes à l'intention générale du contrat.
- 2) Tout ordre mentionné à l'alinéa 1) de la CG6.1 est émis par écrit et est signifié à l'entrepreneur conformément à la CG2.3, « Avis ».
- 3) Sur réception d'un ordre, l'entrepreneur exécute promptement les travaux conformément à cet ordre, comme s'il était reproduit dans le contrat d'origine et qu'il en faisait partie.
- 4) Si ce que l'entrepreneur a fait ou omis de faire suite à un ordre augmente ou réduit le coût des travaux, ceux-ci sont payés conformément à la CG6.4, « Calcul du Prix ».

CG6.2 CHANGEMENTS DES CONDITIONS DU SOUS-SOL

- 1) Si, pendant l'exécution des travaux, l'entrepreneur constate une différence substantielle entre les conditions réelles du sous-sol rencontrées à l'emplacement des travaux et, celles décrites aux documents de soumission fournis à l'entrepreneur, ou celles que l'entrepreneur a raisonnablement présumées exister en se fondant sur les renseignements contenus aux dits documents, l'entrepreneur doit en donner avis au Canada dès qu'il en a connaissance.
- 2) Si l'entrepreneur est d'avis qu'il peut encourir ou subir des frais supplémentaires, pertes ou dommages directement attribuables aux changements des conditions du sous-sol, il doit, dans les 10 jours de la date à laquelle il a constaté ces changements, aviser par écrit au Canada de son intention de réclamer le remboursement des frais supplémentaires encourus ou le coût de toute perte ou dommage.
- 3) Si l'entrepreneur a donné l'avis visé dans l'alinéa 2) de la CG6.2, il doit dans les 30 jours suivant la date de délivrance du certificat d'achèvement substantiel, transmettre au Canada une réclamation écrite des frais supplémentaires, pertes ou dommages.
- 4) Une réclamation écrite visée à l'alinéa 3) de la CG6.2 doit contenir une description suffisante des faits et circonstances qui motivent la réclamation afin que le Canada puisse déterminer si cette réclamation est justifiée ou non, et l'entrepreneur doit, à cette fin, fournir tout autre renseignement que le Canada peut exiger.

- 5) Si, de l'avis du Canada, la réclamation visée à l'alinéa 3) de la CG6.2 est justifiée, le Canada verse à l'entrepreneur un supplément calculé conformément à la CG6.4, « Calcul du prix ».
- 6) Lorsque, de l'avis du Canada, l'entrepreneur réalise des économies directement attribuables à une différence substantielle entre les conditions du sous-sol rencontrées à l'emplacement des travaux et celles décrites aux documents de soumission fournis à l'entrepreneur ou celles que l'entrepreneur a raisonnablement présumées exister en se fondant sur les renseignements contenus aux dits documents, le montant du contrat sera réduit de la somme des économies déterminée conformément à la CG6.4, « Calcul du prix ».
- 7) Si l'entrepreneur néglige de donner l'avis visé à l'alinéa 2) de la CG6.2 et de présenter une réclamation faisant l'objet de l'alinéa 3) de la CG6.2 dans le délai prescrit, aucun supplément ne sera versé en l'occurrence.
- 8) Le Canada ne garantit le contenu d'aucun rapport de conditions du sous-sol ayant été mis à la disposition de l'entrepreneur pour consultation et ne faisant pas partie des documents de soumission ni des documents contractuels.

CG6.3 RESTES HUMAINS, VESTIGES ARCHÉOLOGIQUES ET OBJETS PRÉSENTANT UN INTÉRÊT HISTORIQUE OU SCIENTIFIQUE

- 1) Pour les fins de la présente clause :
 - a) restes humains » signifie la totalité ou une partie d'un cadavre humain, peu importe le temps écoulé depuis le décès;
 - b) « vestiges archéologiques » signifie pièces, artefacts ou objets façonnés, modifiés ou utilisés par des êtres humains dans le passé, pouvant notamment comprendre des structures ou des monuments en pierre, en bois ou en fer, des objets jetés aux ordures, des ossements façonnés, des armes, des outils, des pièces de monnaie et des poteries;
 - c) « objets présentant un intérêt historique ou scientifique » signifie objets ou choses d'origine naturelle ou artificielle de toute époque qui ne sont pas des vestiges archéologiques mais qui peuvent présenter un certain intérêt pour la société en raison de leur importance historique ou scientifique, de leur valeur, de leur rareté, de leur beauté naturelle ou de quelque autre qualité.
- 2) Si, au cours des travaux, l'entrepreneur découvre quelque objet, pièce ou chose que décrit l'alinéa 1) de la CG6.3 ou qui ressemble à tout objet, pièce ou chose décrit par l'alinéa 1) de la CG6.3, il doit :
 - a) prendre toutes les mesures raisonnables et nécessaires, y compris ordonner l'arrêt des travaux dans la zone visée, pour les protéger et les préserver;
 - b) aviser immédiatement le Canada de la situation, par écrit;
 - c) prendre toutes les mesures raisonnables et nécessaires pour réduire les coûts supplémentaires que pourrait entraîner tout arrêt des travaux.
- 3) Dès la réception d'un avis transmis conformément au sous-alinéa 2) b) de la CG6.3, le Canada détermine promptement si l'objet, la pièce ou la chose correspond à la description

donnée à l'alinéa 1) de la CG6.3 ou s'il est visé par cet alinéa, et il indique par écrit à l'entrepreneur les mesures à prendre ou les travaux à entreprendre par suite de la décision du Canada

- 4) Le Canada peut en tout temps retenir les services d'experts pour l'aider à mener à bien la recherche, l'examen, l'exécution de mesurages ou l'enregistrement d'autres données, la mise en place de dispositifs permanents de protection ou le déplacement de l'objet, de la pièce ou de la chose découvert par l'entrepreneur, et l'entrepreneur permet, à la satisfaction du Canada, l'accès au chantier et collabore avec eux à l'accomplissement de leurs tâches et de leurs obligations.
- 5) Les restes humains, les vestiges archéologiques et les objets présentant un intérêt historique ou scientifique demeurent la propriété du Canada.
- 6) Sauf stipulation contraire du contrat, les dispositions de la CG6.4, « Calcul du prix », et de la CG6.5, « Retards et prolongation de délai », s'appliquent.

CG6.4 CALCUL DU PRIX

CG6.4.1 Calcul du prix avant d'apporter des modifications

- 1) Si une entente à forfait s'applique à l'ensemble ou à une partie du contrat, le prix de toute modification correspondra à l'ensemble des coûts de main-d'œuvre, d'outillage et de matériaux nécessaires pour exécuter cette modification selon les modalités convenues par écrit entre l'entrepreneur et le Canada ainsi qu'à une majoration négociée au titre de l'ensemble de la surveillance, de la coordination, de l'administration, des frais généraux, de la marge bénéficiaire et des risques que comporte la réalisation des travaux dans le respect du budget précisé.
- 2) Si une entente à prix unitaire s'applique à l'ensemble ou à une partie du contrat, l'entrepreneur et le Canada peuvent, par convention écrite, ajouter, dans le tableau des prix unitaires, articles, unités de mesure, quantités estimatives et prix unitaires.
- 3) Un prix unitaire visé à l'alinéa 2) de la CG6.4.1 doit être calculé en fonction de l'ensemble des coûts estimatifs de main-d'œuvre, d'outillage et de matériaux nécessaires pour les articles supplémentaires convenus entre l'entrepreneur et le Canada, ainsi qu'à une majoration négociée.
- 4) Pour permettre l'approbation du prix de la modification ou l'ajout du prix par unité, selon le cas, l'entrepreneur doit présenter une ventilation estimative des coûts, indiquant au minimum, les frais estimatifs de main-d'œuvre, d'outillage et de matériaux, le montant de chaque contrat de sous-traitance et le montant de la majoration.
- 5) Si aucun accord n'est conclu selon les modalités de l'alinéa 1) de la CG6.4.1, le prix est calculé conformément à la CG6.4.2.
- 6) Si aucun accord n'est conclu selon les modalités des alinéas 2) et 3) de la CG6.4.1, le Canada établit la catégorie et l'unité de mesure des articles de main-d'œuvre, d'outillage ou de matériaux, et le prix unitaire est calculé conformément à la CG6.4.2.

CG6.4.2 Calcul du prix après avoir apporté des modifications

- 1) S'il est impossible d'établir au préalable le prix d'une modification apportée aux travaux ou qu'aucune entente n'est conclue à ce sujet, le prix de la modification est égal à l'ensemble :
 - a) de tous les montants justes et raisonnables effectivement déboursés ou légalement payables par l'entrepreneur pour la main-d'œuvre, l'outillage et les matériaux appartenant à l'une des catégories de dépenses prévues à l'alinéa 2) de la CG6.4.2 qui sont directement attribuables à l'exécution du contrat;
 - b) d'une majoration pour la marge bénéficiaire et l'ensemble des autres dépenses ou frais, y compris les frais généraux, les frais d'administration générale, les frais de financement et les intérêts, pour un montant égal à 10 p. 100 de la somme des frais visés au sous-alinéa 1)a) de la CG6.4.2;
 - c) des intérêts sur les montants établis en vertu des sous-alinéas 1)a) et 1)b) de la CG6.4.2 et calculés conformément à la CG5.12, « Intérêts sur les réclamations réglées ».
- 2) Les frais de main-d'œuvre, d'outillage et de matériaux visés dans le sous-alinéa 1)a) de la CG6.4.2 Sont limités aux catégories de dépenses suivantes :
 - a) les paiements faits aux sous-traitants et aux fournisseurs;
 - b) les traitements, salaires et primes et, s'il y a lieu, les dépenses de voyages et d'hébergement des employés de l'entrepreneur affectés au chantier, de même que la tranche des traitements, des salaires, des primes et, s'il y a lieu, des dépenses de voyages et d'hébergement des membres du personnel de l'entrepreneur travaillant généralement au siège social ou dans un bureau général de l'entrepreneur, à la condition que ces employés soient effectivement affectés de manière appropriée aux travaux prévus au contrat;
 - c) les cotisations exigibles en vertu des lois se rapportant à l'indemnisation des accidents du travail, l'assurance-emploi, le régime de retraite ou les congés rémunérés, les régimes d'assurance-maladie ou d'assurance des provinces, les examens environnementaux et les frais de perception des taxes applicables;
 - d) les frais de location d'outillage ou un montant équivalent à ces frais si l'outillage appartient à l'entrepreneur, qu'il était nécessaire et qu'il a été utilisé dans l'exécution des travaux, à la condition que lesdits frais ou le montant équivalent soient raisonnables et que l'utilisation de cet outillage ait été approuvée par le Canada;
 - e) les frais d'entretien et de fonctionnement de l'outillage nécessaire à l'exécution des travaux et les frais de réparation de cet outillage qui, de l'avis du Canada, sont nécessaires à la bonne exécution du contrat, à l'exclusion des frais de toute réparation de l'outillage attribuables à des vices existants avant l'affectation de l'outillage aux travaux;
 - f) les paiements relatifs aux matériaux nécessaires et intégrés aux travaux, ou nécessaires à l'exécution du contrat et utilisés à cette fin;
 - g) les paiements relatifs à la préparation, à la livraison, à la manutention, au montage, à l'installation, à l'inspection, à la protection et à l'enlèvement de l'outillage et des matériaux nécessaires à l'exécution du contrat et utilisés à cette fin;
 - h) tout autre paiement fait par l'entrepreneur avec l'approbation du Canada qui sont nécessaires à l'exécution du contrat, conformément aux documents contractuels.

CG6.4.3 Calcul du prix des prix unitaires

- 1) Sauf dans les cas prévus dans les alinéas 2), 3), 4) et 5) de la CG6.4.3, il appert que la quantité finale de main-d'œuvre, d'outillage et de matériaux pour un article à prix unitaire est supérieure ou inférieure à la quantité estimative, l'entrepreneur exécute les travaux ou fournit l'outillage et les matériaux nécessaires à l'achèvement de cet article, et les travaux effectivement exécutés ou l'outillage et les matériaux effectivement fournis sont payés selon les prix unitaires indiqués dans le contrat.
- 2) Si la quantité finale de l'article à prix unitaire dépasse de plus de 15p. 100 la quantité estimative, l'une des deux parties au contrat peut adresser par écrit à l'autre une demande pour négocier la modification du prix unitaire pour la partie de l'article en sus de 115p.100 de la quantité estimative; afin de permettre l'approbation du prix unitaire modifié, l'entrepreneur dépose sur demande, auprès du Canada :
 - a) les relevés détaillés des coûts réels de l'entrepreneur pour l'exécution ou la fourniture de la quantité estimative pour l'article à prix unitaire, jusqu'à la date à laquelle la négociation a été demandée;
 - b) le coût unitaire estimatif de la main-d'œuvre, de l'outillage et des matériaux nécessaires pour la partie de l'article en sus de 115 p.100 de la quantité estimative.
- 3) Si les deux parties ne s'entendent pas selon les modalités de l'alinéa 2) de la CG6.4.3, le prix unitaire est calculé conformément à la CG6.4.2.
- 4) Lorsque la quantité finale de main-d'œuvre, d'outillage et de matériaux pour un article à prix unitaire est inférieure à 85 p.100 de la quantité estimative, l'une des deux parties au contrat peut adresser par écrit à l'autre une demande pour négocier la modification du prix unitaire de cet article si :
 - a) il existe une différence démontrable entre le coût unitaire de l'entrepreneur pour l'exécution ou la fourniture de la quantité estimative et son coût unitaire pour l'exécution ou la fourniture de la quantité finale;
 - b) la différence de coût unitaire est attribuable exclusivement à la réduction de la quantité, à l'exclusion de toute autre cause.
- 5) Pour les besoins de la négociation visée à l'alinéa 4) de la CG6.4.3 :
 - a) il incombe à la partie qui fait la demande de négociation d'établir, justifier et quantifier la modification proposée;
 - b) le prix total d'un article qui a été modifié en raison d'une réduction de quantité conformément à l'alinéa 4) de la CG6.4.3 ne doit en aucun cas être supérieur au montant qui aurait été versé à l'entrepreneur si 85p.100 de la quantité estimée avait été effectivement exécutée ou fournies.

CG6.5 RETARDS ET PROLONGATION DE DÉLAI

- 1) À la demande de l'entrepreneur avant la date fixée pour l'achèvement des travaux ou avant toute autre date fixée antérieurement en conformité du présent alinéa, le Canada peut prolonger le délai d'achèvement des travaux en fixant une nouvelle date s'il constate que des causes indépendantes de la volonté de l'entrepreneur en ont retardé l'achèvement.

- 2) La demande de l'entrepreneur doit être accompagnée du consentement écrit de la compagnie dont le cautionnement constitue une partie de la garantie du contrat.
- 3) Sous réserve de l'alinéa 4) de la CG6.5, aucun paiement autre qu'un paiement prévu expressément dans le contrat n'est versé par le Canada à l'entrepreneur pour les dépenses supplémentaires et pour les pertes ou les dommages engagés ou subis par l'entrepreneur pour cause de retard, que le retard soit attribuable ou non à des circonstances indépendantes de la volonté de ce dernier.
- 4) Si l'entrepreneur encourt ou subit des frais supplémentaires, des pertes ou des dommages directement attribuables à la négligence ou à un retard de la part du Canada après la date du contrat, à fournir tout renseignement ou à tout acte auquel le Canada est expressément obligé par le contrat ou que les usages de l'industrie dicteraient ordinairement à tout propriétaire, l'entrepreneur doit, dans les 10 jours ouvrables suivant la date de la première négligence ou du premier retard, aviser le Canada par écrit de son intention de réclamer le remboursement des frais supplémentaires encourus ou le coût de toute perte ou dommage.
- 5) Lorsque l'entrepreneur donne un avis visé dans l'alinéa 4) de la CG6.5, il doit sous peine de déchéance dans les 30 jours suivant la date de délivrance du certificat d'achèvement, présenter par écrit au Canada une réclamation des frais supplémentaires, pertes ou dommages.
- 6) Une réclamation écrite visée à l'alinéa 5) de la CG6.5 doit comprendre une description suffisante des faits et circonstances qui motivent la réclamation pour permettre au Canada de déterminer si cette réclamation est justifiée ou non, et l'entrepreneur fournit tout autre renseignement complémentaire que le Canada peut exiger à cette fin.
- 7) i, de l'avis du Canada, la réclamation mentionnée à l'alinéa 5) de la CG6.5 est justifiée, le Canada verse à l'entrepreneur un supplément calculé conformément à la CG6.4, « Calcul du prix ».
- 8) Si l'entrepreneur néglige de donner l'avis visé à l'alinéa 4) et de présenter une réclamation faisant l'objet de l'alinéa 5) de la CG6.5 dans le délai prescrit, aucun supplément ne lui est versé à cet égard.

CONDITIONS GÉNÉRALES (CG) 7 - DÉFAUT, SUSPENSION OU RÉILIATION DU CONTRAT

- CG7.1 TRAVAUX RETIRÉS À L'ENTREPRENEUR
- CG7.2 SUSPENSION DES TRAVAUX
- CG7.3 RÉILIATION DU CONTRAT
- CG7.4 DÉPÔT DE GARANTIE - CONFISCATION OU REMISE

CG7.1 TRAVAUX RETIRES A L'ENTREPRENEUR

- 1) Le Canada peut, sans autre autorisation, en donnant un avis par écrit à l'entrepreneur conformément à la CG2.3, Avis, retirer à l'entrepreneur la totalité ou toute partie des travaux et recourir aux moyens qui lui semblent appropriés pour achever les travaux si l'entrepreneur :
 - a) fait défaut ou tarde à commencer ou à exécuter les travaux avec diligence et à la satisfaction du Canada, dans les 6 jours suivant l'envoi de l'avis par écrit du Canada à l'entrepreneur, conformément à la CG2.3, « Avis »
 - b) néglige d'achever quelque partie des travaux dans le délai imparti par le contrat;
 - c) devient insolvable ou a commis un acte de faillite et na pas fait de proposition à ses créanciers, ni déposé d'avis d'intention de faire une telle proposition en vertu de la [Loi sur la faillite et l'insolvabilité](#);
 - d) abandonne les travaux;
 - e) fait cession du contrat sans le consentement requis à la CG1.16, « Cession » ou
 - f) fait défaut de quelque autre façon d'observer ou d'accomplir l'une quelconque des dispositions du contrat.
- 2) Si la totalité ou toute partie des travaux est retirée à l'entrepreneur, l'entrepreneur na droit, sauf dispositions de l'alinéa 3) de la CG7.1, à aucun autre paiement dû et exigible, et l'entrepreneur est tenu de payer au Canada, sur demande un montant égal à la totalité des pertes et dommages que le Canada aura subis en raison du défaut de l'entrepreneur d'achever les travaux.
- 3) Si la totalité ou toute partie des travaux retirés à l'entrepreneur est achevée par le Canada, le Canada peut payer le montant qu'il a établi, le cas échéant, de toute retenue ou demande d'acompte, due et exigible avant la date à laquelle les travaux ont été retirés à l'entrepreneur et qui n'est pas nécessaire pour assurer l'exécution des travaux ou pour indemniser le Canada des pertes ou dommages encourus ou subis en raison du défaut de l'entrepreneur.
- 4) Le retrait de la totalité ou de toute partie des travaux à l'entrepreneur n'as pas pour effet de libérer l'entrepreneur de quelque obligation stipulée au contrat ou imposée par la loi, sauf quant à l'obligation pour lui de continuer l'exécution de la partie des travaux qui lui fut ainsi retirée.
- 5) Si la totalité ou une partie des travaux est retirée à l'entrepreneur, tous les matériaux et outillage, ainsi que l'intérêt de l'entrepreneur ou de ses fournisseurs ou sous-traitants à tous les niveaux dans tous les biens immobiliers, permis, pouvoirs et privilèges acquis, utilisés

ou fournis par l'entrepreneur ou ses fournisseurs ou sous-traitants à tous les niveaux en vertu du contrat continuent d'appartenir au Canada, sans indemnisation.

- 6) Lorsque le Canada certifie que tout outillage, matériaux ou un intérêt quelconque de l'entrepreneur n'est plus nécessaire pour les travaux ou qu'il n'est plus dans l'intérêt du Canada de retenir lesdits outillage, matériaux ou intérêts, ils sont remis à l'entrepreneur.
- 7) Si l'entrepreneur devient insolvable ou fait faillite et qu'il dépose une proposition auprès de ses créanciers ou un avis d'intention de déposer cette proposition, conformément à la [Loi sur la faillite et l'insolvabilité](#), il doit immédiatement faire parvenir au Canada une copie de cette proposition ou de cet avis d'intention.

CG7.2 SUSPENSION DES TRAVAUX

- 1) Le Canada peut, lorsqu'il estime que l'intérêt public le commande, sommer l'entrepreneur de suspendre l'exécution des travaux pour une durée déterminée ou indéterminée, en lui communiquant par écrit un avis de suspension, conformément à la CG2.3, « Avis ».
- 2) Sur réception d'un avis de suspension, l'entrepreneur suspend toutes les opérations relatives aux travaux, sauf celles que le Canada juge nécessaires pour l'entretien et la préservation des travaux, de l'outillage et des matériaux.
- 3) Pendant la durée de la suspension, l'entrepreneur ne peut enlever du chantier quelque partie des travaux, de l'outillage ou des matériaux sans le consentement du Canada.
- 4) Si la durée de la suspension est égale ou inférieure à 60 jours, l'entrepreneur reprend l'exécution des travaux dès l'expiration de cette période et il a droit au paiement des frais supplémentaires qu'il a nécessairement encourus en raison de la suspension; ces frais sont calculés conformément à la CG6.4, « Calcul du prix ».
- 5) Si la durée de la suspension est supérieure à 60 jours, le Canada et l'entrepreneur peuvent convenir que ce dernier continue l'exécution des travaux, et l'entrepreneur reprend l'exécution des travaux sujets aux modalités et conditions convenues entre le Canada et l'entrepreneur. Si le Canada et l'entrepreneur ne conviennent pas que ce dernier continue d'exécuter les travaux ou qu'ils ne s'entendent pas sur les modalités et conditions dans lesquelles l'entrepreneur doit continuer ceux-ci, l'avis de suspension est réputé constituer un avis de résiliation conformément à la CG7.3, « Résiliation du contrat ».

CG7.3 RÉSILIATION DU CONTRAT

- 1) Le Canada peut résilier le contrat à tout moment en envoyant à l'entrepreneur un avis écrit de résiliation conformément à la CG2.3, « Avis ».
- 2) Lorsque l'entrepreneur reçoit un avis de résiliation, il cesse aussitôt toutes les activités consacrées à l'exécution du contrat, sous réserve des conditions précisées dans cet avis.
- 3) Sous réserve de l'alinéa 4) de la CG7.3, si le contrat est résilié, le Canada verse à l'entrepreneur le montant jugé payable à ce dernier en vertu de la CG6.4, « Calcul du prix », moins l'ensemble de tous les montants qui furent payés à l'entrepreneur par le Canada et de tous les montants dont l'entrepreneur est redevable envers le Canada en vertu du contrat.

- 4) Le montant total à payer par le Canada à l'entrepreneur ne doit en aucun cas dépasser le montant, calculé conformément à la CG5, « Modalités de paiement », qui aurait dû lui être payé s'il avait terminé les travaux.
- 5) Le Canada effectuera le paiement à l'entrepreneur, le cas échéant, le plus tôt possible selon les circonstances.

CG7.4 DÉPÔT DE GARANTIE - CONFISCATION OU REMISE

- 1) Si les travaux sont retirés à l'entrepreneur ou que ce dernier manqué à ses obligations ou est en défaut aux termes du contrat, le Canada peut s'approprier le dépôt de garantie, s'il en est.
- 2) Si le Canada s'approprie le dépôt de garantie, le montant obtenu en l'occurrence est réputé être un montant payable à l'entrepreneur par le Canada en vertu du contrat.
- 3) Tout solde du montant obtenu, s'il en est, après paiement de toutes pertes, dommages ou réclamations du Canada et des tiers, sera payé par le Canada à l'entrepreneur si, selon le Canada, ce solde n'est pas nécessaire pour les fins du contrat.

CONDITIONS GÉNÉRALES (CG) 8 - RÈGLEMENT DES DIFFÉRENDS

- CG8.1 INTERPRÉTATION
- CG8.2 CONSULTATION ET COLLABORATION
- CG8.3 AVIS DE DIFFÉREND
- CG8.4 NÉGOCIATION
- CG8.5 MÉDIATION
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- CG8.7 RÈGLEMENT
- CG8.8 RÈGLES POUR LA MÉDIATION DES DIFFÉRENDS
 - CG8.8.1 INTERPRÉTATION
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 - CG8.8.8 PROCÉDURES
 - CG8.8.9 ACCORD DE RÈGLEMENT
 - CG8.8.10 FIN DE LA MÉDIATION
 - CG8.8.11 FRAIS
 - CG8.8.12 PROCÉDURES SUBSEQUENTES

CG8.1 INTÉRPRETATION

- 1) On entend par « différend » les conflits se rapportant à toute question définie par l'entrepreneur dans l'avis soumis au Canada conformément à l'alinéa 2) de la CG8.3, « Avis de différend », y compris les réclamations de l'entrepreneur résultant de ce différend et toutes les contre-réclamations du Canada, mais cette expression ne comprend pas des demandes de l'une ou l'autre des parties pour dommages-intérêts punitifs ou exemplaires, blessures, décès ou toute réclamation fondée sur une allégation de diffamation ou sur une déclaration calomnieuse.
- 2) Les procédures de règlement extrajudiciaire des différends prévues à la CG8 ne s'appliquent pas à une réclamation du Canada contre l'entrepreneur, à l'exception d'une contre-réclamation résultant d'un différend répondant à la définition de l'alinéa 1) de la CG8.1, y compris, sans limitation, une réclamation fondée sur la compensation de toute somme payable par l'entrepreneur au Canada en vertu de la CG5.10, « Dédommagement pour retard d'achèvement ».

CG8.2 CONSULTATION ET COLLABORATION

- 1) Les parties conviennent d'assurer une communication ouverte et honnête pendant toute la durée de l'exécution du contrat.
- 2) Les parties conviennent de se consulter et collaborer dans l'exécution des travaux et la résolution des problèmes ou des différends qui peuvent survenir.

CG8.3 AVIS DE DIFFÉREND

- 1) Tout différend surgissant entre les parties au contrat, de quelque nature qu'il soit découlant du contrat ou relativement à celui-ci, qui peut donner lieu à une réclamation de l'entrepreneur contre le Canada et qui n'est pas réglé par consultation et collaboration selon les modalités de la CG8.2, « Consultation et collaboration », est résolu en premier lieu par le Canada, dont la décision ou la directive écrite est finale et exécutoire, sous réserve des dispositions de la CG8. Une décision ou directive écrite comprend notamment toute décision ou directive émise par écrit par le Canada en vertu des dispositions des Conditions générales.
- 2) L'entrepreneur est réputé avoir accepté la décision ou directive du Canada visée à l'alinéa 1) de la CG8.3 et avoir exonéré expressément le Canada de toute réclamation à l'égard de la question visée dans cette décision ou directive sauf s'il soumet au Canada, dans les 15 jours ouvrables suivant la réception de cette décision ou directive, un avis écrit de différend demandant une négociation formelle en vertu de la CG8.4, « Négociation ». Cet avis doit référer spécifiquement à la CG8.4, « Négociation », et préciser les questions en litige de même que les dispositions pertinentes du contrat.
- 3) L'envoi d'un avis écrit conformément à l'alinéa 2) de la CG8.3 par l'entrepreneur n'aura pas pour effet de dégager pour autant de son obligation de respecter la décision ou la directive faisant l'objet du différend. Toutefois, le fait que l'entrepreneur se conforme à cette décision ou directive ne peut être interprété comme une admission par l'entrepreneur du bien-fondé de cette décision ou directive.
- 4) Si un différend n'est pas réglé rapidement, le Canada donne à l'entrepreneur les instructions qui, à son avis, sont nécessaires à la bonne exécution des travaux et pour prévenir les retards en attendant le règlement de la question. L'entrepreneur continue d'exécuter lesdits travaux conformément aux dispositions et aux exigences du contrat, ainsi qu'aux instructions du Canada, sauf si le Canada résilie le contrat, ordonne à l'entrepreneur de suspendre les travaux ou retire les travaux à l'entrepreneur. L'exécution desdits travaux n'a pas pour effet de porter préjudice aux réclamations de l'entrepreneur.
- 5) Nulle disposition de la CG8 n'a pour effet de dégager l'entrepreneur de son obligation de donner tout autre avis exigé par le contrat dans le délai qui y est précisé, notamment tous les avis prévus en vertu de la CG6.2, « Changements des conditions du sous-sol ».

CG8.4 NÉGOCIATION

- 1) Dans les 10 jours ouvrables suivant la réception, par le Canada, d'un avis visé à l'alinéa 2) de la CG8.3 ou dans tout autre délai pouvant être fixé d'un commun accord, les parties doivent entreprendre des négociations formelles afin de résoudre leur différend. Les négociations se déroulent initialement entre les représentants de l'entrepreneur et du Canada qui assument directement la surveillance de l'exécution, l'administration ou la gestion du contrat.
- 2) Si les représentants visés à l'alinéa 1) de la CG8.4 ne peuvent pas résoudre une partie ou la totalité des questions faisant l'objet des négociations dans les 10 jours ouvrables afin de régler les questions non résolues, les parties font appel à un deuxième niveau de négociation impliquant un ou des dirigeants de l'entrepreneur et un ou des cadres supérieurs représentant le Canada.
- 3) Si les négociations ne permettent pas de résoudre le différend dans les 30 jours ouvrables suivant la date de signification de l'avis mentionné à l'alinéa 2) de la CG8.3, « Avis de différend », ou dans le délai prolongé d'un commun accord, l'entrepreneur peut, à l'expiration de cette période envoyer au Canada un avis écrit conformément à la CG2.3,

« Avis », dans les 10 jours ouvrables qui suivent cette date, et demander qu'un médiateur intervienne pour aider les parties à s'entendre sur les questions non résolues.

- 4) Si l'entrepreneur ne demande pas la médiation dans le délai prévu à l'alinéa 3) de la CG8.4, il sera réputé avoir accepté la décision ou la directive du Canada en vertu de l'alinéa 1) de la CG8.3, « Avis de différend », et avoir exonéré expressément le Canada de toute réclamation concernant la question faisant l'objet de cette décision ou directive.

CG8.5 MÉDIATION

- 1) Si l'entrepreneur demande l'intervention d'un médiateur conformément à l'alinéa 3) de la CG8.4, « Négociation », cette médiation doit se dérouler conformément à la CG8.8, « Règles pour la médiation des différends ».
- 2) Si aucun médiateur de projet n'a été antérieurement nommé par les parties aux fins de l'application du contrat, les parties nomment un médiateur de projet conformément à la CG8.8, « Règles pour la médiation des différends », dès qu'un avis de demande de médiation a été donné aux termes de l'alinéa 3) de la CG8.4, « Négociation ».
- 3) Si le différend n'est pas résolu:
 - a) dans les 10 jours ouvrables suivant la nomination d'un médiateur de projet aux termes de l'alinéa 2) de la CG8.5, dans le cas où aucun médiateur n'a été préalablement nommé;
 - b) dans les 10 jours ouvrables suivant la réception, par le Canada, de l'avis écrit prévu à l'alinéa 3) de la CG8.4, « Négociation », dans le cas où un médiateur de projet a été préalablement nommé; ou
 - c) dans tout autre délai prolongé d'un commun accord des parties; le médiateur de projet doit mettre fin à la médiation, en avisant les parties par écrit de la date d'effet de la cessation de la médiation.

CG8.6 CONFIDENTIALITÉ

- 1) Sauf exigence contraire de la loi, tous les renseignements échangés par les parties et leurs représentants, par quelque moyen que ce soit, le seront sans préjudice et d'une manière confidentielle. Toutefois, la recevabilité ou divulgation d'un élément de preuve qui peut être autrement reçu en preuve ou dont la production peut être exigée lors d'un interrogatoire judiciaire, n'est pas affectée par l'utilisation de cet élément de preuve dans le cadre d'une procédure de règlement extrajudiciaire des différends.

CG8.7 RÈGLEMENT

- 1) Tout accord de règlement portant sur la totalité ou une partie d'un différend et conclu par quelque moyen que ce soit, est constaté par écrit et signé par les parties ou par leurs représentants agréés.

CG8.8 RÈGLES POUR LA MÉDIATION DES DIFFÉRENDS

CG8.8.1 Interprétation

Dans les présentes règles

- 1) « coordonnateur » signifie la personne désignée par le Canada comme coordonnateur de règlement des différends.

CG8.8.2 Application

- 1) D'un commun accord, les parties peuvent modifier les règles ou en ajouter d'autres.

CG8.8.3 Communication

- 1) Les communications écrites prévues par les présentes règles sont données de la même façon que les avis écrits donnés conformément à la CG2.3, « Avis ».

CG8.8.4 Nomination d'un médiateur de projet

- 1) D'un commun accord, les parties peuvent, en tout temps après l'entrée en vigueur du contrat, désigner un médiateur (le « médiateur de projet ») pour diriger une médiation conformément aux présentes, de tout différend pouvant découler de l'interprétation, de l'application ou de l'administration du contrat. Dans un tel cas, elles concluent un contrat avec le médiateur de projet, lequel est rédigé par le coordonnateur de règlement des différends et est agréé par les parties.
- 2) À défaut de désigner un médiateur de projet conformément à l'alinéa 1) de la CG8.8.4, celui-ci est désigné par les parties dans les 17 jours ouvrables suivant la réception d'un avis écrit de l'entrepreneur, conformément aux dispositions de la CG2.3, « Avis », demandant la tenue d'une négociation par voie de médiation en la manière prévue aux présentes règles afin d'aider les parties à régler les questions demeurant en litige. Le contrat conclu avec le médiateur de projet doit rencontrer les exigences requises aux fins du contrat visé à l'alinéa 1) de la CG8.8.4.
- 3) Dans les cas où la médiation est demandée par l'entrepreneur en vertu des modalités de l'alinéa 3) de la CG8.4, « Négociation », si les parties ont déjà conclu un contrat avec un médiateur de projet, elles transmettent au médiateur de projet et au coordonnateur dans un délai de 2 jours:
 - a) une copie de l'avis écrit de différend demandant la négociation formelle en vertu de l'alinéa 2) de la CG8.3, « Avis de différend »
 - b) une copie de la position écrite du Canada en rapport avec l'avis, les questions encore en litige et les références pertinentes au contrat;
 - c) une copie de la demande écrite de médiation de l'entrepreneur exigée en vertu de l'alinéa 3 de la CG8.4, « Négociation ».
- 4) Si les parties n'ont pas convenu d'un médiateur de projet, elles remettent au coordonnateur les documents visés aux sous-alinéas 3a) b) et c) de la CG8.8.4 ainsi qu'une demande exigeant l'assistance d'un médiateur de projet, mutuellement acceptable aux deux parties, en conformité des présentes règles.
- 5) Dans les 5 jours ouvrables suivant la réception de la demande et des documents visés à l'alinéa 4) de la CG8.8.4, le coordonnateur remet aux parties une liste de médiateurs qualifiés du secteur privé, liste obtenue d'une entité indépendante et impartiale, ainsi que

des instructions leur demandant de choisir et de classer, individuellement et confidentiellement, les médiateurs suggérés qu'ils jugent acceptables, selon un ordre de préférence. Chaque médiateur ainsi listé doit être impartial et indépendant des parties, et doit être un médiateur commercial d'expérience et compétent, connaissant de préférence l'objet du différend.

- 6) Dans les 10 jours ouvrables suivant la réception de la liste visée à l'alinéa 5) de la CG8.8.4, chaque partie se conforme aux instructions accompagnant la liste et remet sa réponse au coordonnateur.
- 7) Dans les 2 jours ouvrables suivant la réception des réponses, le coordonnateur sélectionne le médiateur qui aura obtenu le rang le plus élevé du classement commun des deux parties, à titre de médiateur de projet aux fins du contrat.
- 8) En cas d'égalité, le coordonnateur consulte les deux parties afin qu'elles réévaluent leur choix pour l'aider à sélectionner le médiateur de projet qu'il leur est acceptable. Si les parties ne peuvent s'entendre, le coordonnateur leur remet une deuxième liste de médiateurs, et la procédure est reprise.
- 9) Si les parties n'ont pas antérieurement conclu un contrat avec un médiateur de projet mutuellement acceptable, le coordonnateur déploiera les efforts raisonnables pour négocier en leur nom un contrat avec un médiateur de projet acceptable aux deux parties, qui incorpore les articles des présentes règles ou s'y conforme. En cas d'échec des négociations ou si, pour une autre raison, la personne ne veut ou ne peut conclure un contrat afin d'agir comme médiateur de projet, le coordonnateur répète le même processus avec le deuxième médiateur.
- 10) En cas de réussite des négociations visées à l'alinéa 9) de la CG8.8.4, les parties conviennent de conclure un contrat avec le médiateur de projet choisi, lequel est rédigé par le coordonnateur et en accord avec les parties.
- 11) À la signature du contrat avec le médiateur de projet visé à l'alinéa 10) de la CG8.8.4, le coordonnateur remet à ce dernier des exemplaires des documents visés à l'alinéa 3) de la CG8.8.4.

CG8.8.5 Confidentialité

- 1) Sous réserve de l'alinéa 2) de la CG8.8.5 et sauf entente contraire écrite des parties, le médiateur de projet, les parties et leurs conseillers juridiques ou représentants protègent la confidentialité de toutes les questions et de tous les documents divulgués pendant la médiation sauf si leur divulgation est nécessaire à la mise en œuvre de toute entente conclue entre les parties ou est exigée par la loi.
- 2) La recevabilité ou divulgation d'un élément de preuve qui peut être autrement reçu en preuve ou dont la production peut être exigée dans le cadre d'une procédure arbitrale ou judiciaire, n'est pas affectée par l'utilisation de cet élément de preuve dans le cadre du processus de médiation.
- 3) Aucune des parties ne peut faire une transcription, dresser un procès-verbal ou documenter autrement une séance de médiation.
- 4) Les notes personnelles et les avis écrits du médiateur de projet consignés relativement à la médiation sont sa propriété et sous son contrôle exclusifs, sont confidentiels et ne peuvent être utilisés dans aucune procédure ultérieure entre les parties ou, s'ils sont contraires à l'intérêt de la partie intéressée, sans l'autorisation écrite expresse de celle-ci.

- 5) L'échange de tout renseignement pendant la procédure de médiation, par quelque moyen que ce soit, est sous toute réserve et lesdits renseignements sont considérés par les parties et leurs représentants comme étant confidentiels, sauf disposition contraire de la loi.

CG8.8.6 Date et lieu de la médiation

- 1) Le médiateur de projet, de concert avec les parties, fixe les dates, heures et lieux des séances de médiation le plus tôt possible, tenant compte que, sous réserve d'entente contraire des parties, il n'a que 10 jours ouvrables pour tenter de régler le différend.

CG8.8.7 Représentation

- 1) Lors d'une séance de médiation, les représentants des parties peuvent être accompagnés d'un conseiller juridique ou de toute autre personne.
- 2) Si le médiateur de projet est un avocat, il ne peut offrir de conseils juridiques à une partie durant la séance de médiation, mais il peut lui recommander d'obtenir l'avis d'un avocat indépendant avant de finaliser un arrangement à l'amiable.

CG8.8.8 Procédures

- 1) Les parties conviennent d'échanger tous les faits, renseignements et documents sur lesquels elles ont l'intention de fonder leur présentation orale ou écrite, pendant la médiation. Cet échange se fait au plus tard 2 jours ouvrables avant la date d'une séance de médiation.
- 2) Le médiateur de projet est libre de rencontrer les parties individuellement, pendant une séance de médiation, s'il estime que cela peut accroître les chances d'un règlement par voie de médiation, et l'une ou l'autre des parties peut demander à le rencontrer individuellement en tout temps.
- 3) Les parties peuvent s'entendre pour prolonger la période de 10 jours ouvrables disponibles pour régler le différend par voie de médiation, et le médiateur de projet consigne cette entente par écrit.

CG8.8.9 Accord de règlement

- 1) Les parties consignent par écrit tout accord de règlement qu'elles ont conclu, avec suffisamment de détails afin que les parties comprennent clairement:
 - a) les questions réglées,
 - b) les obligations assumées par chaque partie, incluant les critères visant à déterminer si et quand ces obligations ont été exécutées,
 - c) les conséquences de l'omission d'observer l'accord conclu par les parties.
- 2) Les parties conviennent d'exécuter l'accord de règlement dans les meilleurs délais et, à tout le moins, dans les délais prévus par l'accord de règlement.

CG8.8.10 Fin de la médiation

- 1) L'une des parties peut se retirer de la médiation en tout temps, sans raison, et le médiateur de projet remet alors à chacune d'elles un avis écrit mettant fin à la négociation par voie de médiation et indiquant la date d'effet de la clôture de la médiation.
- 2) Lorsque, de l'avis du médiateur de projet, l'une des parties n'agit pas de bonne foi ou n'observe pas les conditions des présentes règles, ou s'il estime, durant la négociation par voie de médiation, que la poursuite des négociations ne permettra pas de résoudre les questions encore en litige, il peut mettre fin à la négociation en remettant aux parties un avis écrit de clôture, y indiquant ses motifs et la date d'effet de la clôture de la médiation.
- 3) Lorsqu'un différend n'est pas réglé dans les 10 jours ouvrables ou une période plus longue convenue par les parties, le médiateur de projet met fin à la médiation en remettant aux parties un avis écrit indiquant la date d'effet de la clôture de la médiation.

CG8.8.11 Frais

- 1) Les parties conviennent d'assumer chacune les frais de leurs propres représentants et conseillers, y compris leurs frais de déplacement et de séjour. Les honoraires et les dépenses du médiateur de projet ainsi que tous les frais généraux liés à la médiation, comme les frais de location de salles de réunion, sont assumés à parts égales entre les parties.

CG8.8.12 Procédures subséquentes

- 1) Les parties ne peuvent invoquer ou produire en preuve, dans une procédure arbitrale ou judiciaire, que cette procédure soit liée ou non à l'objet de la médiation,
 - a) un document de l'autre partie qui ne peut par ailleurs être produit dans le cadre de cette procédure,
 - b) des opinions exprimées ou des suggestions faites par une partie à l'égard du règlement possible des questions en litige,
 - c) un aveu fait par une partie, pendant la médiation, à moins que la partie ayant fait l'aveu y ait expressément consenti,
 - d) le fait qu'une partie a indiqué sa volonté de faire ou d'accepter une proposition ou une recommandation de règlement.
- 2) Le médiateur de projet ne peut représenter une des parties ni témoigner pour celle-ci, dans une enquête, action ou procédure ultérieure relative aux questions faisant l'objet de la médiation.
- 3) Le médiateur de projet ne peut être assigné pour témoigner relativement
 - a) à son rôle dans la médiation,
 - b) aux questions en litige dans la médiation, dans une enquête, action ou procédure ultérieure, et les parties conviennent de s'opposer vigoureusement à l'assignation du médiateur.

CG9 GARANTIE CONTRACTUELLE**CG9.1 OBLIGATION DE DÉPOSER UNE GARANTIE CONTRACTUELLE****CG9.2 TYPES ET MONTANTS DE LA GARANTIE CONTRACTUELLE****CG9.1 OBLIGATION DE DÉPOSER UNE GARANTIE CONTRACTUELLE**

- 1) L'entrepreneur doit, à ses frais et dans les quatorze (14) jours suivant la réception d'un avis confirmant que le Canada accepte son offre, obtenir et déposer auprès du Canada une garantie contractuelle sous l'une ou plusieurs des formes prescrites dans la clause CG9.2 (TYPES ET MONTANTS DE LA GARANTIE CONTRACTUELLE).
- 2) Si la totalité ou une partie de la garantie contractuelle déposée se présente sous la forme d'un dépôt de garantie, cette garantie doit être conservée et traitée conformément à la clause CG5.13 (REMISE DU DÉPÔT DE GARANTIE) et à la clause CG7.4 (DÉPÔT DE GARANTIE – CONFISCATION OU REMISE).
- 3) Si une partie de la garantie contractuelle déposée se présente sous la forme d'un cautionnement de paiement de la main-d'œuvre et des matériaux, l'entrepreneur doit en afficher une copie à l'emplacement des travaux.
- 4) Le dépôt de la garantie contractuelle, selon les modalités précisées dans les présentes, constitue une des conditions préalables à l'autorisation du premier paiement progressif.

CG9.2 TYPES ET MONTANTS DE LA GARANTIE CONTRACTUELLE

- 1) L'entrepreneur doit déposer auprès du Canada soit a) soit b) :
 - a) un cautionnement d'exécution et un cautionnement de paiement de la main-d'œuvre et des matériaux, représentant chacun au moins 50 % du montant du contrat;
 - b) un dépôt de garantie ou une lettre de crédit irrévocable représentant au moins 20 % du montant du contrat.
- 2) Le cautionnement d'exécution et le cautionnement de paiement de la main-d'œuvre et des matériaux mentionnés au paragraphe 1) de la clause CG9.2 doivent être présentés sur un formulaire approuvé par le Canada et provenir d'une compagnie de cautionnement reconnue par le Canada.
 - a) Le formulaire approuvé pour le cautionnement d'exécution est affiché sur le site Web suivant :
<http://www.tbs-sct.gc.ca/pol/doc-fra.aspx?id=14494§ion=text#appS>
 - b) Le formulaire approuvé pour le cautionnement du paiement de la main-d'œuvre et des matériaux est affiché sur le site Web suivant : <http://www.tbs-sct.gc.ca/pol/doc-fra.aspx?id=14494§ion=text#appS>;
 - c) La liste des compagnies de cautionnement reconnues est affichée sur le site Web suivant :
<http://www.tbs-sct.gc.ca/pol/doc-fra.aspx?id=14494§ion=text#appL>

- 3) Le dépôt de garantie mentionné à l'alinéa 1b) de la clause CG9.2 consiste en :
- a) une lettre de change, une traite bancaire ou un mandat de poste à l'ordre du Receveur général du Canada et certifié par une institution financière agréée ou fourni par une institution financière approuvée sur son propre compte; ou;
 - b) des obligations du gouvernement du Canada ou des obligations garanties inconditionnellement quant au capital et aux intérêts par le gouvernement du Canada.
- 4) Aux fins de l'alinéa 3a) de la clause CG9.2 :
- a) une lettre de change est un ordre inconditionnel donné par écrit par l'entrepreneur à une institution financière agréée et obligeant ladite institution à verser, sur demande et à une certaine date, une certaine somme au receveur général du Canada ou à l'ordre de ce dernier;
 - b) si une lettre de change, une traite bancaire ou un mandat de poste est certifié ou tiré par une institution financière ou une institution autre qu'une banque à charte, il doit être accompagné d'une lettre ou d'une attestation estampillée confirmant que l'institution financière appartient à au moins l'une des catégories mentionnées à l'alinéa 4c) de la clause CG9.2;
 - c) une institution financière agréée est :
 - i. une société ou une institution membre de l'Association canadienne des paiements tel que défini dans la [Loi canadienne sur les paiements](#);
 - ii. une société qui accepte des dépôts assurés par la Société d'assurance-dépôts du Canada ou par l'Autorité des marchés financiers jusqu'au maximum permis par la loi;
 - iii. une société qui accepte du public des dépôts dont le remboursement est garanti par Sa Majesté au nom d'une province;
 - iv. une société, une association ou une fédération constituée ou organisée comme caisse de crédit ou société coopérative de crédit, qui se conforme aux exigences d'une caisse de crédit, lesquelles sont décrites de façon plus précise au paragraphe 137(6) de la [Loi de l'impôt sur le revenu](#); ou
 - v. la Société canadienne des postes.
- 5) Les obligations mentionnées à l'alinéa 3b) de la clause CG9.2 doivent être fournies à leur valeur courante sur le marché à la date du contrat et être :
- a) payables au porteur;
 - b) accompagnées d'un document de transfert dûment signé de transfert des obligations au receveur général du Canada sous la forme prescrite par le *Règlement sur les obligations intérieures du Canada*; ou
 - c) enregistrées quant au capital ou quant au capital et aux intérêts au nom du receveur général du Canada, conformément au *Règlement sur les obligations intérieures du Canada*.
- 6) La lettre de crédit irrévocable mentionnée à l'alinéa 1b) de la clause CG9.2 doit :

- a) constituer une disposition, quelle que soit sa désignation ou description, en vertu de laquelle une institution financière (l'« émetteur »), agissant à la demande et selon les instructions d'un client (le « requérant »), ou en son propre nom :
 - i. doit verser un paiement au Canada ou l'établir à son ordre, à titre de bénéficiaire;
 - ii. doit accepter et payer les lettres de change tirées par le Canada;
 - iii. autorise une autre institution financière à effectuer un tel paiement ou à accepter et à payer lesdites lettres de change; ou
 - iv. autorise une autre institution financière à négocier à la suite d'une demande écrite de paiement, à condition que les termes et conditions de la lettre de crédit soient respectées;
- b) indiquer le montant nominal que l'on peut tirer;
- c) préciser sa date d'expiration;
- d) prévoir le paiement à vue à l'ordre du receveur général du Canada à partir de la lettre de change de l'institution financière sur présentation d'une demande écrite de paiement signée par le Canada;
- e) prévoir que plus d'une demande écrite de paiement puisse être présentée à condition que la somme de ces demandes ne dépasse pas la valeur nominale de la lettre de crédit;
- f) prévoir son assujettissement aux *Règles et usances (usages) uniformes (RUU) relatives aux crédits documentaires* de la Chambre de commerce internationale (CCI), version de 2007, publication de la CCI n° 600. En vertu des *Règles et usances (usages) uniformes (RUU) relatives aux crédits documentaires* de la CCI, un crédit est irrévocable même s'il n'y a aucune indication à cet égard;
- g) être émise ou confirmée par une institution financière agréée sur son papier à en-tête, dans l'une ou l'autre des langues officielles, avec une mise en page à la discrétion de l'émetteur ou du confirmateur.

Conditions générales (CG) 10 – Assurances

CG10.1 POLICES D'ASSURANCE

CG10.2 INDEMNITÉ D'ASSURANCE

CG10.1 POLICES D'ASSURANCE

- 1) L'entrepreneur souscrit et maintient, à ses propres frais, des polices d'assurance relativement aux travaux et en fournit la preuve au Canada conformément aux exigences des « Conditions d'assurance ».
- 2) Les polices d'assurance mentionnées à l'alinéa 1) de la CG10.1 doivent être:
 - a) en la forme et nature, au montant, pour la durée et suivant les termes et conditions prévus aux « Conditions d'assurance » et
 - b) prévoir le remboursement des demandes de règlement, conformément à la CG10.2, « Indemnité d'assurance ».

CG10.2 INDEMNITE D'ASSURANCE

- 1) Dans le cas d'une demande de règlement en vertu d'une police d'assurance tous risques chantier (y compris les installations) que maintient l'entrepreneur conformément à la CG10.1, « Polices d'assurance », les sommes dues à l'égard d'un sinistre seront remboursées directement au Canada, et
 - a) les sommes ainsi versées seront retenues par le Canada aux fins du contrat;
ou
 - b) si le Canada en décide ainsi, seront conservées par le Canada, et le cas échéant, deviendront sa propriété de façon absolue.
- 2) Dans le cas d'une demande de règlement en vertu d'une police responsabilité civile générale que maintient l'entrepreneur conformément à la CG10.1, « Polices d'assurance », l'assureur remboursera directement au demandeur les sommes dues à l'égard d'un sinistre.
- 3) Si le Canada choisit conformément à l'alinéa 1) de la CG10.2 de conserver l'indemnité d'assurance, il peut faire effectuer une vérification de la comptabilité de l'entrepreneur et du Canada relativement à la partie des travaux perdue ou endommagée, afin d'établir la différence, s'il en est, entre:
 - a) le total du montant des pertes ou dommages subis par le Canada, incluant tous frais encourus pour le déblaiement et le nettoyage des travaux et leur emplacement et de toute autre somme payable par l'entrepreneur au Canada en vertu du contrat, moins toute somme retenue conformément au sous-alinéa 1)b) de la CG10.2,
 - b) l'ensemble des sommes payables par le Canada à l'entrepreneur en vertu du contrat à la date où la perte ou les dommages ont été subis.
- 4) Toute différence établie conformément à l'alinéa 3) de la CG10.2 doit être payée sans délai par la partie débitrice à la partie créancière.

- 5) Suite au paiement prévu à l'alinéa 4) de la CG10.2, le Canada et l'entrepreneur sont réputés libérés de tous droits et obligations en vertu du contrat, mais seulement à l'égard de la partie des travaux qui a fait l'objet d'une vérification mentionnée à l'alinéa 3) de la CG10.2.
- 6) S'il n'est pas exercé de choix en vertu du sous-alinéa 1)b) de la CG10.2, l'entrepreneur, sous réserve de l'alinéa 7) de la CG10.2, déblaie et nettoie les travaux et leur emplacement et il restaure et remplace à ses frais la partie des travaux qui a été perdue ou endommagée, comme si ces travaux n'avaient pas encore été exécutés.
- 7) Lorsque l'entrepreneur exécute les obligations prévues à l'alinéa 6) de la CG10.2, le Canada lui rembourse, jusqu'à concurrence des sommes mentionnées à l'alinéa 1) de la CG10.2 et à même lesdites sommes, les frais de déblaiement, nettoyage, restauration et remplacement en question.
- 8) Sous réserve de l'alinéa 7) de la CG10.2, tout paiement par le Canada en exécution des obligations prévue à l'alinéa 7) de la CG10.2 est effectué conformément aux dispositions du contrat, mais chaque paiement doit représenter 100p. 100 du montant réclamé, nonobstant les sous-alinéas 3)a) et 3)b) de la CG5.4, « Paiement progressif ».



Annexe « E »

SPÉCIFICATIONS TECHNIQUES & PLANS

PROJECT MANUAL
Including Specifications for
Agriculture & Agri-Food Canada
Pathology Lab Retrofit
Building #25
Brookfield Road, St. John's, NL

"Issued for Tender"

Agriculture & Agri-Food Canada
Pathology Lab Retrofit
Building #25
Brookfield Road, St. John's, NL

Section COVERPAGE
Page 1
11/06/2015

OWNER: Agriculture & Agri-Food Canada
440 University Avenue
Charlottetown, PE C1A 4N6

PRIME CONSULTANT: Architecture49 Inc.
Architectural: 341 Freshwater Road, Suite 202
St. John's, NL A1B 1C4

MECHANICAL/ELECTRICAL
CONSULTANT: WSP Canada Inc.
341 Freshwater Road, Suite 202
St. John's, NL A1B 1C4

A49 Project No.: 15-174
PWGSC Project No.: 1516-143110-P07
Date: November 6, 2015
"Issued Tender"

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Appendix 'A'

- Asbestos Management Plan by AMEC Earth & Environmental, dated February 23, 2007

Appendix 'B'

- Asbestos Report AAFC, Building 25

List of Drawings

Architectural

- A1-R0 General Notes and Key Plan
- A2-R0 Existing/Demolition/New Level 1 Partial Floor Plans
- A3-R0 Casework Elevations

Mechanical

- M1-R0 Demolition Level 1 Partial Floor Plan
- M2-R0 New Level 1 Partial Floor Plan

Electrical

- E1-R0 Existing / Demolition / New Level 1 Partial Floor Plans

Agriculture and Agri-Food Canada (AAFC)

DISCIPLINE

SIGNATURE

DATE

STAMP

Architectural
Specifications:

Peter Jackson NOV 6 2015
approved



Mechanical
Specifications:

Russell Jones, Nov 6, 2015
approved



Electrical
Specifications:

Craig MacIntyre Nov. 6TH 2015
approved



Tender
AAFC Project Mgr:

approved

1.1 DESCRIPTION
OF WORK

- .1 In general work of this contract consists of interior demolition and new construction of a laboratory of approximately 30 m² area located within the existing building 25 at the Atlantic Cool Crop Research Facility, Brookfield Road, St. John's, NL. Demolition generally includes interior finishes, ceilings, millwork, mechanical and electrical. Existing construction contains asbestos, manage and abate to applicable codes and standards and to section 02 82 00.02 refer also to Appendix 'A' - Asbestos Management Plan.
- .2 Re-construction generally encompasses new partitions, finishes, and ceilings, laboratory millwork, mechanical and electrical systems.
- .3 The overall facility is occupied, however the work areas will be vacant during the work. Certain restrictions apply to work hours provision of noise, vibration and dirt generating activities. Removal of demolished materials from the building may have to be carried out outside of business hours, at night and on weekends.

1.2 SITE
FAMILIARIZATION

- .1 Before submitting a bid, it is recommended that bidders visit the site to review and verify the form, nature and extent of the work, materials needed, the means of access and temporary facilities required to perform the work.
- .2 Contact and obtain permission from the Departmental Representative before carrying out such site visit.

1.3 WORK SCHEDULE

- .1 Submit within 7 calendar days after contract award, a construction schedule showing commencement and completion of all work within the time stated in the accepted bid.
- .2 Provide sufficient details in Schedule to clearly illustrate the entire implementation plan to achieve completion of the work on time and to monitor efficient use of resources and the progress of work in relation to established milestones.

- .3 Work Schedule shall include:
 - .1 Bar (Gantt) Chart indicating all work activities, their anticipated duration and planned dates for achieving major milestones and;
 - .2 Written narrative for key elements of work providing sufficient information to demonstrate a reasonable implementation plan.
- .4 Schedule work in cooperation with and to the approval of the Departmental Representative.
- .5 Submit updates when requested by Departmental Representative.

1.4 WORK
RESTRICTIONS

- .1 Mobilization to project site is to commence immediately after acceptance of bid and submission of Site Specific Safety Plan, unless otherwise agreed in writing by Departmental Representative.
- .2 Project work on site is to commence as soon as possible, with a continuous reasonable work force, unless otherwise agreed in writing by Departmental Representative.
- .3 Facility operations shall continue during the work. Schedule and sequence work in cooperation with operators. Provide temporary security barriers to maintain existing level of security. After hours and weekend work may be necessary. All costs to be included in the tender price.

1.5 CODES AND
STANDARDS

- .1 Perform work in accordance with the National Building Code of Canada (of latest edition as adopted by the province and municipality of the work location) and any other code of provincial or local application, including all amendments up to the bid closing date, provided that in any case of conflict or discrepancy the more stringent requirement shall apply.
- .2 Perform electrical work in accordance with CSA C22.1-2006. Use only licensed electricians to carry out such work.
- .3 Materials and workmanship must meet or exceed

requirements of specified standards, codes and referenced documents.

1.6 INTERPRETATION
OF DOCUMENTS

- .1 Supplementary to the General Conditions of the Contract, the Division 01 sections take precedence over the technical specification sections in other Divisions of the Specification Manual.

1.7 TERM ENGINEER

- .1 Unless specifically stated otherwise, the term Engineer where used in the Specifications and on the Drawings shall mean the Departmental Representative and vice versa as defined in the General Conditions of the Contract.

1.8 DOCUMENTS
REQUIRED

- .1 Maintain at job site, one copy each of the following:
- .1 Contract Drawings, Specifications, addenda and reviewed shop drawings.
 - .2 Work Schedule
 - .3 Health and Safety Plan and other safety documents related to the Work.
 - .4 Shop Drawings.
 - .5 Change Orders
 - .6 Field test reports.
 - .7 Reports received from various inspection authorities.
 - .8 Permits and regulatory approvals and requirements.
 - .9 Other documents as stipulated in the contract documents.

1.9 PERMITS and
AUTHORITIES INSPECTIONS

- .1 Obtain and pay for building permit, authorities inspections, compliance certificates, licenses and other applicable permits as required by municipal, provincial and federal authorities to perform the Work.
- .2 Provide appropriate notifications of project to provincial and other authorities having jurisdiction.
- .3 Upon request, submit copy of applications made and permits received to Departmental

Representative.

- 1.10 PROJECT MEETINGS .1 Project meetings will be held during the course of the work at least bi-weekly.
- .2 Arrange project meetings and assume responsibility for setting times and recording minutes. Distribute minutes within five (5) days of meeting.
- .3 Have Superintendent and subcontractors in attendance.
- 1.11 SETTING OUT WORK .1 Assume full responsibility for and execute complete layout of work.
- 1.12 ALTERATIONS TO EXISTING BUILDING .1 Execute work with least possible interference or disturbance to Facility operations, occupants.
- .2 Provide barricades, barriers and warning signs around work areas and adjacent to areas in use by Facility occupants and the Public.
- .1 Signage to be professionally made with bilingual message or use internationally recognized graphic symbols.
- .3 Do not block fire exits and emergency escape routes. Ensure free egress from buildings at all times during the work.
- .4 Follow Departmental Representative's directives in meeting above requirements.
- 1.13 WORK ACCESS .1 Use only designated roads, walkways, entrance doors and corridors designated by Departmental Representative to gain access to work areas.
- .2 Restrict movement of workers to immediate work areas. Plan work to minimize need for workers to circulate inside buildings of the Facility.
- 1.14 BUILDING SECURITY .1 Keys, door security access cards building security access codes security passes may be issued to the Contractor, at the discretion of

the Departmental Representative, to open locked doors and access secure areas at the site for work purposes.

- .2 Follow all instructions in regards to use, care and disposition of all keys and security cards issued.
- .3 Unless indicated otherwise, keys and security access devices given to Contractor's Superintendent shall be for his/her sole possession shall not under any circumstances be shared with any worker or subcontractor.
- .4 Do not, under any circumstances, make or allow workers to make duplicates of keys issued.
- .5 Immediately report to Departmental Representative any lost, stolen or destroyed keys and access cards.
- .6 At end of project, return all security devices to Departmental Representative.
- .7 Ensure building and other facilities of site are kept secure at all times. Lock all doors, activate building security system at end of each workday.
- .8 Cost incurred from police and security surveillance company resulting from falsely setting off security alarm system will be charged to the Contractor in the form of a financial assessment against the Contract.

1.15 TEMPORARY FACILITIES

- .1 Existing water and power supply may be used for construction at no cost. Departmental Representative will advise of the supply location.
 - .1 Be responsible for transporting such services to work areas.
- .2 Store materials on site only in location(s) within the work area and on site as directed by Departmental Representative.
- .3 Dust Barriers:
 - .1 In addition to temporary walls and doors,

erect full height dust tight partitions to separate works areas from others areas of the building.

.2 Provide additional dust covers as required for major dust generating work to stop propagation of dust beyond work areas.

.3 Obtain Departmental Representative's approval beforehand on the proposed dust barrier assembly and location.

.4 Sanitary facilities are available on site.

1.16 HEATING AND VENTILATION

.1 Maintain existing heating, ventilation and air conditioning system operational within Occupied Areas during the entire course of work.

.2 Existing heating system may be used for construction purposes.

.3 Shut-down air distribution system in work areas from remainder of building. Seal ductwork, exhaust diffusers and grilles in work areas to stop spread of dust and fumes to Occupied areas of Facility.

.4 Provide suitable equipment and ventilate work areas as required to:

.1 Facilitate progress of work.

.2 Provide adequate ventilation to meet health regulations for safe working environment.

.3 Prevent accumulations of dust, fumes, mists, vapours or gases within building.

.4 Prevent harmful accumulation of hazardous substances into atmosphere.

.5 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.

.5 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.

.6 Maintain strict supervision of operation of temporary ventilating equipment to:

.1 Conform with applicable codes and standards.

.2 Enforce safe practices.

.3 Prevent abuse of existing services provided by Departmental Representative.

1.17 CUTTING,
FITTING AND
PATCHING

- .1 Execute cutting fitting and patching required to make work fit properly.
- .2 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.
- .3 Do not cut, bore, or sleeve load-bearing members.
- .4 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .5 Fit work airtight to pipes, sleeves, ducts, conduits and other services penetrating new or existing condition.
- .6 Openings made in existing fire rated walls, floors and ceilings shall be filled with purpose made, ULC approved, fire stopping materials and smoke seals.

1.18 EXISTING
SERVICES

- .1 Before commencing work, investigate and establish location and extent of concealed and buried service lines in area of work. Notify Departmental Representative of findings.
- .2 Where work involves breaking into, connecting or shutting down of existing services, obtain approval beforehand from Departmental Representative. Schedule and carryout work at time as directed by Departmental Representative with minimum of disturbance to Facility and site operations. Adhere to approved schedule and provide notice to affected parties.
- .3 Comply with electrical safety requirements specified in Section 01 35 25.
- .4 Protect, relocate or maintain existing active services as required. Where inactive services are encountered, cap off in manner approved by authority having jurisdiction over service. Record location of maintained, rerouted and abandoned service lines.

1.19 MATERIALS

- .1 Use new material and equipment unless otherwise

specified.

- .2 Select and use products, adhesives and sealants which have:
 - .1 No or very low off-gassing levels.
 - .2 No or very little VOC content.
 - .3 Are the least noxious and emit smallest amount of fumes, gases and strong odors during their cure period.
 - .4 Minimal chemical, physical or biological elements or agents in their composition which adversely affect human health and welfare or which degrades the environment.
- .3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
- .4 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.
- .5 Within 7 days of written request by Departmental Representative, submit following information for any materials and products proposed for supply:
 - .1 Name and Address of manufacturer.
 - .2 Trade Name, model and catalogue number.
 - .3 Performance, descriptive and test data indicating compliance with specified requirements.
 - .4 Manufacturer's installation or application instructions.
 - .5 Evidence of arrangements to procure.
 - .6 Evidence of manufacturer delivery problems or unforeseen delays.
- .6 Obtain manufacturer's printed installation instructions and comply by such directives for installation of materials.
- .7 Notify Departmental Representative in writing of any conflict between Specifications and manufacturer's instructions, so that Departmental Representative will designate which document is to be followed.
- .8 Deliver, store and protect materials on site against theft, vandalism, soiling and climatic

damage. Provide additional suitable cover beyond manufacturer's packaging where required.

- .9 Touch-up factory finishes damaged by the Work. Use touch-up materials to match original. Do not paint over name plates.

1.20 FASTENERS

- .1 Provide metal fastenings and accessories in same texture, colour and finish as base metal in which they occur unless indicated otherwise. Prevent electrolytic action between dissimilar metals.
- .2 Use non-corrosive heavy duty fasteners, anchors and spacers for all fastening conditions. Space fasteners within limits of load bearing or shear capacity. Ensure positive permanent anchorage.

1.21 HAZARDOUS MATERIALS

- .1 The work area and other areas of the building construction containing asbestos. Abate and manage to applicable codes and standards. Refer also to specification section 02 82 00.02 and Appendix 'A' - Asbestos Management Plan.
- .2 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling and storage, and disposal of hazardous materials.
- .3 Do not leave and store flammable and hazardous materials on site. Remove of site at end of each work shift.
- .4 Keep MSDS data sheets for all products brought on site. Provide copy to Departmental Representative.
- .5 Asbestos Discovery: Demolition of spray or trowel-applied asbestos can be hazardous to health. Should material resembling spray or trowel-applied asbestos not already noted be encountered in course of work, immediately stop work and notify Departmental Representative. Do not proceed with relevant work until written instructions have been received from Departmental Representative.

1.22 ENVIRONMENTAL
PROTECTION

- .1 Have appropriate emergency spill response equipment and rapid clean-up kit on site. Provide personal protective equipment required for clean-up.
- .2 Report all spills of petroleum, hazardous materials and accidents having potential of polluting the environment to Federal and Provincial Department of the Environment and to the Departmental Representative.
- .3 Do not pump water containing suspended materials into sewer or drainage systems. Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with governing regulations and requirements.
- .4 Do not dump hazardous materials and polluted water containing suspended hazardous products into sewers and drainage systems. Dispose in accordance with federal and provincial environmental regulations and recommended procedures.
- .5 Fires and burning of waste and rubbish on site is prohibited.

1.23 INSPECTION
AND TESTING

- .1 Give timely notice requesting inspection of work designated for inspections, special tests or approvals by Departmental Representative or by inspection authorities having jurisdiction.
- .2 In accordance with the General Conditions, Departmental Representative may order any part of work to be examined if work is suspected to be not in accordance with Contract Documents.
- .3 Rejected Work: removal and replace defective work, whether result of poor workmanship, use of defective or damaged products and whether incorporated in work or not, which has been identified by Departmental Representative as failing to conform to Contract Documents.
- .4 Tests on materials and equipment, is the responsibility of the Contractor except where specified otherwise.
 - .1 Provide all necessary instruments,

equipment and qualified personnel to perform tests.

.2 At completion of tests, turn over two sets of fully documented tests reports to the Departmental Representative.

.5 Unspecified tests may also be made by Departmental Representative. The costs of these tests will be paid for by the Departmental Representative.

.6 Where tests or inspection reveal work not in accordance with the Contract, the Contractor shall bear the cost of additional tests and inspections incurred by Departmental Representative as required to verify the acceptability of corrected work.

.7 If Contractor covers or permits to be covered work designated for special tests, inspections or approvals before such is made, uncover work until particular inspections or tests have been fully and satisfactorily completed and until such time as Departmental Representative gives permission to proceed. Pay costs to uncover and make good such work.

1.24 CLEANING

.1 As work progresses, maintain work areas and site in a tidy, clean and dust free condition at all times.

.2 Provide on-site containers for placement of waste and debris. Loose and scattered waste, debris and materials will not be allowed on site.

.3 Remove and dispose of waste and debris off site at end of each workday.

.4 Clean interior of building used by workers and dirtied by work.

.1 Wash walls, floors and other surfaces as needed.

.2 Vacuum carpets.

.3 Dust all furnishings.

.5 At project completion, conduct final cleaning of areas affected by work.

.1 Remove dust and dirt from all surfaces with recommended cleaning agents.

- .2 Wash and polish finish surfaces.
- .3 Wash clean pavements, rake clean grassed areas used.

.6 Use competent persons experienced in commercial cleaning operations.

.7 Meager attempt at controlling dust and ineffective cleaning will not be tolerated.

.1 Failure to provide effective dust control and/or perform proper cleaning by the Contractor will result in the Departmental Representative to proceed and obtain an independent commercial cleaning agency to perform all required cleaning to the satisfaction of the Facility tenant for which the costs will be charged to the Contractor in the form of a financial assessment against the Contract.

1.25 WASTE
MANAGEMENT

.1 Dispose of waste, debris and product packaging in accordance with municipal and provincial laws and regulations.

.2 Plan work to minimize waste, maximize reuse and recycling of materials and to divert the greatest amount of waste from being disposed into landfill sites.

.3 Separate waste, debris, leftover material, redundant equipment and product packaging at source, place into pre-planned waste categories during the course of the work and send to recycling facilities to maximum extent possible.

.4 Store, handle and dispose of hazardous waste in covered, locked steel dumpsters in accordance with applicable federal, provincial and municipal laws, regulations, codes and guidelines.

.5 Upon request, submit written list of items salvaged and sent to recycling facility

1.26 COST
BREAKDOWN

.1 Before submitting first progress claim, submit a breakdown of the contract price in format and detail as directed by Departmental Representative.

1.27 ACCEPTANCE

- .1 Notify Departmental Representative in writing when work is complete and ready for final inspection.
 - .1 Make a check of all work and correct all discrepancies, defects and outstanding work before sending notification.
- .2 Accompany Departmental Representative during final inspection.
- .3 Rectify all defects, faults and outstanding items identified by Departmental Representative during inspection.

1.1 SUBMITTALS

- .1 Upon acceptance of bid and prior to commencement of work, submit to Departmental Representative the following work management documents:
 - .1 Work Schedule as specified herein.
 - .2 Shop Drawing Submittal Schedule specified in section 01 33 00
 - .3 Waste Management Plan specified in section 01 74 21
 - .4 Environmental Plan specified in section 01 35 43
 - .5 Health and Safety Plan specified in section 01 35 28.
 - .6 Hot Work Procedures specified in section 01 35 24
 - .7 Dust Control Plan specified in section 01 50 00.
 - .8 List of workers requiring security clearance and those to be placed on Site Security Control list as specified in section 01 35 54.

1.2 WORK SCHEDULE

- .1 Upon acceptance of bid submit:
 - .1 Work schedule within 7 calendar days of contract award.
- .2 Schedule to indicate all calendar dates from commencement to completion of all work within the time stated in the accepted bid.
- .3 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.
- .4 Work schedule content to include as a minimum the following:
 - .1 Bar (GANTT) Charts, indicating all work activities, tasks and other project elements, their anticipated durations, planned dates for achieving key activities and major project milestones supported with;
 - .2 Written narrative on key elements of work illustrated in bar chart, providing sufficient details to demonstrate a reasonable implementation plan for completion of project within designated time.
 - .3 Generally Bar Charts derived from

commercially available computerized project management system are preferred but not mandatory.

- .6 Schedule work in cooperation with the Departmental Representative. Incorporate within Work Schedule, items identified by Departmental Representative during review of schedule.
- .7 Completed schedule shall be approved by Departmental Representative. When approved, take necessary measures to complete work within scheduled time. Do not change schedule without Departmental Representative's approval.
- .8 Ensure that all subtrades and subcontractors are made aware of the work restraints and operational restrictions specified.
- .9 Schedule Updates:
 - .1 Submit on a monthly basis.
 - .2 Provide information and pertinent details explaining reasons for necessary changes to implementation plan.
 - .3 Identify problem areas, anticipated delays, impact on schedule and proposed corrective measures to be taken.
- .10 Departmental Representative will make interim reviews and evaluate progress of work based on approved schedule. Frequency of such reviews will be as decided by Departmental Representative. Address and take corrective measures on items identified by reviews and as directed by Departmental Representative. Update schedule accordingly.
- .11 In every instance, change or deviation from the Work Schedule, no matter how minimal the risk or impact on safety or inconvenience to tenant or public might appear, will be subject to prior review and approval by the Departmental Representative.

1.3 OPERATIONAL RESTRICTIONS

- .1 The Contractor must recognize that building occupants will be affected by implementation of this contract. The Contractor must perform the work with utmost regard to the safety, security and convenience of building occupants and users. All work activities must be planned and scheduled

- with this in mind. The Contractor will not be permitted to disturb any portion of the building without providing temporary facilities as necessary to ensure safe and direct passage through disturbed or otherwise affected areas.
- .2 Contractor to meet with the Departmental Representative on a weekly basis to identify intended work areas, activities and scheduling for the coming week.
 - .3 To assure that construction work may proceed productively without risk to safety of building occupants and the public, and due to the nature of the tenant's operation be aware that certain work of this contract must be carried out during "Off-Hours".
 - .4 Off Hours: means a period of time which is outside the daily operational hours of the tenants of the Facility. For the purposes of this contract, Off-Hours are defined as follows:
 - .1 Weeknight Off-Hours: between the hours of 18:00 and 07:00 for each weekday Monday to Thursday inclusive.
 - .2 Weekend Off-Hours: between the hours of 18:00 Friday evening to 07:00 Monday morning.
 - .3 Dependent on the nature and location of the construction activity and due to an unanticipated operational requirement of the Tenant, certain off-hour periods may be redefined by adjusting the start and end time periods or cancellation of a specific off-hour workshift during the course of the Work.
 - .5 The following work shall be performed during Off-Hours:
 - .1 Erection and dismantling of dust barriers, hoarding or other protective devices to separate areas of Facility occupied and under use by public and tenants from work areas;
 - .2 Asbestos abatement;
 - .3 Demolition of any masonry or concrete inside building;
 - .4 All work involving saw cutting or boring of openings through masonry and concrete walls, floors, ceilings or roof;
 - .5 Work which requires the use of products controlled by WHMIS and for which MSDS sheets indicate toxic or hazardous materials requiring special handling and application procedures;

- .6 Use of materials having high solvent content or other content emitting strong noxious fumes or odours;
 - .7 Removal of demolition debris from the building including cleaning of premises;
 - .8 Cleaning and preparing of occupied areas for daytime use by tenants immediately following an off-hour workshift;
 - .9 Work within a tenant occupied area including corridors, stairwells and other circulation routes under use;
 - .10 Work which requires the temporary disconnection of power and communication services to occupied areas;
 - .11 Testing of fire alarms and other emergency annunciating system;
 - .12 Delivery of materials and equipment from exterior to the interior of building when access routes are located in tenant occupied spaces.
 - .13 Work which creates excessive noise or vibration creating interference with tenant operations.
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- .6 Departmental Representative reserves the right to stop certain daytime work activities, if the nature of that activity generates excessive noise or dust and have Contractor re-schedule that particular work to be performed during the Off-Hour period.
 - .7 Ensure that all trades are aware of the "Off-Hour" requirements of this contract and ensure that any extra costs incurred as a result is included in the Contractor's bid price for the work. No extra cost will be paid due to failure by General Contractor or his sub-contractors to recognize the off-hour requirements and other restrictions specified herein and to include all necessary allowances within their bids.
 - .8 See section 01 35 54 in regards to:
 - .1 Special security requirements which must be observed in the course of work.
 - .2 Provision of security personnel by Contractor as part of the Work.
 - .9 Facility circulation maintained:
 - .1 Ensure that entrances, corridors, stairwells, fire exits and other circulation routes are maintained free and clear providing safe and uninterrupted passage for Facility users

and public at all times during the entire work.

.2 Maintain those areas clean and free of construction materials and equipment. Provide temporary dust barriers and other suitable enclosures to ensure users are not exposed to construction activities and are protected from exposure to dust, noise and hazardous conditions.

.3 Maintain fire escape routes accessible and firefighting access open all times for the duration of the project.

.4 Do not under any circumstances block fire exit doors. Do not leave construction materials or debris in corridors, stairwells building entrances and exits.

.11 Safety Signage:

.1 Provide on site, and erect as required during progress of work, mounted on self-supporting stands, warning the building occupants of construction activities in progress and alerting need to exercise caution in proceeding through disturbed areas of the facility, and directing building occupants through any detours which may be required.

.2 Signage to be professionally printed and mounted on wooden backing, coloured and to express messages as directed by the Departmental Representative.

.3 Generally maximum size of sign should be in the order of 1.0 square meters. Number of signs required will be dependent on number of areas in facility under renovation at any one time.

.4 Include costs for the supply and installation of these signs in the bid price.

.12 Dust and Dirt Control:

.1 See section 01 50 00 and 01 74 11 for dust control and cleaning requirements.

.2 Effectively plan and implement dust control measures and cleaning activities as an integral part of all construction activities. Review all measures with the Departmental Representative before undertaking work, especially for major dust generating activities.

.3 Do not allow demolition debris and construction waste to accumulate on site and contribute to the propagation of dust.

.4 As work progresses, maintain construction areas in a tidy condition at all times. Remove gross dust accumulations by cleaning and vacuuming immediately following the completion

of any major dust generating activity.

.5 Immediately remove all debris and dust from within occupied areas as generated by work therein during a given workshift.

.6 Disconnect and seal-off ductwork of HVAC servicing the construction area to stop spread of dust into other areas of Facility.

.7 Avoid situations and practices which results in dust and dirt being brought from the construction areas or from the exterior and tracked inside the building into occupied areas used by tenants and the public.

.8 Inform workers and make them sensitive to the need for dust and dirt control. Stringently enforce rules and regulations, immediately address non-compliance.

.9 Keep access doors to work areas closed at all times. Use only designated doors for entry or egress.

.13 Work in Occupied Areas:

.1 Where work must be carried out in an occupied area beyond the boundaries of the enclosed construction site, perform such work during the non-operational off-hour periods of the Facility.

.2 Ensure that all dust, dirt, debris, construction waste, materials, tools and equipment are completely removed at the end of each "off-hour" workshift. Clean and reinstate area ready for daytime use by tenant.

.3 Provide temporary dust barriers around immediate work areas and place fabric drop sheets over workstations, equipment and other furnishings located immediately adjacent to such work.

.4 Conduct work in such a way as to minimize the creation of dust and to avoid contaminating areas beyond the immediate location.

.5 Discuss and obtain Departmental Representative's approval beforehand on the type and extent of dust barriers, protective devices and measures needed.

.6 Be responsible for temporarily moving office furnishings, workstations, computer equipment and other objects as needed to gain access and conduct work. Reinstall all dislocated items at end of each workshift making the area operational again.

.7 Disconnect and reconnect any power and communications systems feeding workstations as required.

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- .8 Clean such areas as well as those corridors and routes used to gain entry and access.
 - .14 Cleaning of tenant occupied areas used by Contractor:
 - .1 Clean lobbies, corridors, stairs and other circulation routes used by workers to gain access to work by conducting cleaning, vacuuming and washing of floors, walls and other soiled surfaces.
 - .2 Obtain and pay for the services of a professional cleaning company to perform this cleaning. Cleaning staff shall remain on site one hour beyond the end of each off-hour workshifts to address any Tenant complaints or concerns and carryout additional cleaning functions as directed by Departmental Representative or by a pre-designated person(s) representing the tenant(s).
 - .3 Meager attempts at controlling dust and ineffective unprofessional cleaning procedures will not be tolerated.
 - .4 Failure to provide effective dust control, allowing construction dust and dirt to escape beyond construction areas and contaminate occupied areas and building circulation areas will result in Contractor being ordered to immediately provide professional cleaning services without delay to remedy the situation and conduct all cleaning to the extent as determined by Departmental Representative. Alternatively, Departmental Representative may, at certain times and at own discretion; obtain the services of an independent building cleaning agency when cleaning being provided by Contractor is ineffective or tardy in response. Costs of such services will be charged against Contractor in the form of financial penalties or holdback assessments against the Contract.
 - .15 Ensure that all sub-trades are made aware of and abide by the contents of this section and in particular the work restrictions specified herein due to tenant operational requirements.
- 1.4 PROJECT MEETINGS
- .1 Schedule and administer project meetings, held on a bi-weekly basis, for entire duration of work and more often when directed by Departmental Representative as deemed necessary due to progress of work or particular situation.

- .2 Prepare agenda for meetings.
- .3 Notify participants in writing 4 days in advance of meeting date.
 - .1 Ensure attendance of all subcontractors.
 - .2 Departmental Representative will provide list of other attendees to be notified.
- .4 Hold meetings at project site or where approved by Departmental Representative.
- .5 Preside at meetings and record minutes.
 - .1 Indicate significant proceedings and decisions. Identify action items by parties.
 - .2 Distribute to participants by mail or by facsimile within 5 calendar days after each meeting.
 - .3 Make revisions as directed by Departmental Representative.
 - .4 Departmental Representative will advise whether submission of minutes by Email is acceptable. Decision will be based on compatibility of software among participants.

1.5 WORK
COORDINATION

- .1 The General Contractor is responsible for coordinating the work of the various trades and predetermining where the work of such trades interfaces with each other.
 - .1 Designate one person from own employ having overall responsibility to review contract documents and shop drawings, plan and manage such coordination.
 - .2 Coordinate relocation and reinstallation of owner's existing security equipment with owner so as to permit airport operations and security procedures to continue.
- .2 The General Contractor shall convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required.
 - .1 Provide each trade with the plans and specs of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
 - .2 Develop coordination drawings when deemed required illustrating potential interference between work of various trades and distribute to all affected parties including structural trade.
 - .1 Pay particularly close attention to

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- overhead work above ceilings and within or near to building structural elements.
 - .2 Coordination drawings to identify all building elements, services lines, rough-in points and indicate from where various services are coming.
 - .3 Review coordination drawings at purposely called meetings. Have subcontractors sign-off on drawings and publish minutes of each meeting.
 - .4 Plan and coordinate work in such a way to minimize quantity of service line offsets.
 - .5 Submit copy of coordination drawings and meeting minutes to Departmental Representative for information purposes.
- .3 Submission of shop drawings and ordering of prefabricated equipment or prebuilt components shall only occur once coordination meeting for such items has taken place between trades and all conditions affecting the work of the interfacing trades has been made known and accounted for.
 - .4 Work Cooperation:
 - .1 Ensure cooperation between trades in order to facilitate the general progress of the work and avoid situations of spatial interference.
 - .2 Ensure that each trade provides all other trades reasonable opportunity for the completion of the work and in such a way as to prevent unnecessary delays, cutting, patching and the need to remove and replace completed work.
 - .5 No extra costs to the Contract will be considered by the Departmental Representative as a result of Contractor's failure to effectively coordinate all portions of the Work. Disputes between the various trades as a result of their not being informed of the areas and extent of interface work shall be the sole responsibility of the General Contractor to be resolved at own cost.
- 1.6 OTHER CONTRACTS
- .1 Further contracts may be let during the period that this contract is in progress.
 - .2 Cooperate with other Contractors in carrying out their respective works and carry out all instructions from the Departmental Representative in this regard.
 - .3 Connect properly and coordinate work with that

of other Contractors. If any part of the work under this Contract depends for its proper execution or result upon the work of another Contractor, report promptly to the Departmental Representative, in writing, any defects in the work of such other Contractors as may interfere with the proper execution of this work.

1.1 SUBMITTAL

GENERAL REQUIREMENTS

- .1 Submit shop drawings, product data, samples and other items specified for review by Departmental Representative. PDF submission format is also acceptable.
- .2 Submit sufficient copies for own use plus 3 copies which will be kept by Departmental Representative.
 - .1 Include additional copies for insertion into the O & M manuals specified in section 01 78 00.
- .3 Accompany data with transmittal letter identifying project name, project number, Contractor's name and address, supplier name, description of items and quantity of drawings/data being submitted.
- .4 Allow 14 calendar days for review of shop drawings by Departmental Representative. Note that colours can only be selected after all shop drawings and samples of products requiring colour selections are received by the Departmental Representative.
- .5 Do not proceed with work applicable to shop drawing item until relevant submission has been reviewed by Departmental Representative.
- .6 Submit with reasonable promptness and in orderly sequence so as to allow for Departmental Representative's review and not cause delay in Work. Failure to submit in ample time will not be considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .7 Present data, dimensions and engineering values in SI Metric units.
- .8 Review submittals prior to submission. Ensure that all requirements have been addressed, field dimensions and data have been taken and submittal has been checked and coordinated with work of contract documents.
- .9 Stamp and sign each item of submittal certifying contractor's review and verification of submitted data.

- .10 Submittals not stamped and signed will be returned unexamined by Departmental Representative and considered rejected.

1.2 SHOP DRAWINGS

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, technical product data, brochures and other data which are to be provided by Contractor to illustrate details of a portion of work.
- .2 Shop Drawings Content:
 - .1 Indicate materials, methods of construction, attachment, connections, explanatory notes and other information necessary for completion of work. Where items attach or connect to other items, confirm that all interrelated work has been coordinated, regardless of section or trade from which the adjacent work is being supplied and installed.
 - .2 Supplement manufacturer's standard drawings and literature with additional information to provide details applicable to project.
- .3 Shop Drawings Format:
 - .1 Opaque white prints or photocopies of original drawings or standard drawings modified to clearly illustrate work specific to project requirements. Maximum sheet size to be 1000 x 707 mm.
 - .2 Product data from manufacturer's standard catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products, to be original full colour brochures, clearly marked indicating applicable data and deleting information not applicable to project.
 - .3 Non or poorly legible drawings, photocopies or facsimiles will not be accepted and returned not reviewed.
 - .4 PDF submission format is also acceptable.
- .4 Delete information not applicable to project on all submittals.
- .5 Adjustments or corrections made on shop drawings by Departmental Representative are not intended to change contract price. If adjustments affect value of work, advise Departmental Representative in writing prior to proceeding with work.

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- .6 After Departmental Representative's review, distribute copies.
 - .7 The review of shop drawings by Departmental Representative or by a Consultant or designated person so authorized by the Departmental Representative, is for sole purpose of ascertaining conformance with general concept. This review shall not mean that Canada approves the detail design inherent in the shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of the construction and Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.3 SAMPLES

- .1 Submit samples for items specified in trade sections. Label with origin and intended use.
- .2 Deliver samples to Departmental Representative's office. Do not drop off samples at construction site except for special circumstances pre-approved by Departmental Representative.
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.

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- 1.1 SECTION INCLUDES .1 Fire Safety Requirements
- .2 Hot Work Permit
- .3 Existing Fire Protection and Alarm Systems
- 1.2 RELATED WORK .1 Section 01 35 28 Health and Safety Requirements
- 1.3 REFERENCES .1 Fire Protection Standards issued by Fire Protection Services, Labour Program Division of Service Canada:
- .1 FCC No. 301-June 1982 Standard for Construction Operations.
- .2 FCC No. 302-June 1982 Standard for Welding and Cutting.
- .2 FCC standards may be viewed at:
- .1 <http://www.hrsdc.gc.ca/en/lp/lo/fp/standards/commissioner.shtml>
- .2 Fire Protection Services - Atlantic Region office, Halifax, N.S, Tel. (902) 426-6053.
- 1.4 DEFINITIONS .1 Hot Work defined as:
- .1 Welding work
- .2 Cutting of materials by use of torch or other open flame devices
- .3 Grinding with equipment which produces sparks.
- .4 Use of open flame torches.
- 1.5 SUBMITTALS .1 Submit copy of Hot Work Procedures and sample of Hot Work permit to Departmental Representative for review, within 14 calendar days of acceptance of bid.
- .2 Submit in accordance with section 01 33 00.
- 1.6 FIRE SAFETY REQUIREMENTS .1 Implement and follow fire safety measures during Work. Comply with following:
- .1 National Fire Code.
- .2 Fire Protection Standards FCC 301 and FCC 302.
- .3 Federal and Provincial Occupational Health and Safety Acts and Regulations.
- .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining

the most stringent requirement, Departmental Representative will advise on the course of action to be followed.

1.7 HOT WORK
AUTHORIZATION

- .1 Obtain Departmental Representative's written "Authorization to Proceed" before conducting any form of Hot Work on site.
- .2 To obtain authorization submit to Departmental Representative:
 - .1 Contractor's typewritten Hot Work Procedures to be followed on site as specified below.
 - .2 Description of the type and frequency of Hot Work required.
 - .3 Sample Hot Work Permit to be used.
- .3 Upon review and confirmation that effective fire safety measures will be implemented and followed during performance of hot work, Departmental Representative will give authorization to proceed as follows:
 - .1 Issue one written "Authorization to Proceed" covering the entire project for duration of work or;
 - .2 Subdivide the work into pre-determined, individual activities, each activity requiring a separately written authorization to proceed.
- .4 Requirement for individual authorization will be based on:
 - .1 Nature or phasing of work;
 - .2 Risk to Facility operations;
 - .3 Quantity of various trades needing to perform hot work on project or;
 - .4 Other situation deemed necessary by Departmental Representative to ensure fire safety on premises.
- .5 Do not perform any Hot Work until receipt of Departmental Representative's written "Authorization to Proceed" for that portion of work.
- .6 In tenant occupied Facility, coordinate performance of Hot Work with Facility Manager through the Departmental Representative. When directed, perform Hot Work only during non-operative hours of the Facility. Follow Departmental Representative's directives in this regard.

1.8 HOT WORK
PROCEDURES

- .1 Develop and implement safety procedures and work practices to be followed during the performance of Hot Work.
- .2 Hot Work Procedures to include:
 - .1 Requirement to perform hazard assessment of site and immediate work area beforehand for each hot work event in accordance with Safety Plan specified in section 01 35 28.
 - .2 Use of a Hot Work Permit system with individually written permit issued by Contractor's Superintendent to specific worker or subcontractor granting permission to proceed with Hot Work.
 - .3 Permit required for each Hot Work event.
 - .4 Designation of a person on site as a Fire Safety Watcher responsible to conduct a fire safety watch for a minimum duration of 60 minutes immediately following the completion of the Hot Work.
 - .5 Compliance with fire safety codes, standards and occupational health and safety regulations specified.
 - .6 Site specific rules and procedures in force at the site as provided by the Facility Manager.
- .3 Generic procedures, if used, must be edited and supplemented with pertinent information tailored to reflect specific project conditions. Label document as being the Hot Work Procedures for this contract.
- .4 Procedures shall clearly establish responsibilities of:
 - .1 Worker performing hot work,
 - .2 Person issuing the Hot Work Permit,
 - .3 Fire Safety Watcher,
 - .4 Subcontractor(s) and Contractor.
- .5 Brief all workers and subcontractors on Hot Work Procedures and of Permit system. Stringently enforce compliance.
- .6 Failure to comply with fire safety procedures may result in the issue of a Non-Compliance notification as specified in Section 01 35 28.

1.9 HOT WORK
PERMIT

- .1 Hot Work Permit to include the following:
 - .1 Project name and project number;

- .2 Building name and specific room or area where hot work will be performed;
- .3 Date of issue;
- .4 Description of hot work type needed;
- .5 Special precautions to be followed, including type of fire extinguisher needed;
- .6 Name and signature of permit issuer.
- .7 Name of worker to which the permit is issued.
- .8 Permit validity period not to exceed 8 hours. Indicate start time/date and termination time/date.
- .9 Worker's signature with time/date of hot work completion.
- .10 Stipulated time period of safety watch.
- .11 Fire Safety Watcher's signature with time/date.

- .2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.
- .3 Each Hot Work Permit to be completed in full, signed and returned to Contractor's Superintendent for safe keeping on site.

1.10 FIRE PROTECTION
AND ALARM SYSTEMS

- .1 Fire protection and alarm systems shall not be:
 - .1 Obstructed.
 - .2 Shut-off, unless approved by Departmental Representative.
 - .3 Left inactive at the end of a working day or shift.
- .2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.
- .3 Costs incurred, from the fire department, Facility owner and tenants, resulting from negligently setting off false alarms will be charged to the Contractor in the form of financial progress payment reductions and holdback assessments against the Contract.

1.11 DOCUMENTS
ON SITE

- .1 Keep Hot Work Permits and Hazard assessment documentation on site for duration of Work.
- .2 Upon request, make available to Departmental Representative or to authorized safety Representative for inspection.

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- 1.1 SECTION INCLUDES .1 Procedures to isolate and lockout electrical facility and other equipment from energy sources.
- 1.2 RELATED WORK .1 Section 01 35 28: Health and Safety
- 1.3 REFERENCES .1 CSA C22.1-06 - Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.
- .2 CAN/CSA C22.3 No.1-06 - Overhead Systems.
- .3 CSA C22.3 No.7-06 - Underground Systems.
- .4 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
- 1.4 DEFINITIONS .1 Electrical Facility: means any system, equipment, device, apparatus, wiring, conductor, assembly or part thereof that is used for the generation, transformation, transmission, distribution, storage, control, measurement or utilization of electrical energy, and that has an amperage and voltage that is dangerous to persons.
- .2 Guarantee of Isolation: means a guarantee by a competent person in control or in charge that a particular facility or equipment has been isolated.
- .3 De-energize: in the electrical sense, that a piece of equipment is isolated and grounded, e.g. if the equipment is not grounded, it cannot be considered de-energized (DEAD).
- .4 Guarded: means that an equipment or facility is covered, shielded, fenced, enclosed, inaccessible by location, or otherwise protected in a manner that, to the extent that is reasonably practicable, will prevent or reduce danger to any person who might touch or go near such item.
- .5 Isolate: means that an electrical facility, mechanical equipment or machinery is separated or disconnected from every source of electrical, mechanical, hydraulic, pneumatic or other kind of energy that is capable of making it dangerous.

- .6 Live/alive: means that an electrical facility produces, contains, stores or is electrically connected to a source of alternating or direct current of an amperage and voltage that is dangerous or contains any hydraulic, pneumatic or other kind of energy that is capable of making the facility dangerous to persons.

1.5 COMPLIANCE
REQUIREMENTS

- .1 Comply with the following in regards to isolation and lockout of electrical facilities and equipment:
 - .1 Canadian Electrical Code
 - .2 Federal and Provincial Occupational Health and Safety Acts and Regulations.
 - .3 Regulations and code of practice as applicable to mechanical equipment or other machinery being de-energized.
 - .4 Procedures specified herein.
- .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.

1.6 SUBMITTALS

- .1 Submit copy of proposed lockout procedures and sample of lockout permit or lockout tags to Departmental Representative for review, within 14 calendar days of acceptance of bid.
- .2 Submit in accordance with section 01 33 00.

1.7 ISOLATION OF
EXISTING SERVICES

- .1 Obtain Departmental Representative's written authorization prior to working on existing live or active electrical facilities and equipment and before proceeding with isolation of such item.
- .2 To obtain authorization, submit to Departmental Representative the following documentation:
 - .1 Written request to isolate the particular service or facility and;
 - .2 Copy of Contractor's Lockout Procedures.
- .3 Make a Request for Isolation for each event, unless directed otherwise by Departmental Representative, as follows:
 - .1 Fill-out standard form in current use at

the Facility as provided by Departmental Representative or;

.2 Where no form exist, make written request indicating:

.1 The equipment, system or service to be isolated and its location;

.2 Duration of isolation period (ie: start time & date and completion time & date).

.3 Voltage of service feed to system or equipment being isolated.

.4 Name of person making the request.

.4 Do not proceed with isolation until receipt of written notification from Departmental Representative granting the Isolation Request and authorization to proceed with the work.

.1 Note that Departmental Representative may designate another person at the Facility being authorized to grant the Isolation Request.

.5 Conduct safe, orderly shutdown of equipment or facility. De-energize, isolate and lockout power and other sources of energy feeding the equipment or facility.

.6 Determine in advance, as much as possible, in cooperation with the Departmental Representative, the type and frequency of situations which will require isolation of existing services.

.7 Plan and schedule shut down of existing services in consultation with the Departmental Representative and the Facility Manager. Minimize impact and downtime of Facility operations. Follow Departmental Representative's directives in this regard.

.8 Conduct hazard assessment as part of the process in accordance with health and safety requirements specified Section 01 35 28.

1.8 LOCKOUTS

.1 De-energize, isolate and lockout electrical facility, mechanical equipment and machinery from all potential sources of energy prior to working on such items.

.2 Develop and implement clear and specific lockout procedures to be followed as part of the Work.

-
- .3 Prepare typed written Lockout Procedures describing safe work practices, procedures, worker responsibilities and sequence of activities to be followed on site by workforce to safely isolate an active piece of equipment or electrical facility and effectively lockout and tag out it's sources of energy.

 - .4 Include as part of the Lockout Procedures a system of lockout permits managed by Contractor's Superintendent or other qualified person designated by him/her as being "in-charge" at the site.
 - .1 A lockout permit shall be issued to specific worker providing a Guarantee of Isolation before each event when work must be performed on a live equipment or electrical facility.
 - .2 Duties of person managing the permit system to include:
 - .1 Issuance of permits and lockout tags to workers.
 - .2 Determining permit duration.
 - .3 Maintaining record of permits and tags issued.
 - .4 Making a Request for Isolation to Departmental Representative when required as specified above.
 - .5 Designating a Safety Watcher, when one is required based on type of work.
 - .6 Ensuring equipment or facility has been properly isolated.
 - .7 Collecting and safekeeping lockout tags returned by workers as a record of the event.

 - .5 Clearly establish, describe and allocate responsibilities of:
 - .1 Workers.
 - .2 Person managing the lockout permit system.
 - .3 Safety Watcher.
 - .4 Subcontractor(s) and General Contractor.

 - .6 Generic procedures, if used, must be edited and supplemented with pertinent information to reflect specific project requirements.
 - .1 Incorporate site specific rules and procedures in force at site as provided by Facility Manager through the Departmental Representative.
 - .2 Clearly label the document as being the Lockout procedures applicable to work of this contract.

-
- .7 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.
 - .8 Use industry standard lockout tags.
 - .9 Provide appropriate safety grounding and guards as required.
- 1.9 CONFORMANCE
- .1 Brief all workers and subcontractors on requirements of this section. Stringently enforce use and compliance.
 - .2 Failure to follow lockouts procedures specified herein may result in the issuance of a Non-Compliance notification as specified in section 01 35 28.
- 1.10 DOCUMENTS
ON SITE
- .1 Post Lockout Procedures on site in common location for viewing by workers.
 - .2 Keep copies of Request for Isolation forms and lockout permits and tags issued to workers on site for full duration of Work.
 - .3 Upon request, make available to Departmental Representative or to authorized safety Representative for inspection.

1.1 RELATED WORK

- .1 Section 01 35 24: Special Procedures on Fire Safety Requirements.
- .2 Section 01 35 25: Special Procedures on Lockout Requirements.

1.2 SUBMITTALS

- .1 Submit to Departmental Representative copies of the following documents, including updates:
 - .1 Site Specific Health and Safety Plan.
 - .2 Building Permit, compliance certificates and other permits obtained.
 - .3 Reports or directions issued by Federal, Provincial or other authority having jurisdiction.
 - .4 Accident or Incident Reports.
 - .5 MSDS data sheets.
 - .6 Name of Contractor's Representative designated to perform full time health and safety supervision on site.
- .2 Upon request by Departmental Representative, submit reports and other documentation as stipulated to be produced and maintained by Federal and Provincial Occupational Health and Safety Regulations and as specified herein.
- .3 Submit above documents in accordance with the submittal procedures specified in Section 01 33 00.

1.3 COMPLIANCE REQUIREMENTS

- .1 Comply with the Occupational Health and Safety Act for the Province of Newfoundland and Labrador, and the Occupational Health & Safety Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code Part II, and the Canada Occupational Safety and Health Regulations made under Part II of the Canada Labour Code.
- .3 Observe and enforce construction safety measures required by:
 - .1 National Building Code of Canada;
 - .2 Provincial Worker's Compensation Board;
 - .3 Municipal statutes and ordinances.

- .4 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.
- .5 A copy of the Canada Labour Code Part II may be obtained by contacting:

Canadian Government Publishing
Public Works & Government Services Canada
Ottawa, Ontario, K1A 0S9
Tel: (819) 956-4800 (1-800-635-7943)
Publication No. L31-85/2000 E or F)

- .9 Maintain Workers Compensation Coverage for duration of Contract. Submit Letter of Good Standing to Departmental Representative upon request.

1.4 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, of property and for protection of persons and public circulating adjacent to work operations to extent that they may be affected by conduct of the Work.
- .2 Enforce compliance by all workers, sub-contractors and other persons granted access to work site with safety requirements of Contract Documents, applicable Federal, Provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.5 SITE CONTROL AND ACCESS

- .1 Control work site and entry points to construction areas.
 - .1 Delineate and isolate construction areas from other areas of Facility by use of appropriate means.
 - .2 Post notices and signage at entry points and at other strategic locations identifying entrance onto site to be restricted to authorized persons only.
 - .3 Signage must be professionally made, bilingual in both official languages or display internationally understood graphic symbols.
- .2 Approve and grant access to site only to workers

and authorized persons.

.1 Immediately stop non-authorized persons from circulating in construction areas and remove from site.

.2 Provide site safety orientation to all persons before granting access. Advise of site conditions, hazards and mandatory safety rules to be observed on site.

.3 Secure site at night time to extent required to protect against unauthorized entry.

.4 Ensure persons granted access to site wear appropriate personal protective equipment (PPE) suitable to work and site conditions.

.1 Provide such PPE to authorized persons who require access to perform inspections or other approved purposes.

1.6 PROTECTION

.1 Carry out work placing emphasis on health and safety of the Public, Facility personnel, construction workers and protection of the environment.

.2 Erect safety barricades, lights and signage on site to effectively delineate work areas, protect pedestrian traffic around and adjacent to work and to create a safe working environment.

.1 Erect, hoarding and temporary lighting as required. See Section 01 50 00 for minimum acceptable barricades.

.3 Should unforeseen or peculiar safety related hazard or condition become evident during performance of work, immediately take measures to rectify the situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

1.7 PERMITS

.1 Post on site permits, licenses, compliance certificates specified in section 01 10 10.

.2 Where particular permit or compliance certificate cannot be obtained at the required stage of work, notify Departmental Representative in writing and obtain his/her approval to proceed before carrying out that portion of work.

1.8 HAZARD
ASSESSMENTS

- .1 Conduct site specific health and safety hazard assessment before commencing project and during course of the work. Identify risks and hazards resulting from site conditions, weather conditions and work operations.
 - .1 Perform on-going assessments addressing new risks and hazards as work progresses including when new subtrade or subcontractor arrives on site.
 - .2 Also, conduct assessment when the scope of work has been changed by Change Order and when potential hazard or weakness in current health and safety practices are identified by Departmental Representative or by an authorized safety Representative.
- .2 Record results in writing and address in Health and Safety Plan.
- .3 Keep copy of all assessments on site.

1.9 PROJECT/SITE
CONDITIONS

- .1 The following are known or potential project related health, environmental and safety hazards at site which must be properly managed if encountered during course of work:
 - .1 Environmental hazards lead, mould, MSDS, spills, ventilation required, heat stress, cold.
 - .2 Access to site scaffolding, slips, hoarding, safe access to other tenants.
 - .3 Communication plan.
 - .4 Lock out procedures, hot work, fire watch, traffic control, HVAC contamination from construction activity, emergency response, maintaining sprinkler system.
 - .5 Personal limitation of workers.
 - .6 PPE, working at heights.
 - .7 Activity hazards, electrical cord and equipment, airborne particles, energized equipment, burn/heat source/torching.
 - .8 Working at heights, barricades, holes, protection from falling items.
- .2 Above list shall not be construed as being complete and inclusive of potential health, and safety hazards encountered during work. Include above items into hazard assessment process.
- .3 Obtain from Departmental Representative, copy of MSDS Data sheets for existing hazardous products stored on site or used by Facility personnel.

1.10 HEALTH AND
SAFETY MEETINGS

- .1 Attend pre-construction health and safety meeting conducted by Departmental Representative. Have following persons in attendance:
 - .1 Site Superintendent.
 - .2 Contractor's designated Health and Safety Site Supervisor.
 - .3 Departmental Representative will advise of date, time and location.
- .2 Conduct health and safety meetings and tool box briefings on site. Hold on a regular and pre-scheduled basis during entire work in accordance with requirements and frequency as stipulated in provincial occupational health and safety regulations.
 - .1 Keep workers informed of potential hazards and provide safe work practices and procedures to be followed.
 - .2 Take written minutes and post on site.

1.11 HEALTH AND
SAFETY PLAN

- .1 Develop written site-specific Project Health and Safety Plan, based on hazard assessments, prior to commencement of work.
 - .1 Submit copy to Departmental Representative within 21 calendar days of acceptance of bid.
 - .2 Submit updates as work progresses.
- .2 Health and Safety Plan shall contain three (3) parts with following information:
 - .1 Part 1 - Hazards: List of individual health risks and safety hazards identified by hazard assessment process.
 - .2 Part 2 - Safety Measures: engineering controls, personal protective equipment and safe work practices used to mitigate hazards and risks listed in Part 1 of Plan.
 - .3 Part 3a: Emergency Response: standard operating procedures, evacuation measures and emergency response in the occurrence of an accident, incident or emergency.
 - .1 Include response to all hazards listed in Part 1 of Plan.
 - .2 Evacuation measures to complement the Facility's existing Emergency Response and Evacuation Plan. Obtain pertinent information from Departmental Representative.
 - .3 List names and telephone numbers of officials to contact including:
 - .1 General Contractor and all

Subcontractors.

.2 Federal and Provincial Departments as stipulated by laws and regulations and local emergency resource organizations, as needed based on nature of emergency or accident.

.3 Officials from PWGSC and site Facility management. Departmental Representative will provide list.

.4 Part 3b - Site Communications:

.1 Procedures used on site to share work related safety issues between workers, subcontractors, and General Contractor.

.2 List of critical tasks and work activities, to be communicated with the Facility Manager, which has risk of affecting tenant operations, or endangering health and safety of Facility personnel and the general public. Develop list in consultation with the Departmental Representative.

.3 Prepare Health and Safety Plan in a three column format, addressing the three parts specified above, as follows:

Column 1	Column 2	Column 3
Part 1 Identified Hazards	Part 2 Safety Measures	Part 3a/3b Emergency Response & Site Communications

.4 Develop Plan in collaboration with subcontractors. Address work activities of all trades. Revise and update Plan as Sub-contractors arrive on site.

.5 Implement and enforce compliance with requirements of Plan for full duration of work to final completion and demobilization from site.

.6 As work progresses, review and update Plan. Address additional health risks and safety hazards identified by on-going hazard assessments.

.7 Post copy of Plan, and updates, on site.

.8 Submission of the Health and Safety Plan, and

updates, to the Departmental Representative is for review and information purposes only. Departmental Representative's receipt, review and any comments made of the Plan shall not be construed to imply approval in part or in whole of such Plan by Departmental Representative and shall not be interpreted as a warranty of being complete and accurate or as a confirmation that all health and safety requirements of the Work have been addressed and that it is legislative compliant. Furthermore, Departmental Representative's review of the Plan shall not relieve the Contractor of any of his legal obligations for Occupational Health and Safety provisions specified as part of the Work and those required by provincial legislation.

1.12 SAFETY
SUPERVISION AND
INSPECTIONS

- .1 Designate one person to be present on site at all times, responsible for supervising health and safety of the Work.
 - .1 Person to be competent in Occupational Health and Construction Safety as defined in the Provincial Occupational Health and Safety Act.
- .2 Assign responsibility, obligation and authority to such designated person to stop work as deemed necessary for reasons of health and safety.
- .3 Conduct regularly scheduled informal safety inspections of work site on a minimum bi-weekly basis.
 - .1 Note deficiencies and remedial action taken in a log book or diary.
- .4 Conduct Formal Inspections on a minimum monthly basis.
 - .1 Use standardized safety checklist forms.
 - .2 Prepare written report of each inspection. Document deficiencies, remedial action needed and assign responsibility for rectification to appropriate subcontractor or worker.
 - .3 Distribute monthly reports to subcontractors for their pursuance.
 - .4 Follow-up and ensure appropriate action and corrective measures are taken.
- .5 Cooperate with Facility's Health and Safety Site Coordinator responsible for the entire site, should one be designated by Departmental

Representative.

.6 Keep inspection reports on site.

1.13 TRAINING

- .1 Ensure that all workers and other persons granted access to site are competently trained and knowledgeable on:
- .1 Safe use of tools and equipment.
 - .2 How to wear and use personal protective equipment (PPE).
 - .3 Safe work practices and procedures to be followed in carrying out work.
 - .4 Site conditions and minimum safety rules to be observed on site, as given at site orientation session.

1.14 MINIMUM
SITE SAFETY RULES

- .1 Notwithstanding the requirement to abide by federal and provincial health and safety regulations, the following safety rules shall be considered minimum requirements to be obeyed by all persons granted site access:
- .1 Wear personnel protective equipment (PPE) appropriate to function and task on site; the minimum requirements being hard hat, safety footwear and eye protection.
 - .2 Immediately report unsafe activity or condition at site, near-miss accident, injury and damage.
 - .3 Maintain site in tidy condition.
 - .4 Obey warning signs and safety tags.
- .2 Brief workers on site safety rules and on disciplinary measures to be taken by Departmental Representative for violation or non-compliance of such rules. Post rules on site.
- .3 The following actions or conduct by Contractor, workers and subcontractors will be considered as non-conformance with the health and safety requirements of the contract for which a Non-Compliance Notification will be issued to the General Contractor by the Departmental Representative:
- .1 Failure to follow the minimum site safety rules specified above.
 - .2 Negligence resulting in serious injury or major property damage.
 - .3 Deliberate non-compliance with Federal and Provincial Acts and Regulations.

- .4 Falsification of information in Workers Compensation Reports, safety reports and other health and safety related documents submitted to Departmental Representative or to Authority having jurisdiction.
 - .5 Possession of firearms on site.
 - .6 Possession of non-prescriptive illegal drugs or alcohol.
 - .7 Action, or lack thereof, resulting in the issuance of Warnings, Fines or Stop Work Orders from a Provincial Authority having jurisdiction.
 - .8 Violation of other specified health and safety rules and requirements as determined by Departmental Representative.
- .4 See elsewhere in this section for details on Non-Compliance Notifications and resulting disciplinary measures.
- 1.15 ACCIDENT REPORTING
- .1 Investigate and report the following incidents and accidents:
 - .1 Those as required by Provincial Occupational Safety and Health Act and Regulations.
 - .2 Injury requiring medical aid as defined in the Canadian Dictionary of Safety Terms-1987, published by the Canadian Society of Safety Engineers (C.S.S.E)as follows:
 - .1 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.
 - .3 Property damage in excess of \$5000.00,
 - .4 Interruption to Facility operations with potential loss to a Federal Dept. in excess of \$5000.00,
 - .5 Those which require notification to Workers Compensation Board or other regulatory agencies as stipulated by applicable law or regulations.
 - .2 Send written report to Departmental Representative for all above cases.
- 1.16 TOOLS AND EQUIPMENT SAFETY
- .1 Routinely check and maintain tools, equipment and machinery for safe operation.
 - .2 Conduct checks as part of site safety inspections.

When requested, submit proof that checks and maintenance have been carried out.

- .3 Tag and immediately remove from site items found faulty or defective.

1.17 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).

- .2 Keep MSDS data sheets for all products delivered to site. Post on site. Submit copy to Departmental Representative upon receipt.

- .3 On building renovation projects where work is within or immediately adjacent to occupied areas, also post copy of data sheets in a public location accessible to Facility personnel.

- .4 Existing construction contains asbestos. Abate and manage to applicable codes and standards. Refer also to specification section 02 82 00.02 and Appendix 'A' - Asbestos Management Plan.

1.18 POWDER ACTUATED DEVICES

- .1 Use powder actuated fastening devices only after receipt of written permission from Departmental Representative.

1.19 POSTING OF DOCUMENTS

- .1 Post on site safety documentation as stipulated by Authorities having jurisdiction and as specified herein. Place in a common visible location.

1.20 SITE RECORDS

- .1 Maintain on site a copy of all health and safety documentation and reports specified to be produced as part of the work and received from authorities having jurisdiction.

- .2 Upon request, make available to Departmental Representative and to other authorized safety representative for review. Provide copy when directed by Departmental Representative.

1.21 NON COMPLIANCE AND DISCIPLINARY MEASURES

- .1 Immediately address and correct health and safety violations and non-compliance issues.

- .2 Negligence or failure to follow occupational

health and safety provisions specified in the Contract Documents and of those of applicable federal and provincial laws and regulations could result in disciplinary measures taken by the Departmental Representative against the General Contractor.

- .3 PWGSC uses a system of Non-Compliance Notifications and Disciplinary Measures on projects as follows:
 - .1 A non-compliance notification will be issued to the General Contractor, by the Departmental Representative, whenever there is a violation or failure to follow any of the project's occupational health and safety requirements by a worker, subcontractor or any other person to whom the Contractor has granted access to the work site.
 - .2 Non-Compliance notifications are progressive in nature resulting in increased disciplinary measures imposed depending on the frequency, nature and severity of the infraction.
 - .3 Disciplinary measures could include:
 - .1 Removal of the offending person or party from site;
 - .2 Financial penalties in the form of progress payment reduction or holdback assessments made against the Contract and;
 - .3 Taking the Work Out of Contractor's Hands in accordance with the General Conditions.
- .4 Departmental Representative will make final decision as to what constitutes a violation and when to issue a Non-Compliance Notification.
- .5 Non-compliance Notifications issued by Departmental Representative shall not be construed as to overrule or disregard warnings, orders and fines levied against Contractor by a regulatory agency having jurisdiction.
- .6 Details of the Non-Compliance Notification and Disciplinary Measures system will be provided by Departmental Representative upon acceptance of bid and prior to commencement of work.
- .7 Each non-compliance notification issued is given a numerical rating based on a three level numbering system. Each level is progressive in

nature to reflect:

.1 The seriousness of the infraction as viewed by the Departmental Representative.

.2 The degree of disciplinary action which will be taken by the Departmental Representative.

.8 Numerical ratings are as follows:

.1 Non-Compliance Notification-Level No.1
Rating:

.1 Situation: occurrence of a first time infraction by a person or party on site.

.2 Action: verbal warning to General Contractor, documented in Departmental files and copy sent to the General Contractor.

.2 Non-Compliance Notification-Level No.2
Rating:

.1 Situation:

.1 The second occurrence of a previous infraction by the same person or party on site or;

.2 Accumulation of several level-1 notifications for different infractions by the same person or party on site or;

.3 Non-action on the part of the Contractor or subcontractor to rectify non-compliance infractions previously identified in one or several level-1 notifications or;

.4 Violation or non-observance of a Federal or Provincial safety Law or Regulation by subcontractor or Contractor or;

.5 Negligence by a person or party resulting in injury or major property damage.

.2 Action: written notice to General Contractor complete with an order for immediate remedial action to be taken. Depending on the severity of the offence, the order may include request for the immediate removal of the offending person or party from site.

.3 Non-Compliance Notification-Level No.3
Rating:

.1 Situation:

.1 Continued and repeated

non-compliance with health and safety requirements by the General Contractor or by subcontractor(s) or;

.2 The occurrence of a serious accident on site resulting in serious bodily injury or death.

.2 Action:

.1 Formal letter issued to General Contractor with an order to immediately stop the work until so notified to proceed.

.2 Review of all infractions and incident/accident occurrences with possible investigation by the Department of Public Works & Government Services Canada.

.3 Based on outcome of the review/investigation, Work could be suspended or taken out of the Contractor's hands in accordance with the General Conditions.

.3 The term "serious accident" used herein shall have the same meaning as defined in the Canadian Dictionary of Safety Terms - 1987 issue from the Canadian Society of Safety Engineers (C.S.S.E).

.9 Decision on which rating level to be placed on any given Non-Compliance Notification will be determined solely by Departmental Representative.

.10 Further details on the disciplinary system will be provided at the pre-construction Health and Safety meeting.

.11 Be responsible to fully brief workers and subcontractors on the operation and importance of this system.

<u>Project Name</u> <u>& Description</u>	<u>Start</u> <u>Dates or Months</u>	<u>Completion</u> <u>Duration</u>
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.1	_____	_____
.2	_____	_____
.3	_____	_____

.6 Departmental Representative will provide full description of Contracts listed above, complete

with drawings and specifications, and name of each
General Contractor prior to commencement of Work
or immediately upon award of future contracts.

- 1.1 RELATED WORK .1 Waste Management and Disposal: Section 01 74 21.
.2 Asbestos Abatement: section 02 82 00.02.
.3 Appendix 'A' - Asbestos Management Plan.
- 1.2 DEFINITIONS .1 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.
- 1.3 FIRES .1 Fires and burning of rubbish on site not permitted.
- 1.4 HAZARDOUS MATERIAL HANDLING .1 Store and handle hazardous materials in accordance with applicable federal and provincial laws, regulations, codes and guidelines. Store in location that will prevent spillage into the environment
.2 Label containers to WHMIS requirements and keep MSDS data sheets on site for all hazardous materials.
.3 Maintain inventory of hazardous materials and hazardous waste stored on site. List items by product name, quantity and date when storage began.
.4 Store and handle flammable and combustible materials in accordance with National Fire Code.
.5 Transport hazardous materials in accordance with federal Transportation of Dangerous Goods Regulations and applicable Provincial regulations.
- 1.5 DISPOSAL OF WASTES .1 Do not bury rubbish and waste materials on site. Dispose in accordance with project waste management requirements specified.
.2 Do not dispose of hazardous waste or volatile materials, such as mineral spirits, paints, thinners, oil or fuel into waterways, storm or

sanitary sewers or waste landfill sites.

- .3 Dispose of hazardous waste in accordance with applicable federal and provincial laws, regulations, codes and guidelines.

1.6 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features during this contract.
- .2 Control emissions from equipment and plant to local authorities' emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
- .5 Have appropriate emergency spill response equipment and rapid clean-up kit on site located adjacent to hazardous materials storage area. Provide personal protective equipment required for clean-up.

1.1 GENERAL

- .1 Due to nature of this Facility, and client operations therein, security regulations pertaining to site will be in place during the work resulting in need for:
 - .1 Control and limit movement of construction workers inside building;
 - .2 Specific rules and regulations as specified in this section and as directed by the Departmental Representative to be stringently followed.
- .2 It is the Contractor's responsibility to:
 - .1 Submit necessary documentation required for all workers;
 - .2 Become familiar with and abide by security rules and regulations;
 - .3 Brief all workers and subcontractors in respect of the security regulations and ensure that they abide by all rules and directives.
- .3 The Departmental Representative will coordinate a pre-construction meeting between Contractor, Facility Management and Security Personnel who will provide details and directives on control and movement on site.
- .4 Any infraction of site security regulations on the part of the Contractor, members of work force or any Subcontractor in his employ, could result in:
 - .1 Financial penalties in the form of progress payment reduction or holdback assessments being levied against the Contractor and;
 - .2 Demand immediate removal of offending party from the site.

1.2 SECURITY PERSONNEL

- .1 Pay costs of facility security staff during all after hours and weekend work. Building security must be present while contractor is on site. Hourly cost may be obtained from PWGSC representative.

1.3 SECURITY CLEARANCE REQ'TS

- .1 Security Passes:
 - .1 Visitor or worker ID Tags are required for all personnel requiring access inside the building.
 - .2 ID Tags will be provided by the Facility Security, issued to Contractor for distribution

to authorized workers which shall also be placed on the Security Control List specified below.

.3 All persons while on site, must wear the ID Tag issued to him regardless of daytime or nighttime work.

.4 Be responsible to obtain ID Tags before work commences, including those required by subcontractors, and continually control their distribution and use by workers. Submit request for tags as early as possible prior to commencement of work.

.5 For the duration of this contract, anyone not in possession of the ID Tag will not be allowed access on site.

.6 At end of project, return to Departmental Representative all tags issued to workers and to subcontractors.

.1 The Departmental Representative will levy a financial penalty in the form of a holdback assessment against the Contract for each pass not returned regardless of the reason the pass is not returned.

.7 Immediately report any lost, stolen or destroyed ID Tags to the Departmental Representative.

1.4 SECURITY CONTROL LIST

- .1 Provide a list of employee names from workforce and from subcontractors who will be present at site during the course of work.
- .2 List to include each person's name, address and telephone number.
- .3 Submit copy of list to Departmental Representative and to Security Commissionaire for control of workers.
- .4 Update list as work progresses.
- .5 Ensure that each worker can provide proof of identity upon demand, when requested by Facility's Security Personnel, Departmental Representative or by Facility Management.

1.5 BUILDING ACCESS

- .1 Keys and door security access cards necessary for access to restricted areas may be issued at the discretion of the Building Manager and the Departmental Representative. Follow all instructions in regards to use, care and disposition of all keys and access cards so issued.
- .2 Keys and security access cards given to the Commissionaire for his sole possession, as determined by Departmental Representative, shall not under any circumstances be given to any worker or subcontractor.
- .3 Do not, under any circumstances, make or allow workers to make duplicates of keys issued.
- .4 At end of project, return to Departmental Representative all keys and access cards issued. Departmental Representative will deduct from final contract payment, \$25.00 for each item not returned, regardless of the reason.
- .5 Immediately report to Departmental Representative any lost, stolen or destroyed keys and door security access cards.

1.6 SITE SECURITY

- .1 Where work of this contract requires use of a permanently locked door, it is Contractor's responsibility to ensure that door is unlocked and locked after each use or provide a competent security guard, posted at door, when door must remain open for an elongated period of time during a particular workshift.
 - .1 Notify Building Security when security doors will be used and stringently follow all directives to ensure building security is effectively maintained.
- .2 When work must be carried out during Off Hours or beyond the work hours previously agreed upon at start of work; provide notice within 48 hours beforehand to minimize impact on Facility's security and tenant operations.
- .3 Off Hours are defined in section 01 14 10.

1.1 INSPECTION

- .1 Give timely notice requesting inspection of Work designated for special tests, inspections or approvals by Departmental Representative or by inspection authorities having jurisdiction.
- .2 In accordance with the General Conditions, Departmental Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents.
- .3 If Contractor covers or permits to be covered Work designated for special tests, inspections or approvals before such is made, uncover Work until particular inspections or tests have been fully and satisfactorily completed and until such time as Departmental Representative gives permission to proceed.
- .4 Pay costs to uncover and make good work disturbed by inspections and tests.

1.2 TESTING

- .1 Tests on materials, equipment and building systems as specified in various sections of the Specifications is the responsibility of the Contractor except where stipulated otherwise.
 - .1 Provide all necessary instruments, equipment and qualified personnel to perform tests.
- .2 At completion of tests, turn over 2 sets of fully documented tests reports to the Departmental Representative. Submit in accordance with Section 01 33 00.
 - .1 Obtain additional copies for inclusion of a complete set in each of the maintenance manuals specified in Section 01 78 00.
- .3 Unspecified tests may also be made by Departmental Representative, at the discretion of the Departmental Representative. The costs of these tests will be paid for by the Departmental Representative.
- .4 Where tests or inspections reveal work not in accordance with contract requirements, Contractor shall pay costs for additional tests and inspections incurred by Departmental Representative as required to verify acceptability of corrected work.

1.3 INDEPENDENT
INSPECTION AGENCIES

- .1 Departmental Representative may engage and pay for service of Independent Inspection and Testing Agencies for purpose of inspecting and testing portions of Work except for the following which remain part of Contractor's responsibilities:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing, adjustment and balancing of mechanical and electrical equipment and other building systems.
 - .4 Performance verification tests before building commissioning procedures commences.
 - .5 Mill tests and certificates of compliance.
 - .6 Tests as specified within various sections designated to be carried out by Contractor under the supervision of Departmental Representative.
 - .7 Air quality monitoring and testing during hazardous materials abatement.
 - .8 Additional tests as specified in Clause 1.3.4 above.
- .2 Provide sufficient advance notice to Departmental Representative of time when the Work will be ready for testing by designated Testing Agency in order for Departmental Representative to make attendance arrangements with such Agency. When directed by Departmental Representative notify the Agency directly.
- .3 When specified or directed, submit Representative samples of materials, in required quantities, to Testing Agency for testing purposes. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .4 Provide labour and facilities to obtain, handle and deliver samples.
- .5 Provide sufficient space on site for Testing Agency's exclusive use to store equipment and cure test samples.
- .6 Employment of Independent Inspection and Testing Agencies by Departmental Representative does not relax responsibility to perform Work in accordance with Contract Documents.

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- 1.4 ACCESS TO WORK .1 Facilitate Departmental Representative's access to Work. If part of Work is being fabricated at locations other than construction site, make preparations to allow access to such Work whenever it is in progress.
- .2 Furnish labour and facility to provide access to the work being inspected and tested.
- .3 Co-operate to facilitate such inspections and tests.
- 1.5 REJECTED WORK .1 Remove and replace defective Work, whether result of poor workmanship, use of defective or damaged products and whether incorporated in Work or not, which has been identified by Departmental Representative as failing to conform to Contract Documents.
- .2 Make good damages to new and existing construction and finishes resulting from removal or replacement of defective work.
- 1.6 MOCK-UPS .1 Prepare mock-ups of certain work as specified in various sections of the Specifications. Include in each mock-up all related work components representative of final assembly.
- .2 Construct in locations acceptable to Departmental Representative.
- .3 Prepare mock-ups for Departmental Representative's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Departmental Representative will assist in preparing a schedule fixing dates for preparation.
- .6 Dismantle and remove mock-up when directed by Departmental Representative, unless approval is given for mock-up to remain as part of the Work.

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- 1.1 SITE ACCESS AND PARKING .1 The Departmental Representative will designate Contractor's access to project site as well as parking facilities for equipment and workers.
- .2 The Contractor is advised that while parking facilities for his workers and subcontractors MAY be on property, such parking facilities may be remote from the actual site of the work. In any case, follow all instructions from the Departmental Representative in regards to parking facilities. Availability of on-site parking is not, however guaranteed.
- 1.2 BUILDING ACCESS .1 Use only access doors, and circulation routes within building as designated by Departmental Representative to access interior work.
- 1.3 MATERIAL STORAGE .1 Locate site storage trailers where directed by Departmental Representative. Place in location of least interference with existing Facility operations.
- .2 Material storage space on site is limited. Coordinate delivery to minimize storage period on site before being needed for incorporation into work. Storage within the building is not available.
- 1.4 INTERIOR HOARDING .1 Erect hoarding inside building to isolate construction areas, protect occupants and public and maintain security for duration of work.
- 1.5 INTERIOR DUST CONTROL AND DUST BARRIERS .1 Control creation and spread of dust and dirt to building interior and in particular to areas within premises still under use by occupants.
- .2 Develop and implement a dust control plan, addressing effective measures to carry out work with least amount of dust being created and propagated.
- .1 Carefully evaluate the type of work to be undertaken and the physical layout of each work area on site.
- .2 Provide specifically tailored strategy for each work area.
- .3 Pre-determine location and placement of

dust barriers to confine resulting dust to immediate work area.

.4 Inform Departmental Representative of the proposed dust control measures to be followed at each work area and for each major dust generating activities. Obtain Departmental Representative's approval before proceeding with work.

.3 Dust control plan to incorporate as a minimum the following dust protection and cleaning requirements:

.1 Erect dustproof partitions in addition to construction hoarding specified in 1.4 above completely around work area to fully isolate construction from other parts of the building

.1 Erect from floor to underside of ceiling above, sheeting applied to occupied side of partition.

.2 Scribe, cut and fit sheathing tight to shape of structural steel, deck profile and to other obstructions in ceiling space and abutting walls.

.3 Use compressible neoprene gaskets around perimeter of partition and at all protrusions to achieve airtight construction.

.4 Where partition is exposed to public view, tape and finish drywall joints and paint surface to color approved by the Departmental Representative.

.3 Provide a "dust tight" and lockable access door(s) within dust partition or between rooms for worker entry into work area. This is of particular importance for situations where excessive dust will be generated.

.4 Provide additional dust barriers, placed tightly to underside of the floor/roof deck above, in locations where existing walls are used as part of the dust barrier system but simply terminate at the finished ceiling level resulting in an open space above, or other similar condition, permitting dust to migrate beyond the construction areas.

.5 Make all dust barriers airtight, effectively blocking and stopping all dust migration.

.6 Inspect dust barriers at various intervals during each work shift. Immediately fix tears, unsealed edges and maintain barriers effectively sealed for the entire work duration.

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- .7 Shut down existing ventilation system feeding construction space, or disconnect and seal-off supply and return air ducts to stop dust from contaminating other areas.
 - .8 Immediately clean areas in use by occupants and public contaminated by work.
 - .1 Vacuum carpets, wash floors and walls. Remove accumulated dust from all surfaces. Clean and remove smears, scuffs and marks.
 - .4 Meager attempts at controlling dust will not be tolerated. Failure to provide effective dust control during work and to perform satisfactory cleaning thereafter will result in Departmental Representative to proceed and obtain a separate cleaning service agency to perform cleaning to tenant's satisfaction with cost for such services being charged against this Contract in the form of financial holdbacks.
 - .5 Obtain Departmental Representative's approval before erecting any dust partitions simply to underside of finish ceiling.
 - .6 Construction of dust barriers, enclosures and placement of temporary protective devices to be performed during Facility non-operational off-hour periods.
- 1.6 SANITARY FACILITIES
- .1 Sanitary facilities are available at the site and may be used by Contractor's work force. Make arrangements for the use of such facilities through the Departmental Representative.
- 1.7 POWER
- .1 Power supply is available and will be provided for construction usage at no cost.
 - .1 Make arrangements for the use of such services through the Departmental Representative.
 - .2 Departmental Representative will designate and approve each location of existing power source to which connections can be made to obtain temporary power service.
 - .3 Connect to existing power supply in accordance with Canadian Electrical Code.
 - .2 Provide and pay all costs to supply and install temporary cabling, panel boards, switching devices and other equipment as required to connect into power source, provide adequate ground fault

protection and extend power supply from existing source to work areas. Perform work and make all connections in accordance with the Canadian Electrical Code, in compliance with the federal and provincial Occupational Health and Safety Regulations as specified in section 01 35 28 and to lockout requirements specified in section 01 35 25.

- .3 Provide and maintain temporary lighting to conduct work. Ensure illumination level is not less than 162lx in all locations.
- .4 Electrical power and lighting systems installed under this Contract can be used for construction requirements provided that guarantees are not affected thereby. Make good damage. Replace lamps which have been used over period of 3 months.

1.8 WATER SUPPLY

- .1 Water supply is available in existing building and will be provided for construction usage at no cost. Make arrangements for the use and transportation of such services to work area through the Departmental Representative.
- .2 Permanent water supply system installed under this Contract can be used for construction requirements provided that guarantees are not affected thereby. Make good damage.

1.9 SCAFFOLDING
(if required)

- .1 Design, construct and maintain scaffolding in rigid, secure and safe manner in accordance with CAN/CSA-S269.2-M87(R2003).
- .2 Erect scaffolding independent of walls. Remove when no longer required.

1.10 HEATING AND
VENTILATING

- .1 Provide temporary ventilation in enclosed areas as required to:
 - .1 Facilitate progress of work.
 - .2 Provide adequate ventilation to meet health regulations for safe working environment.
- .2 Ventilating:
 - .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
 - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.

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- .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
 - .4 Ventilate storage spaces containing hazardous or volatile materials.
 - .5 Ventilate temporary sanitary facilities.
 - .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- .3 Maintain strict supervision of operation of temporary ventilating equipment to:
 - .1 Conform with applicable codes and standards.
 - .2 Enforce safe practices.
 - .3 Prevent abuse of services.
 - .4 Prevent damage to finishes.
 - .4 Submit bid assuming existing or new equipment and systems will be used for temporary heating.
 - .5 Upon acceptance of bid, Departmental Representative may permit use of permanent system providing agreement can be reached on:
 - .1 Conditions of use, special equipment, protection and maintenance.
 - .2 Saving on Contract price.
 - .3 Provisions relating to warranties on equipment.
- 1.11 CONSTRUCTION SIGN AND NOTICES
- .1 Safety and Instruction Signs and Notices:
 - .1 Signs and notices for safety and instruction shall be in both official languages or commonly understood graphic symbols conforming to CAN3-Z321-96(R2006).
 - .2 Maintenance and Disposal of Site Signs:
 - .1 Maintain approved signs and notices in good condition for duration of project and dispose of off-site on completion of project or earlier if directed by Departmental Representative.
- 1.12 REMOVAL OF TEMPORARY FACILITIES
- .1 Remove temporary facilities from site when directed by Departmental Representative.

1.1 GENERAL

- .1 Use new material and equipment unless otherwise specified.
- .2 Within 7 days of written request by Departmental Representative, submit following information for any materials and products proposed for supply:
 - .1 Name and address of manufacturer.
 - .2 Trade name, model and catalogue number.
 - .3 Performance, descriptive and test data.
 - .4 Compliance to specified standards.
 - .5 Manufacturer's installation or application instructions.
 - .6 Evidence of arrangements to procure.
 - .7 Evidence of manufacturer delivery problems or unforeseen delays.
- .3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
- .4 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.
- .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.2 PRODUCT QUALITY

- .1 Contractor shall be solely responsible for submitting relevant technical data and independent test reports to confirm whether a product or system proposed for use meets contract requirements and specified standards.
- .2 Final decision as to whether a product or system meets contract requirements rest solely with the Departmental Representative in accordance with the General Conditions of the Contract.

1.3 ACCEPTABLE MATERIALS AND ALTERNATIVES

- .1 Acceptable Materials: When materials specified include trade names or trademarks or manufacturers or supplier's name as part of the material description, select and only use one of the names listed for incorporation into the Work.

- .2 Alternative Materials: Submission of alternative materials to trade names or manufacturer's names specified must be done during the bidding period following procedures indicated in the Instructions to Bidders.
- .3 Substitutions: After contract award, substitution of a specified material will be dealt with as a change to the Work in accordance with the General Conditions of the Contract.

1.4 MANUFACTURERS
INSTRUCTIONS

- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods to be used. Do not rely on labels or enclosure provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing of any conflict between these specifications and manufacturer's instructions, so that Departmental Representative will designate which document is to be followed.

1.5 AVAILABILITY

- .1 Immediately notify Departmental Representative in writing of unforeseen or unanticipated material delivery problems by manufacturer. Provide support documentation as per clause 1.1.2 above.

1.6 WORKMANSHIP

- .1 Ensure quality of work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed.
- .2 Remove unsuitable or incompetent workers from site as stipulated in the General Conditions of the Contract.
- .3 Ensure cooperation of workers in laying out work. Maintain efficient and continuous supervision on site at all times.
- .4 Coordinate work between trades and subcontractors. See section 01 14 10 in this regard.
- .5 Coordinate placement of openings, sleeves and accessories.

- 1.7 FASTENINGS - GENERAL
- .1 Provide metal fastenings and accessories in same texture, colour and finish as base metal in which they occur. Prevent electrolytic action between dissimilar metals. Use non-corrosive fasteners, anchors and spacers for securing exterior work and in humid areas.
 - .2 Space anchors within limits of load bearing or shear capacity and ensure that they provide positive permanent anchorage. Wood or organic material plugs not acceptable.
 - .3 Keep exposed fastenings to minimum, space evenly and lay out neatly.
 - .4 Fastenings which cause spalling or cracking of material, to which anchorage is made are not acceptable.
 - .5 Do not use explosive actuated fastening devices unless approved by Departmental Representative. See section on Health and Safety Requirements in this regard.
- 1.8 FASTENINGS - EQUIPMENT
- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
 - .2 Use heavy hexagon heads, semi-finished unless otherwise specified.
 - .3 Bolts may not project more than one diameter beyond nuts.
 - .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur and, use resilient washers with stainless steel.
- 1.9 STORAGE, HANDLING AND PROTECTION
- .1 Deliver, handle and store materials in manner to prevent deterioration and soiling and in accordance with manufacturer's instructions when applicable. Provide same degree of protection to materials supplied by Departmental Representative.
 - .2 Store packaged or bundled materials in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work. Provide additional cover where manufacturer's packaging is insufficient to provide adequate protection.

- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Immediately remove damaged or rejected materials from site.
- .9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.10 CONSTRUCTION
EQUIPMENT AND PLANT

- .1 On request, prove to the satisfaction of Departmental Representative that the construction equipment and plant are adequate to manufacture, transport, place and finish work to quality and production rates specified. If inadequate, replace or provide additional equipment or plant as directed.
- .2 Maintain construction equipment and plant in good operating order.

1.1 GENERAL

- .1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- .2 Store volatile waste in covered locked metal containers, and remove from premises at end of each working day.
- .3 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

1.2 MATERIALS

- .1 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

1.3 CLEANING DURING CONSTRUCTION

- .1 Maintain work areas and occupied area in a clean, tidy condition, free from accumulations of waste material dust, dirt and debris. Clean areas on a daily basis.
- .2 Keep building entrances, corridors, stairwells and occupied areas of building in a clean dust free condition at all times. Conduct thorough cleaning of these areas at end of each workshift when used by workers or affected by the Work.
- .3 Provide on-site covered, locked steel containers for collection of waste materials and debris.
- .4 Use separate collection bins, clearly marked as to purpose, for source separation and recycling of waste and debris in accordance with waste management requirements specified.
- .5 Remove waste materials, and debris from site on a daily basis.
- .6 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.
- .7 Provide dust barriers, dividers, seals on doors and employ other dust control measures as required to ensure that dust and dirt, generated by work, are not transmitted to other existing areas of

building. Should dust migrate into occupied areas of building, employ such means as may be necessary to immediately clean all contaminated surfaces to the satisfaction of the Departmental Representative.

.1 See Section 01 50 00 for requirements on dust control and for erection of dust partitions.

.8 Immediately clean all dust, dirt, smears, scuffs and soiled surfaces in lobbies, corridors, and within tenant occupied areas resulting from the Work.

.1 Perform cleaning, dusting and washing operations, and floor washing as necessary to thoroughly clean all soiled surfaces.

1.4 FINAL CLEANING

.1 In preparation for acceptance of the completed work perform final cleaning.

.2 Remove grease, dust, dirt, stains, labels, fingerprints, marks and other foreign materials, from interior and exterior finished surfaces. Clean and polish surfaces including glass, mirrors, hardware, wall tile, stainless steel, chrome, baked enamel, plastic laminate, mechanical and electrical fixtures.

.3 Replace items with broken pieces, scratches or disfigured.

.4 Clean lighting reflectors, lenses, and other lighting surfaces.

.5 Vacuum clean and dust building interiors, behind grilles, louvres and screens.

.6 Wax, seal, shampoo or prepare floor finishes as recommended by manufacturer.

.7 Inspect finishes, fitments and equipment. Ensure specified workmanship and operation.

.8 Clean equipment, washroom fixtures to a sanitary condition. Replace filters of mechanical equipment.

- 1.1 RELATED WORK
- .1 Environment Procedures: Section 01 35 43.
 - .2 Asbestos Abatement: Section 02 82 00.02.
 - .3 Appendix 'A' - Asbestos Management Plan.
- 1.2 GENERAL
- .1 Carry out work placing maximum emphasis on the areas of:
 - .1 Waste reduction;
 - .2 Diversion of waste from landfill and;
 - .3 Material Recycling.
- 1.3 WASTE MANAGEMENT PLAN
- .1 Prior to commencement of work, prepare waste Management Workplan.
 - .2 Workplan to include:
 - .1 Waste audit.
 - .2 Waste reduction practices.
 - .3 Material source separation process.
 - .4 Procedures for sending recyclables to recycling facilities.
 - .5 Procedures for sending non-salvageable items and waste to approved waste processing facility or landfill site.
 - .6 Training and supervising workforce on waste management at site.
 - .3 Workplan to incorporate waste management requirements specified herein and in other sections of the Specifications.
 - .4 Develop Workplan in collaboration with all subcontractors to ensure all waste management issues and opportunities are addressed.
 - .5 Submit copy of Workplan to Departmental Representative for review and approval.
 - .1 Make revisions to Plan as directed by Departmental Representative.
 - .6 Implement and manage all aspects of Waste Management Workplan for duration of work.
 - .7 Revise Plan as work progresses addressing new opportunities for diversion of waste from landfill.

1.4 WASTE AUDIT

- .1 At project start-up, conduct waste audit of:
 - .1 Site conditions identifying salvageable and non-salvageable items and waste resulting from demolition and removal work.
 - .2 Projected waste resulting from product packaging and from material leftover after installation work.
- .2 Develop written list. Record type, composition and quantity of various salvageable items and waste anticipated, reasons for waste generation and operational factors which contribute to waste.

1.5 WASTE REDUCTION

- .1 Based on waste audit, develop waste reduction program.
- .2 Structure program to prioritize actions, with waste reduction as first priority, followed by salvage and recycling effort, then disposal as solid waste.
- .3 Identify materials and equipment to be:
 - .1 Protected and turned over to Departmental Representative when indicated.
 - .2 Salvaged for resale by Contractor.
 - .3 Sent to recycling facility.
 - .4 Sent to waste processing/landfill site for their recycling effort
 - .5 Disposed of in approved landfill site.
- .4 Reduce construction waste during installation work. Undertake practices which will minimize waste and optimize full use of new materials on site, such as:
 - .1 Use of a central cutting area to allow for easy access to off-cuts;
 - .2 Use of off-cuts for blocking and bridging elsewhere.
 - .3 Use of effective and strategically placed facilities on site for storage and staging of left-over or partially cut materials (such as gypsum board, plywood, ceiling tiles, insulation etc...) to allow for easy incorporation into work whenever possible avoiding unnecessary waste.
- .5 Develop other strategies and innovative procedures to reduce waste such as minimizing the extent of packaging used for delivery of materials to site etc.

1.6 MATERIAL SOURCE
SEPARATION PROCESS

- .1 Develop and implement material source separation process at commencement of work as part of mobilization and waste management at site.
- .2 Provide on-site facilities to collect, handle and store anticipated quantities of reusable, salvageable and recyclable materials.
 - .1 Use suitable containers for individual collection of items based on intended purpose.
 - .2 Locate to facilitate deposit but without hindering daily operations of existing building tenants.
 - .3 Clearly mark containers and stockpiles as to purpose and use.
- .3 Perform demolition and removal of existing building components and equipment following a systematic deconstruction process.
 - .1 Separate materials and equipment at source, carefully dismantling, labelling and stockpiling alike items for the following purposes:
 - .1 Reinstallation into the work where indicated.
 - .2 Salvaging reusable items not needed in project which Contractor may sell to other parties. Sale of such items not permitted on site.
 - .3 Sending as many items as possible to locally available recycling facility.
 - .4 Segregating remaining waste and debris into various individual waste categories for disposal in a "non-mixed state" as recommended by waste processing/landfill sites.
- .4 Isolate product packaging and delivery containers from general waste stream. Send to recycling facility or return to supplier/manufacturer.
- .5 Send leftover material resulting from installation work for recycling whenever possible.
- .6 Establish methods whereby hazardous and toxic waste materials, and their containers, encountered or used in the course work are properly isolated, stored on site and disposed in accordance with applicable laws and regulations from authorities having jurisdiction.

- .7 Isolate and store existing materials and equipment identified for re-incorporation into the Work. Protect against damage.

1.7 WORKER TRAINING AND SUPERVISION

- .1 Provide adequate training to workforce, through meetings and demonstrations, to emphasize purpose and worker responsibilities in carrying out the Waste Management Plan.
- .2 Waste Management Coordinator: designate full-time person on site, experienced in waste management and having knowledge of the purpose and content of Waste Management Plan to:
 - .1 Oversee and supervise waste management during work.
 - .2 Provide instructions and directions to all workers and subcontractors on waste reduction, source separation and disposal practices.
- .3 Post a copy of Plan in a prominent location on site for review by workers.

1.8 CERTIFICATION OF MATERIAL DIVERSION

- .1 Submit to Departmental Representative, copies of certified weigh bills from authorized waste processing sites and sale receipts from recycling/reuse facilities confirming receipt of building materials and quantity of waste diverted from landfill.
- .2 Submit data at pre-determined project milestones as determined by Departmental Representative.
- .3 Compare actual quantities diverted from landfill with projections made during waste audit.

1.9 DISPOSAL REQUIREMENTS

- .1 Burying or burning of rubbish and waste materials is prohibited.
- .2 Disposal of waste, volatile materials, mineral spirits, oil, or paint thinner into waterways, storm, or sanitary sewers is prohibited.
- .3 Dispose of waste only at approved waste processing facility or landfill sites approved by authority having jurisdiction.
- .4 Contact the authority having jurisdiction prior to commencement of work, to determine what, if

any, demolition and construction waste materials have been banned from disposal in landfills and at transfer stations. Take appropriate action to isolate such banned materials at site of work and dispose in strict accordance with provincial and municipal regulations.

- .5 Transport waste intended for landfill in separated condition, following rules and recommendations of Landfill Operator in support of their effort to divert, recycle and reduce amount of solid waste placed in landfill.
- .6 Collect, bundle and transport salvaged materials to be recycled in separated categories and condition as directed by recycling facility. Ship materials only to approved recycling facilities.
- .7 Sale of salvaged items by Contractor to other parties not permitted on site.

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- 1.1 SECTION INCLUDES .1 Administrative procedures preceding inspection and acceptance of Work by Departmental Representative.
- 1.2 RELATED SECTIONS .1 Section 01 78 00 - Closeout Submittals.
- 1.3 INSPECTION AND DECLARATION .1 Contractor's Inspection: Coordinate and perform, in concert with subcontractors, an inspection and check of all Work. Identify and correct deficiencies, defects, repairs and perform outstanding items as required to complete work in conformance with Contract Documents.
.1 Notify Departmental Representative in writing when deficiencies from Contractor's inspection have been rectified and that Work is deemed to be complete and ready for Departmental Representative's inspection of the completed work.
.2 Departmental Representative's Inspection: Accompany Departmental Representative during all substantial and final inspections of the Work.
.1 Address defects, faults and outstanding items of work identified by such inspections.
.2 Advise Departmental Representative when all deficiencies identified have been rectified.
.3 Note that Departmental Representative will not issue a Certificate of Substantial Performance of the work until such time that Contractor performs following work and turns over the specified documents:
.1 Project record as-built documents;
.2 Final Operations and Maintenance manuals;
.3 Maintenance materials, parts and tools;
.4 Compliance certificates from applicable authorities;
.5 Reports resulting from designated tests;
.6 Demonstration and training complete with user manuals;
.7 Manufacturer's Guarantee certificates.
.8 Testing, adjusting and balancing of equipment and systems complete with submission of test reports.
.9 Commissioning of equipment and systems specified.

- .4 Correct all discrepancies before Departmental Representative will issue the Certificate of Completion.

1.1 GENERAL

- .1 Submit closeout documents specified in this section prior to application for Certificate of Substantial Performance of the Work.
- .2 Submit data in sufficient lead time to allow adequate review by Departmental Representative.
- .3 Make revisions to data as directed by Departmental Representative based on review.

1.2 PROJECT RECORD DOCUMENTS

- .1 Departmental Representative will provide 2 white print copies of contract drawings specifically to record "as-built" conditions.
- .2 Maintain 1 set at site and record actual built conditions.
- .3 Mark each drawing with up-to-date, real time as-built conditions as work progresses.
- .4 Maintain drawings in good condition and make available for inspection by the Departmental Representative whenever requested.
- .5 Record changes in red ink on the prints. Mark only on 1 set of drawings and transfer data to other set at completion of project.
 - .1 Neatly transfer notations to second set also by use of red ink.
 - .2 Stamp all drawings of both sets with the notation "As-Built Drawings". Also sign and date drawings.
 - .3 Indicate all modifications, substitutions and deviations from that shown on the Contract Drawings or in Specifications.
- .6 Record following information:
 - .1 Field changes to dimensions and details;
 - .2 Any additional details produced in the course of the contract by the Departmental Representative to supplement or to change existing design drawings;
 - .3 All Change Orders issued, documenting accurately and consistently the changed condition as it applies to all affected drawing details.
- .7 Maintain As-built documents current as the contract progresses.
- .8 Submit both sets of as-builts drawings.

1.3 OPERATIONS &
MAINTENANCE DATA

- .1 Submit 3 copies of Operations and Maintenance (O&M) manual(s).
- .2 O&M manuals to be hard cover three ring binder for 215 x 280 mm size paper. Each copy shall contain:
 - .1 Technical data for installation, operations and maintenance of products and systems supplied in project.
 - .2 Nameplate information for mechanical and electrical equipment.
 - .3 List of spare parts and tools.
 - .4 Original or certified copy of warranties and manufacturer's product guarantees.
 - .5 Reports of any field test.
 - .6 Complete set of reviewed shop drawings.
- .3 Provide cover sheet in each manual with:
 - .1 Project name and number
 - .2 Name and address of Contractor and subcontractors
 - .3 Date of submission
 - .4 Table of contents
- .4 Manuals to be in English language.

1.4 TOOLS AND
PARTS

- .1 Supply special tools, wrenches and spare parts as supplied by manufacturer to disassemble, remove and reinstall components as needed for maintenance purposes.
- .2 Tag all items with name of associated equipment and function.
- .3 Turn items over to Departmental Representative immediately upon completion of work.
- .4 Where required, provide manufacturer's written instructions on intent and method of use.
- .5 Provide name, address and telephone number of nearest supplier.
- .6 Prepare and include complete inventory list of items supplied into the maintenance manuals.

1.5 CONDITIONS FOR
DEMONSTRATIONS

- .1 Prior to carrying out demonstration and training, ensure that equipment has been inspected and tested, is fully operational, has been performance verified and TAB has been carried out.
- .2 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

1.6 PREPARATION

- .1 Verify that conditions for demonstration and instructions comply with requirements.
- .2 Verify that designated personnel are present.

1.7 DEMONSTRATION
AND INSTRUCTIONS

- .1 Include the following items within the demonstration and training:
 - .1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each of equipment.
 - .2 Instruct personnel in all phases of operation and maintenance using operation and maintenance manuals as the basis of instruction.
 - .3 Review contents of manual in detail to explain all aspects of operation and maintenance.
 - .4 Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instructions.
 - .5 Provide other specific training and instructions as specified in trade sections.

1.8 TIME ALLOCATED
FOR INSTRUCTIONS

- .1 Observe the allocated time period specified in trade sections. Provide additional time when required to ensure all personnel fully understand all aspects of the information and instructions being provided. Allow for questions by participants.

1.1 SECTION
INCLUDES

- .1 This section deals with commissioning activities to occur during the construction stage and the early period of facility occupancy stage.
- .2 Section includes:
 - .1 Commissioning activities to be performed by the Contractor who is assigned membership on a Commissioning Team as part of the contract requirements.
 - .2 Commissioning activities to be performed by other members of the Commissioning Team.
- .3 In general, Contractor's commissioning activities consists of performing specified tasks and functions to assist the Commissioning Agent, along with other members of the commissioning team who will commission various components and systems of the Facility.

1.2 RELATED
SECTIONS

- .1 Operations and Maintenance Manuals: Section 01 78 00.
- .2 Demonstration and Training: Section 01 79 00

1.3 BACKGROUND
INFORMATION

- .1 Historically in the past, the term commissioning has been used in reference to the process used to conduct testing, adjusting and balancing of the heating, ventilation and air conditioning (HVAC) systems of a building.
- .2 Commissioning (or the commissioning process), as understood by PWGSC, is a planned program of activities conducted in concert with other activities performed during each stage of project delivery.
 - .1 The commissioning process identifies issues during the Planning and Design stages which are addressed during the Construction and Occupancy Stages of a Facility to ensure that the built facility is constructed and proven to operate satisfactorily under all weather, environmental and occupancy conditions to meet operational and user requirements.
 - .2 Commissioning activities during the Construction stage incorporates a third party verification process and a transfer of critical operational knowledge to Facility personnel.

1.4 COMMISSIONING
OBJECTIVES

- .1 A Commissioning Plan will be prepared by the Design Consultant, on behalf of PWGSC, which identifies, among other issues, specific commissioning activities to be carried out by the commissioning team during the Construction and Occupancy Stages of the project.
- .2 The commissioning activities have the following objectives:
 - .1 Collect data on equipment and systems being supplied and document their installation;
 - .2 Conduct checks and tests on fully installed building components, equipment, systems and integrated systems to:
 - .1 Verify whether they operate in accordance with requirements of Contract Documents;
 - .2 Verify performance against design criteria and user requirements and measure peak capacities;
 - .3 Prepare a Building Management Manual (BMM) which contains operations and maintenance data, as-built record documents, commissioning reports, training data and other critical information for future use by Facility operational staff;
 - .4 Ensure transfer of knowledge on the operations, maintenance and management of the Facility to Tenant and Operational personnel by means of appropriate training.
- .3 Work to achieve the above objectives requires a collaborative effort from all members of the commissioning team.
 - .1 Contractor's commissioning activities and responsibilities are described in Clause 1.8 below.
- .4 Commissioning activities performed by the Commissioning Agent and the Design Consultant does not replace checks, tests, adjustments, balancing and other performance verification procedures to be carried out by the Contractor as an integral part of performing the Work of this contract as specified in other sections of the Specifications.

1.5 SYSTEMS TO BE
COMMISSIONED

- .1 The following systems and controls, complete with associated equipment and components, will be commissioned and requires related commissioning activities to be performed by Contractor as specified herein and in section(s):
 - .1 Mechanical
 - .2 Electrical
 - .3 Millwork
 - .4 Finishes

1.6 DEFINITIONS

- .1 For the purpose of this contract, the various terms listed below, as they relate directly or indirectly to the commissioning process, shall be deemed to have the following meaning.
- .2 Commissioning Process: a planned program of tasks, activities and procedures carried out systematically during the Construction and Occupancy Stages in accordance with the commissioning objectives, specified in clause 1.4.2 above, to:
 - .1 Verify whether the fully installed equipment, systems and integrated systems operate in accordance with contract documents and design criteria and;
 - .2 Ensure that appropriate documentation is compiled to effectively train O& M staff and prepare a comprehensive Building Management Manual (BMM).
- .3 Commission (ie: to commission a building component or system): tests and checks conducted by Commissioning Agent on all systems and integrated systems of Facility; carried out only after they are fully installed, functional and Contractor's Performance Verification responsibilities have been completed and approved.
 - .1 Contractor provides assistance during this process by operating equipment and systems, by troubleshooting and making adjustments as may be required.
 - .2 Systems are run under their full operation and under various modes to determine if they function correctly, consistently, at peak efficiency and interactively with each other as intended in accordance with Contract Documents and design criteria.
 - .3 During these checks, adjustments may be made enhancing performance to meet environmental or

user requirements.

- .4 Commissioning Manager: a AAFC departmental employee providing advice and guidance on commissioning requirements to the Commissioning Agent in support to the Departmental Representative.
- .5 Commissioning Plan: The document which describes the organization, scheduling, allocation of resources, required documentation, target dates, and team roles and responsibilities for verification that the built works meet Contract Document and design criteria requirements.
- .6 Contractor: means the General Contractor, however it also refers to any personnel from subcontractors, including the controls and TAB specialists, suppliers and manufacturer's technical persons which Contractor employs to carry out his/her designated commissioning duties and activities.
- .7 Design Consultant: persons from the, architectural, mechanical and electrical design disciplines of the engineering firm(s) which have been engaged by the Departmental Representative to prepare the final design and produce the contract documents. Design Consultant also has specifically identified commissioning activities for this project.
- .8 Design Criteria: All those factors included in the design of a Facility prescribed by the tenant needs or as determined by Designer as necessary in order to meet all Facility functional and user operational requirements
- .9 Installation/Start-up Checks: (sometimes referred to as pre-functional checks) A written compilation of checks and inspections to be performed by Contractor during the pre-start-up and start-up of a particular equipment or system component.
 - .1 Checklist sheets are produced which include the following data:
 - .1 Product manufacturer's installation instructions and recommended checks and;
 - .2 Special procedures as specified in relevant sections of Specifications;
 - .3 Other items considered good installation and engineering industry

- practices deemed appropriate for proper and efficient operation.
- .2 Standard Installation/Start-up Checklist sheets prepared by equipment manufacturer are acceptable for use. However, supplement with additional data representative of specific project conditions as deemed required by Commissioning Agent.
- .3 Use Checklist sheets for all equipment installation. Document in writing on checklist the various checks made, deficiencies noted and corrective action taken.
- .4 Installer to sign Checklist sheets upon completion, certifying that stated checks and inspections have been performed.
- .5 Use of Installation/Start-up Checklists shall not be considered part of the commissioning process but shall be stringently used for all equipment pre-start and start-up procedures.
- .6 Return completed Installation/Start-up Checklist sheets after use to Commissioning Agent for retention. Checklists are required by Commissioning Agent when Facility is commissioned and will be included in the BMM manual at completion of project.
- .10 Performance Verification: (sometimes referred to Functional Testing) checks, running dynamic tests and adjustments carried out by Contractor on equipment and systems, upon their installation, to ensure they operate correctly, efficiently and function independently and interactively with other systems as intended in accordance with contract documents and manufacturer's recommendations.
- .1 Performance Verification shall not be considered part of the commissioning process. It is however considered an essential and integral part of Contractor's responsibilities in the equipment installation process which must be stringently conducted, successfully completed and approved by Departmental Representative before a piece of equipment or system is considered fully installed and functional.
- .2 Facility components and systems will not be commissioned by Commissioning Agent until performance verification has been completed and approved.
- .11 Performance Verification Report Sheets (PV sheets): forms developed by Commissioning Agent for Contractor's use to record measured data and

readings taken during functional testing and Performance Verification procedures.

- .12 Product Information (PI Data): a compilation of data gathered on a particular piece of equipment, typically produced by manufacturer, which includes nameplate information, installation/startup instructions, parts list, operating instructions, maintenance guidelines and other pertinent technical data and recommended checks that is necessary to prepare for start-up and functional testing and used during operation and maintenance of such equipment. This documentation is included in the Building Management Manual (BMM) at completion of work.

1.7 COMMISSIONING
TEAM

- .1 A commissioning team will be assembled to carryout various functions needed to effectively commission the Facility. Contractor shall be part of this team with duties and responsibilities as specified in this section and in other sections of the Specifications.
- .2 Members of the Commissioning Team are as follows:
 - .1 Design Consultants
 - .2 Contractor
 - .3 Contractors Commissioning Supervisor
 - .4 Agriculture & Agri-Food Canada Commissioning Manager
 - .5 Agriculture & Agri-Food Canada departmental personnel providing advice and project quality control to Departmental representative when required.
 - .6 Facility's operation and maintenance personnel staff as identified by Departmental Representative.
- .3 Effective commissioning requires coordination between members of the commissioning team. Cooperate with other team members in fulfilling assigned duties and as follows:
 - .1 Communicate commissioning objectives, to subcontractors, suppliers and manufacturers.
 - .2 Coordinate activities between subcontractors and trades as needed to carryout Contractor's assigned commissioning activities.
 - .3 Ensure attendance of subcontractors and required specialist at commissioning meetings and during the commissioning process.

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- .4 Construction Commissioning Supervisor:
 - .1 Assign a person, under Contractor's employ, to be the Construction Commissioning Supervisor.
 - .2 Person to be knowledgeable and have past experience in commissioning of mechanical and electrical systems. Submit affidavit confirmation person's qualifications for Departmental Representative's review and approval.
 - .3 Construction Commissioning Supervisor to coordinate and oversee all work activities and input required from subcontractors and applicable trades as required to make equipment, subsystems and system ready for commissioning and to conduct commissioning duties assigned to the Contractor.
 - .4 Construction Commissioning Supervisor shall:
 - .1 Be the main point of contact, representing the Contractor, with whom the Commissioning Agent and Departmental Representative will to deal with in matters relating to commissioning.
 - .2 Attend all commissioning meetings and ensure that appropriate persons from subcontractors, trades, suppliers and manufacturers attend meetings when deemed required by Commissioning Agent or Departmental Representative.
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- 1.8 CONTRACTOR'S COMMISSIONING ACTIVITIES
 - .1 General:
 - .1 Organize and arrange for the services of subcontractors, their specialists and manufacturer's technical representatives to perform Contractor's commissioning activities
 - .2 Ensure that personnel forming part of the Commissioning Team are qualified and knowledgeable of installed equipment and systems and with design intent.
 - .3 Develop in conjunction with the Commissioning Agent a commissioning schedule as specified in clause 1.11.
 - .4 Notify Departmental Representative in writing when Facility is ready for be commissioned. Give 14 calendar day notice.
 - .5 Commissioning will only commence once that full documentation has been received and installed equipment and systems have undergone successful performance verification.
 - .6 Note that Certificate of Substantial Completion will only be issued when:
 - .1 All commissioning documentation has

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- been received and found suitable by Departmental Representative;
- .2 Designated equipment and systems have been commissioned and;
 - .3 Training has been completed.
- .7 Performance faults:
- .1 Equipment and systems found not operating correctly or not performing as intended during commissioning shall be re-verified by checking 100% of all equipment and components of the unfunctional system, including related controls as required to rectify the deficiencies and ensure correct performance.
 - .2 Costs to conduct additional tests and inspections, as deemed required by Departmental Representative, to determine acceptability and proper performance of such item to be paid for by Contractor.
- .2 Prior to Facility being Commissioned:
- .1 Submit commissioning documentation as specified in clause 1.13 below.
 - .2 Submit the Installation/Start-up Checklist sheets to Commissioning Agent for review prior to conducting the pre-start and start-up of any piece of equipment. Incorporate additional start-up instructions onto checklist as determined by the Commissioning Agent's review.
 - .3 Conduct the pre-start and start-up of all equipment by following and filling out the approved Installation/Start-up Checklists.
 - .4 Conduct Performance Verification on all installed equipment and systems. Use and fill out the PV Report Sheets provided.
 - .5 Upon completion of start-up and performance verification process, submit signed copy of Checklist and PV sheets to Commissioning Agent as affidavit that required checks and tests were successfully conducted.
 - .6 Record performance measurements and data reading on PV sheets and return to Commissioning Agent for compilation.
 - .7 Give Departmental Representative and Design Consultants a minimum of 5 days' notice for start-up and performance verification of equipment and systems which must be witnessed by Departmental Representative as determined by Design Consultants beforehand on PV sheets.
 - .8 Provide missing information and data as identified by Commissioning Agent and

Departmental Representative during documentation review.

.9 Submit above noted documentation before Commissioning will proceed.

.10 Address deficiencies in Work identified during performance verification of equipment and systems. Conduct additional performance verification thereafter.

.11 Arrange for special tools and devices, identified at commissioning meeting(s), as deemed required to assist with commissioning.

.12 Provide access ladders, two way radios and other equipment required by Team when facility will be commissioned.

.3 When Facility is being Commissioned:

.1 Provide qualified tradespersons to be present at site to assist Commissioning Agent for the time period and commissioning activity specified.

.2 Assist in commissioning architectural building component, mechanical and electrical systems specified and as follows:

.1 Operate designated building component, mechanical/electrical equipment and system under all modes of operation and conduct checks and tests as directed by Commissioning Agent.

.2 Check and verify that building component, equipment, systems and integrated systems, including their controls, are functioning and responding correctly and interactively with each other.

.3 Test systems independently and then in unison with other related systems.

.4 Conduct all Commissioning checks and tests in presence of and witnessed by and Departmental Representative and Design Consultants.

.5 Assist Design Consultant and other members of the commissioning team who will also be present to commission Facility.

.3 Specific procedures used to commission Facility will be provided by Commissioning Agent which includes:

.1 Sequential order of building component and system to be tested.

.2 Running systems under various anticipated modes and demands (example: high and low cooling or heating loads, duplicating outside temperature

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- conditions, fire alarm and power failure conditions etc.).
- .3 Running building controls through all sequences of operation to verify and confirm that equipment and systems are responding as designed and intended.
 - .4 Operating designated equipment at peak capacities, recording output data against design criteria.
 - .4 Run component or systems as long as necessary to effectively commission all items as deemed required by Commissioning Agent and Departmental Representative.
 - .5 Monitor equipment and system responses.
 - .6 Record test results, measurements and other data on commissioning forms provided by Commissioning Agent.
 - .7 Assist in analyzing results. Identify system deficiencies and components not responding as intended.
 - .8 Correct deficiencies and system non-conformance issues. Adjust, calibrate or fine tune system components as required. Debug system software as may be required.
 - .9 Retest systems when directed to confirm compliance.
- .4 Upon completion of Facility Commissioning:
- .1 Provide training to maintenance & operational personnel as specified in clause 1.12 below.
 - .2 Turn over any filled-in checks sheets or reports resulting from commissioning.
- .5 During Warranty period at Occupancy Stage:
- .1 After 10 months has elapsed from the commencement of the warranty period, conduct commissioning checks on the building components and systems.
 - .2 Fine tune components, systems and integrated systems and continue system debugging to optimize Facility performance.
 - .3 Rectify warranty issues.
 - .4 Submit written report to Commissioning Agent and Departmental Representative.
 - .1 Indicate results noted and corrective action taken.
 - .2 Note improvements made to operating parameters and control settings.
 - .3 Recommend modifications deemed advisable to improve performance, environmental conditions, energy

consumptions and other issues.

.5 Commissioning Agent and other team members as determined by Departmental Representative to be present during such work.

1.9 COMMISSIONING
ACTIVITIES OF
OTHER TEAM MEMBERS

- .1 Commissioning Lead:
- .1 Represents the Departmental Representative during the commissioning process.
 - .2 Coordinates activities of the commissioning team members to ensure that commissioning activities are carried out properly and in a timely manner.
 - .3 Prepares commissioning schedule in concert with Contractor.
 - .4 Chairs commissioning meetings.
 - .5 Works with Contractor, subcontractors, equipment suppliers, Design Consultant resources, PWGSC and Tenant Representatives to resolve technical problems which may arise during the process.
 - .6 Witnesses Contractor's pre-start, start-up and performance verification procedures for certain equipment and systems specified when deemed required due to their critical nature and function in the Facility.
 - .7 Verifies that Installation/Start-up Checklists and Performance Verification checks and tests are used and stringently followed by Contractor.
 - .8 Assists Contractor in coordination of training activities for facility staff.
 - .9 Submits final commissioning report to Departmental Representative.
- .2 Design Consultants:
- .1 Prepares the Commissioning Plan.
 - .2 Reviews Contractor's Installation/Start-up Checklists for completeness, incorporating supplement data not addressed on checklist. Provides to Contractor checklist for products which manufacturer does not provide installation and start-up instructions.
 - .3 Develops performance verifications report sheets for use by Contractor to record actual data and measurements against design data criteria.
 - .4 Includes, on performance verification report sheets, design data and anticipated performance values for equipment and systems to undergo verification.
 - .5 Compiles commissioning documentation submitted by Contractor. Prepares final Building

Management Manuals.

.6 Assists in witnessing pre-start, start-up and performance verification activities.

.7 Approves type and method of calibration for instruments used by Contractor to conduct performance verification and commissioning tests.

.8 Assists in reviewing and analyzing tests results.

.9 Participate in the training sessions provided by Contractor to tenant O&M staff by giving introductory information on design philosophy, design intent and systems designs,

.10 Assist in the resolution of issues relating to commissioning.

.3 User Representative:

.1 Participates with other team members to ensure that systems as installed meet the operational and functional requirements.

.2 Periodically attends commissioning meetings as required.

.3 Attends final commissioning activities.

.4 Assists in resolving technical problems by providing additional details on operational requirements.

.4 Facility Operations and Maintenance Staff:

.1 Participates in the commissioning process to obtain early introduction to the facility systems and to provide early operator feedback.

.2 Prime interest is in the familiarization and training of appropriate maintenance staff.

.3 Staff may attend certain critical equipment start-up and performance verification activities and provide comments and practical suggestions on issues which may arise during actual operation, maintenance and repair of the equipment and systems.

.4 Attends commissioning meetings periodically, depending on issues being discussed.

.5 Identifies the appropriate staff which must receive the O & M training.

1.10 COMMISSIONING MEETINGS

.1 General briefing on commissioning will be conducted at first project construction meeting at commencement of work.

.1 Issues discussed will include scope and extent of commissioning and clarify responsibilities of commissioning team members.

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- .2 All team members must attend, including subcontractors of equipment and systems to be commissioned.
 - .2 Include commissioning as one agenda item at each construction meeting held and chaired by Contractor during construction. Give subject due consideration for each material and equipment supplied and for all matters of Work.
 - .3 At the 60% construction completion stage, as determined by Departmental Representative, a separate commissioning scope meeting will be called by Departmental Representative to review progress of work, discuss schedule of equipment start-up activities and prepare for upcoming commissioning. Issues at meeting will include:
 - .1 Review duties and responsibilities of Contractor and subcontractors, addressing delays and potential problems.
 - .2 Determine the degree of involvement of each trade and manufacturer's representatives in the commissioning process.
 - .4 Separate commissioning meetings will be held from the 60% construction stage to project completion. Meetings are tentatively scheduled to be held on a bi-monthly basis but may be more frequent during the equipment start-up and functional testing period.
 - .5 Whenever possible meetings will be held immediately following the construction meetings.
 - .6 Meeting will be chaired by Departmental Representative, who will record and distribute minutes.
 - .7 Ensure that all subcontractors and relevant manufacturer representatives are present at the 60% commissioning scope meeting and at other meetings as deemed required.
- 1.11 COMMISSIONING
SCHEDULE
- .1 Address commissioning activities within the construction work schedule. Clearly identify allocated time period for commissioning and training activities.
 - .2 Provide a separate independent commissioning schedule at the 60% construction stage in order that specific issues and individual details of commissioning can be reviewed, discussed and

dealt with from that period onward to project completion. Submit monthly updates thereafter,

- .3 Develop commissioning schedule in conjunction with Commissioning Agent. Indicate allocated time period and anticipated dates for:
 - .1 Submission of commissioning documentation, including O&M Manuals.
 - .2 Equipment and system start-up and performance verification, making them ready to be commissioned.
 - .3 Allocated period to commission designated building components and systems.
 - .4 Training period.
 - .5 Work during Warranty period.
- .4 Submit schedule to Departmental Representative for review.

1.12 TRAINING

- .1 Commence process of familiarizing users and O&M personnel in the early stages of work on purpose and operation of various equipment and systems. Continue process throughout the entire construction duration.
 - .1 Provide informal briefings during occasional site visits, at planned commissioning meetings and during the final commissioning site activities.
- .2 Conduct formal demonstration and training sessions' only after all identified systems have been commissioned by Commissioning Agent and Departmental Representative has given approval to proceed with the training process.
- .3 Provide training and demonstration on equipment, sub-systems, systems and integrated systems as specified.
- .4 Carryout training in accordance with requirements of section 01 79 00.
- .5 Submit written agenda of training session(s) 4 weeks beforehand for review by Departmental Representative and Design Consultants.
- .6 Coordinate content with Commissioning Agent. Design Consultant will provide introductory presentation giving general outline of each system design and intended function.

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- .7 Submit training manuals for review 2 weeks prior to actual training.
 - .8 Ensure required tools and O&M Manuals are on site for training and system demonstration.
 - .9 As a minimum, the training sessions to cover the following information:
 - .1 Introduction.
 - .2 Description of the system with factory personnel being involved at appropriate times.
 - .3 Instructions on start-up procedures including seasonal procedures, system check-lists and emergency procedures.
 - .4 Operational procedures, including occupancy considerations, seasonal change-over, manual and automatic operations and emergency modes.
 - .5 Instruction on system shutdowns, including checklists.
 - .6 Instructions on all aspects of system maintenance, including routine servicing, lubrication, overhaul and factory servicing.
 - .7 Information concerning the scope of warranties and their use.
 - .8 A description of spare parts in stock and their service.
 - .9 A description of normal tools required for servicing the systems/equipment.
 - .10 Submit typewritten record of training sessions given and list of attendees. Use forms of format approved by Departmental Representative.
- 1.13 COMMISSIONING DOCUMENTATION
- .1 Submit the following documentation for use during commissioning and for incorporation thereafter into a Building Management Manual (BMM):
 - .1 Operations and Maintenance Manuals, Project Record Documents and other data as specified in Section 01 78 00. Data to include:
 - .1 Equipment Product Information (PI Data) complete with:
 - .1 Nameplate info,
 - .2 Installation instructions,
 - .3 Operating procedures and
 - .4 Maintenance guidelines.
 - .2 Reviewed shop drawings,
 - .3 As-built record drawings and Specifications.
 - .2 Completed Installation/Start-up Checklist sheets used.

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- .3 Performance Verifications checks and tests procedures and completed report sheets used.
 - .4 Copy of any static and dynamic test and reports conducted.
 - .5 TAB report and other reports as specified in various trade sections.
 - .2 Above documentation is required by Commissioning Agent to commission Facility. Submit data minimum 3 weeks before commencement of commissioning.
 - .3 Documentation to include detailed information and number of copies as specified for maintenance manuals of section 01 78 00.
 - .4 Commissioning Lead and Design Consultant will compile above documentation and produce a BMM manuals for operation/maintenance staff and tenant use.

PART 1 GENERAL

- 1.1 REFERENCES .1 Canadian Standards Association (CSA International)
- .1 CSA S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.
- 1.2 SUBMITTALS .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings:
- .1 Provide shop drawings and product data in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Before proceeding with demolition of load bearing walls or of other walls and where required by authority having jurisdiction submit for review by Departmental Representative shoring and underpinning drawings prepared by qualified professional engineer registered or licensed in the Province of Newfoundland and Labrador in Canada showing proposed method.
- .4 Prior to beginning of Work on site submit detailed Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal and indicate:
- .1 Descriptions of and anticipated quantities in percentages of materials to be salvaged reused, recycled and landfilled.
- .2 Schedule of selective demolition.
- .3 Number and location of dumpsters.
- .4 Anticipated frequency of tippage.
- .5 Name and address of haulers waste facilities waste receiving organizations.
- 1.3 DELIVERY, STORAGE AND HANDLING .1 Waste Management and Disposal:
- .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- 1.4 SITE .1 Review designated substance report (Appendix

- CONDITIONS
- "A") and take precautions to protect environment.
 - .2 Should material resembling spray or trowel-applied asbestos or other designated substance listed as hazardous other than that noted in Appendix "A" be encountered, stop work, take preventative measures, and notify Departmental Representative immediately.
 - .1 Do not proceed until written instructions have been received from Departmental Representative.
 - .3 Notify Departmental Representative before disrupting building access or services.

PART 2 PRODUCTS

- 2.1 EQUIPMENT
- .1 Demonstrate that tools and machinery are being used in manner which allows for salvage of materials in best condition possible.

PART 3 EXECUTION

- 3.1 PREPARATION
- .1 Do Work in accordance with Section 01 35 28 - Health and Safety Requirements.
 - .2 Protection:
 - .1 Prevent movement, settlement, or damage to adjacent structures, utilities, and parts of building to remain in place. Provide bracing and shoring required.
 - .2 Keep noise, dust, and inconvenience to occupants to minimum.
 - .3 Protect building systems, services and equipment.
 - .4 Provide temporary dust screens, covers, railings, supports and other protection as required.
 - .3 Disconnect and re-route electrical, telephone and communication service lines. Post warning signs on electrical lines and equipment which must remain energized to serve other products during period of demolition.
 - .4 Locate and protect utility lines. Do not disrupt active or energized utilities traversing premises designated to remain undisturbed.

- .5 Disconnect and cap designated mechanical services.
- 3.2 DEMOLITION SALVAGE AND DISPOSAL
- .1 Remove parts of existing building to permit new construction. Sort materials into appropriate piles for recycling.
- .2 Trim edges of partially demolished building elements to tolerances as defined by Departmental Representative to suit future use.
- .3 Dispose of removed materials, to appropriate recycling facilities except where specified otherwise, in accordance with authority having jurisdiction.
- 3.3 PARTIAL DEMOLITION OF STRUCTURES
- .1 Refer to drawings.
- 3.4 STOCKPILING
- .1 Stockpile off site.
- 3.5 REMOVAL FROM SITE
- .1 Transport material designated for alternate disposal by approved haulers and facilities listed in waste reduction workplan and in accordance with applicable regulations. Do not deviate from haulers and facilities receiving organizations listed in waste reduction workplan without prior written authorization from Departmental Representative.
- .2 Dispose of materials not designated for alternate disposal in accordance with applicable regulations. Disposal facilities must be approved of and listed in waste reduction workplan. Do not deviate from disposal facilities listed in waste reduction workplan without prior written authorization from Departmental Representative.

PART 1 GENERAL

- 1.1 SUMMARY
- .1 Removal or partial removal or cutting or any interference with asbestos containing materials.
 - .2 Complete removal of all partitions and wall and ceiling finishes and suspended systems to expose backup clay masonry wall and partition finishes backup and to expose structure above ceiling finish and suspended system. Consider these materials which are to be 100% demolished, to contain asbestos.
 - .3 Complete removal of existing flooring, bases, setting beds and adhesives which shall be considered to contain asbestos.
- 1.2 REFERENCES
- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.205-94, Sealer for Application of Asbestos Fibre Releasing Materials.
 - .2 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
 - .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
 - .4 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
 - .5 Underwriters' Laboratories of Canada (ULC)
 - .6 Appendix "A" - Asbestos Management Plan
- 1.3 DEFINITIONS
- .1 Amended Water: water with non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.
 - .2 Asbestos Containing Materials (ACMs): materials that contain 0.5 0.1 provincial regulated amount per cent or more asbestos by dry weight and are identified under Existing Conditions including fallen materials and

- settled dust.
- .3 Asbestos Work Area: area where work takes place which will, or may disturb ACMs.
 - .4 Authorized Visitors: designated representatives, and representatives of regulatory agencies.
 - .5 Competent worker person: in relation to specific work, means a worker who:
 - .1 Is qualified because of knowledge, training and experience to perform the work.
 - .2 Is familiar with the federal laws and with the provisions of the regulations that apply to the work.
 - .3 Has knowledge of all potential or actual danger to health or safety in the work.
 - .6 Friable Materials: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.
 - .7 Glove Bag: prefabricated glove bag as follows:
 - .1 Minimum thickness 0.25 mm polyvinyl-chloride bag.
 - .2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.
 - .3 Equipped with reversible double pull double throw zipper on top and at approximately mid-section of the bag.
 - .4 Straps for sealing ends around pipe.
 - .8 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any dimension at 99.97% efficiency.
 - .9 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
 - .10 Occupied Area: any area of building or work site that is outside Asbestos Work Area.
 - .11 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along

edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.

- .12 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for scope of work.

1.4 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of asbestos containing waste in accordance with requirements of authority having jurisdiction.
- .3 Submit Provincial/Territorial and/or local requirements for Notice of Project Form.
- .4 Submit proof of Contractor's Asbestos Liability Insurance.
- .5 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos containing waste and proof that asbestos containing waste has been received and properly disposed.
- .6 Submit proof satisfactory to Departmental Representative that all asbestos workers have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene, entry and exit from Asbestos Work Area, aspects of work procedures and protective measures while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing.
- .7 Submit proof that supervisory personnel have attended asbestos abatement course, of not less than two days duration, approved by Departmental Representative. Minimum of one supervisor for every ten workers.
- .8 Submit Worker's Compensation Board status and transcription of insurance.
- .9 Submit documentation including test results, fire and flammability data, and Material

Safety Data Sheets (MSDS) for chemicals or materials including:

- .1 Encapsulants;
 - .2 Amended water;
 - .3 Slow drying sealer.
- .10 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.

1.5 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at the time work is performed.
- .2 Health and Safety:
- .1 Do construction occupational health and safety in accordance with Section 01 35 28 - Health and Safety Requirements.
 - .2 Safety Requirements: worker and visitor protection.
 - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area include:
 - .1 Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and

inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.

- .2 Disposable type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing to consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing. It includes suitable footwear, and it to be repaired or replaced if torn.
- .3 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.

- .4 Before leaving Asbestos Work Area, the worker can decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing, or, if the protective clothing will not be reused, place it in a container for dust and waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.
- .5 Ensure workers wash hands and face when leaving Asbestos Work Area. Facilities for washing are located as indicated on drawings.
- .6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.
- .7 Visitor Protection:
 - .1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.
 - .2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.
 - .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

1.6 WASTE
MANAGEMENT AND
DISPOSAL

- .1 Separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 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.

- .4 Separate for reuse recycling and place in designated containers steel metal plastic waste in accordance with Waste Management Plan.
- .5 Place materials defined as hazardous or toxic in designated containers.
- .6 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .7 Fold up metal banding, flatten and place in designated area for recycling.
- .8 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial/Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 mils bags or leak proof drums. Label containers with appropriate warning labels.
- .9 Provide manifests describing and listing waste created. Transport containers by approved means to licenced landfill for burial.

1.7 EXISTING
CONDITIONS

- .1 Reports and information pertaining to ACMS to be handled, removed, or otherwise disturbed and disposed of during this Project are bound into this specification.
- .2 Notify Departmental Representative of friable material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.8 SCHEDULING

- .1 Hours of Work: perform work involving asbestos outside of normal working hours. Include in Contract Sum additional costs due to this requirement.

1.9 PERSONNEL
TRAINING

- .1 Before beginning Work, provide Departmental Representative satisfactory proof that every

worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, in use of glove bag procedures, and in use, cleaning, and disposal of respirators and protective clothing.

- .2 Instruction and training related to respirators includes, at minimum:
 - .1 Fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Drop and Enclosure Sheets:
 - .1 Polyethylene: 0.25 mm thick.
 - .2 FR polyethylene: 0.25 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in concentration to provide thorough wetting of asbestos containing material.
- .3 Waste Containers: contain waste in two separate containers.
 - .1 Inner container: 0.28 mm thick sealable polyethylene bag or where glove bag method is used, glove bag itself.
 - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - .3 Labelling requirements: affix preprinted cautionary asbestos warning, in both official languages, that is visible when ready for removal to disposal site.
- .4 Glove bag:

- .1 Acceptable materials: safe-T-Strip products in configuration suitable for Work, or Alternative material approved by addendum during tendering period in accordance with Instructions to Tenderers.
- .2 The glove bag to be equipped with:
 - .1 Sleeves and gloves that are permanently sealed to the body of the bag to allow the worker to access and deal with the insulation and maintain a sealed enclosure throughout the work period.
 - .2 Valves or openings to allow insertion of a vacuum hose and the nozzle of a water sprayer while maintaining the seal to the pipe, duct or similar structure.
 - .3 A tool pouch with a drain.
 - .4 A seamless bottom and a means of sealing off the lower portion of the bag.
 - .5 A high strength double throw zipper and removable straps, if the bag is to be moved during the removal operation.
- .5 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.
- .6 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
 - .1 Sealer: flame spread and smoke developed rating less than 50 and be compatible with new fireproofing.
- .7 Encapsulant: penetrating type conforming to CAN/CGSB-1.205 ULC listed.

PART 3 EXECUTION

- 3.1 SUPERVISION .1 Minimum of one Supervisor for every ten

workers is required.

- .2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos-containing materials.

3.2 PROCEDURES

- .1 Do construction occupational health and safety in accordance with Section 01 35 28 - Health and Safety Requirements.
- .2 Before beginning Work, at each access to Asbestos Work Area, install warning signs in English language in upper case 'Helvetica Medium' letters reading as follows, where number in parentheses indicates font size to be used: 'CAUTION ASBESTOS HAZARD AREA (25 mm) / NO UNAUTHORIZED ENTRY (19 mm) / WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) / BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)'.
 - .3 Before beginning Work remove visible dust from surfaces in work area where dust is likely to be disturbed during course of work.
 - .1 Use HEPA vacuum or damp cloths where damp cleaning does not create hazard and is otherwise appropriate.
 - .2 Do not use compressed air to clean up or remove dust from any surface.
 - .4 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
 - .1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in work areas where dust or contamination cannot otherwise be safely contained.
 - .2 When removing suspended ceilings and walls themselves do not enclose work area and when removing asbestos containing material from piping or equipment and "glove bag" method is not used erect enclosure of polyethylene sheeting around work area, shut off mechanical ventilation system serving work area and seal ventilation ducts to and from work area.

- .5 Before removing asbestos containing materials, remove friable material on upper surfaces using HEPA vacuum equipment.
 - .1 Remove and clean surfaces of ceiling panels using HEPA vacuum, wrap clean panels in 0.10 mm thick polyethylene, and store in building as directed by Departmental Representative.
 - .2 Clean "T" grid suspension system, disconnect, wrap in 0.10 mm thick polyethylene, and store in building as directed by Departmental Representative.
- .6 Remove loose material by HEPA vacuum; thoroughly wet friable material containing asbestos to be removed or disturbed before and during Work unless wetting creates hazard or causes damage.
 - .1 Use garden reservoir type low - velocity sprayer or airless spray equipment capable of producing mist or fine spray.
 - .2 Perform Work in a manner to reduce dust creation to lowest levels practicable.
- .7 Pipe Insulation Removal Using Glove Bag:
 - .1 A glove bag not to be used to remove insulation from a pipe, duct or similar structure if:
 - .1 It may not be possible to maintain a proper seal for any reason including, without limitation:
 - .1 The condition of the insulation.
 - .2 The temperature of the pipe, duct or similar structure.
 - .2 The bag could become damaged for any reason including, without limitation.
 - .1 The type of jacketing.
 - .2 The temperature of the pipe, duct or similar structure.
 - .2 Upon installation of the glove bag, inspect bag for any damage or defects. If any damage or defects are found, the glove bag is to be repaired or replaced. The glove bag to be inspected at regular

intervals for damage and defects, and repair or replaced, as appropriately. The asbestos containing contents of the damaged or defective glove bag found during removal are to be wetted and the glove bag and its contents are to be removed and disposed of in an appropriate waste disposal container. Any damaged or defective glove bags are not be reused.

- .3 Place tools necessary to remove insulation in tool pouch. Wrap bag around pipe and close zippers. Seal bag to pipe with cloth straps.
- .4 Place hands in gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag.
- .5 Insert nozzle of garden reservoir type sprayer into bag through valve and wash down pipe and interior of bag thoroughly. Wet surface of insulation in lower section of bag.
- .6 To remove bag after completion of stripping, wash top section and tools thoroughly. Remove air from top section through elasticized valve using a HEPA vacuum. Pull polyethylene waste container over glove bag before removing from pipe. Release one strap and remove freshly washed tools. Place tools in water. Remove second strap and zipper. Fold over into waste container and seal.
- .7 After removal of bag ensure that pipe is free of residue. Remove residue using HEPA vacuum or wet cloths. Ensure that surfaces are free of sludge which after drying could release asbestos dust into atmosphere. Seal exposed surfaces of pipe and ends of insulation with slow drying sealer to seal in any residual fibres.
- .8 Upon completion of Work shift, cover exposed ends of remaining pipe insulation with polyethylene taped in place.
- .8 Work is subject to visual inspection and air

monitoring. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.

.9 Cleanup:

- .1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste using HEPA vacuum or by damp mopping.
- .2 Place dust and asbestos containing waste in sealed dust tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.
- .3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.
- .4 Seal and remove double bagged waste from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.
- .5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

3.3 AIR MONITORING

- .1 From beginning of Work until completion of cleaning operations, arrange and pay for the services of a licenced testing firm, take air samples on a daily basis outside of Asbestos Work Area enclosures in accordance with Provincial/Territorial Occupational Health and Safety Regulations.
 - .1 Contractor will be responsible for arrangement of and payout for testing firm monitoring inside and outside the enclosure in accordance with applicable Provincial/Territorial Occupational Health and Safety Regulations.

- .2 If air monitoring shows that areas outside Asbestos Work Area enclosures are contaminated, enclose, maintain and clean these areas in same manner as that applicable to Asbestos Work Area.
- .3 Ensure that respiratory safety factors are not exceeded.
- .4 During the course of Work, Departmental Representative to measure fibre content of air outside Work areas by means of air samples analyzed by Phase Contrast Microscopy (PCM).
 - .1 Stop Work when PCM measurements exceed 0.05 f/cc and correct procedures.

PART 1 GENERAL

1.1 REFERENCES

- .1 ASTM International
 - .1 ASTM A53/A53M-07, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - .2 ASTM A269-08, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 - .3 ASTM A307-07b, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .2 CSA International
 - .1 CSA G40.20/G40.21-04(R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CAN/CSA G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CSA S16-09, Design of Steel Structures.
 - .4 CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
 - .5 CSA W59-M03(R2008), Welded Steel Construction (Metal Arc Welding) Metric.
- .3 Environmental Choice Program
 - .1 CCD-047-98(R2005), Architectural Surface Coatings.
 - .2 CCD-048-98(R2006), Surface Coatings - Recycled Water-borne.
- .4 Green Seal Environmental Standards (GS)
 - .1 GS-11-2008, 2nd Edition, Paints and Coatings.
- .5 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .6 The Master Painters Institute (MPI)
 - .1 Architectural Painting Specification Manual - current edition.

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- 1.2 ACTION AND INFORMATIONAL SUBMITTALS
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- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for sections plates pipe tubing bolts and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 28 - Health and Safety Requirements 01 35 43 - Environmental Procedures.
 - .1 For finishes, coatings, primers, and paints applied on site: indicate VOC concentration in g/L.
 - .3 Shop Drawings:
 - .1 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.
- 1.3 QUALITY ASSURANCE
-
- .1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.
 - .2 Certifications: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- 1.4 DELIVERY, STORAGE AND HANDLING
-
- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written 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 off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.

- .4 Develop Construction Waste Management Plan
Waste Reduction Workplan related to Work of
this Section.
- .5 Packaging Waste Management: remove for reuse
and return by manufacturer of pallets,
crates, padding, and packaging materials as
specified in Construction Waste Management
Plan Waste Reduction Workplan in accordance
with Section 01 74 21 -
Construction/Demolition Waste Management and
Disposal.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Steel sections and plates: to CSA
G40.20/G40.21, Grade 350W.
- .2 Steel pipe: to ASTM A53/A53M standard weight.
- .3 Welding materials: to CSA W59.
- .4 Welding electrodes: to CSA W48 Series.
- .5 Bolts and anchor bolts: to ASTM A307.
- .6 Aluminum sheet: proprietary utility sheet
plain, 1.0 mm minimum thickness, finish,
colour clear.
- .7 Grout: non-shrink, non-metallic, flowable, 15
MPa at 24 hours.

2.2 FABRICATION

- .1 Fabricate work square, true, straight and
accurate to required size, with joints
closely fitted and properly secured.
- .2 Use self-tapping shake-proof flat headed
screws on items requiring assembly by screws
or as indicated.
- .3 Where possible, fit and shop assemble work,
ready for erection.
- .4 Ensure exposed welds are continuous for
length of each joint. File or grind exposed
welds smooth and flush.

2.3 FINISHES

- .1 Shop coat primer: MPI-INT EXT 5.1A MPI-INT
EXT 5.1B in accordance with chemical
component limits and restrictions

requirements and VOC limits of CCD-047a CCD-048 GS-11.

- .2 Zinc primer: zinc rich, ready mix to MPI-INT EXT 5.2C in accordance with chemical component limits and restrictions requirements and VOC limits of CCD-047a CCD-048 GS-11.

2.4 ISOLATION
COATING

- .1 Isolate aluminum from following components, by means of bituminous paint:

- .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
- .2 Concrete, mortar and masonry.
- .3 Wood.

2.5 SHOP
PAINTING

- .1 Primer: VOC limit 250 g/L maximum to GS-11 CCD-047a CCD-048.
- .2 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.
- .3 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7 degrees C.
- .4 Clean surfaces to be field welded; do not paint.

PART 3 EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for metal fabrications 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 ERECTION

- .1 Do welding work in accordance with CSA W59 unless specified otherwise.
- .2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.
- .3 Provide suitable means of anchorage acceptable to Departmental Representative such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.
- .4 Exposed fastening devices to match finish and be compatible with material through which they pass.
- .5 Supply components for work by other trades in accordance with shop drawings and schedule.
- .6 Make field connections with bolts to CSA S16 or Weld field connection.
- .7 Deliver items over for casting into concrete and building into masonry together with setting templates to appropriate location and construction personnel.
- .8 Touch-up rivets, field welds, bolts and burnt or scratched surfaces with primer after completion of:
 - .1 Primer: maximum VOC limit 250 g/L to GS-11.
- .9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.
 - .1 Primer: maximum VOC limit 250 g/L to GS-11.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

- .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by metal fabrications installation.

PART 1 GENERAL

1.1 RELATED SECTIONS .1 Division 26 - Electrical: Outlets and Wiring.

1.2 SHOP DRAWINGS .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
.2 Indicate details of construction, profiles, jointing, fastening and other related details.
.3 Indicate all materials, thicknesses, finishes and hardware.
.4 Indicate locations of all service outlets in casework, typical and special installation conditions, and all connections, attachments, anchorage and location of exposed fastenings.

1.3 QUALITY ASSURANCE .1 Fabricate a mock-up that will demonstrate the various aspects of the cabinetry specified.
.2 Mock-up to be approved prior to fabrication of all millwork.
.3 The approved mock may remain on site as part of the millwork and it will form the standard of acceptance for the remainder of the millwork.

1.4 FABRICATION .1 Fabricate finish carpentry to Quality Standards SEFA-8.

1.5 DELIVERY, STORAGE, AND HANDLING .1 Protect millwork against dampness and damage during and after delivery.
.2 Store millwork in ventilated areas, protected from extreme changes of temperature or humidity.

1.6 WASTE MANAGEMENT AND DISPOSAL .1 Collect and separate for disposal waste material in appropriate on site bins in accordance with Waste Management Plan.

1.7 SUMMARY AND .1 Section Includes:

SCOPE

- .1 Furnish all cabinets and casework, including tops, ledges, supporting structures. Include delivery to the building, Furnish and deliver all utility service outlet accessory fittings, electrical receptacles and switches identified on drawings as mounted on the laboratory furniture. All plumbing and electrical fittings, not preinstalled in equipment, will be packaged separately and properly marked for delivery to the appropriate contractor.
- .2 Furnish and deliver, for installation by the mechanical contractor, all Laboratory sinks, cup sinks or drains, drain troughs, overflows and sink outlets with integral tailpieces, which occur above the floor, and where these items are part of the equipment. All tailpieces shall be furnished less the couplings required to connect them to the drain piping system.

1.8 BASIS OF WORK

- .1 Supply all equipment in accordance with this specification. The offering of a product differing in materials and construction from this specification requires written approval from the owner/architect. This approval must be obtained seven (7) days before the quotation deadline. Procedures for obtaining approval for an alternate manufacturer are defined in this specification.
- .2 General Contractors should secure a list of approved laboratory furniture manufacturers from the architect as a protection against non-conformance to these specifications.
- .3 Participants in the quotation process have the option of clarifying deviations to the specified design, construction, or materials. Without such clarifications, sealed quotations to the owner or owner representative will be construed as being in total conformance to the requirements of the specification.
- .4 The owner / owner representative reserves the right to reject qualified or alternate proposals and to award based on product value where such action assures the owner greater integrity of product.

1.9 QUALITY OF

- .1 The steel laboratory furniture contractor

ASSURANCE shall also provide worktops all manufactured or shipped from the same geographic location to assure proper staging, shipment and single source responsibility.

.2 General Performance: Provide certification that furniture shall meet the performance requirements described in SEFA 8.

1.10 SUBMITTALS

.1 Manufacturer's Data: Submit manufacturer's data and installation instructions for each type of casework. Provide data indicating compliance with SEFA 8.

.2 Shop Drawings:

.1 Submit shop drawings for furniture assemblies showing plans, elevations, ends, cross-sections, service run spaces, location and type of service fittings.

.1 Coordinate shop drawings with other work involved.

.2 Provide roughing-in drawings for mechanical and electrical services when required.

PART 2 PRODUCTS

2.1 MANUFACTURERS

.1 All laboratory equipment covered by the specification shall be the product of one manufacturer and be fabricated at one geographic location to assure shipping continuity and single-source responsibility. All quotations from a manufacturer shall contain a review of the following capabilities:

.1 List of shop facilities

.2 List of engineering and manufacturing personnel

.3 Proof of financial ability to fulfill the contract

.4 List of a minimum of ten (10) installations over the last five (5) years of comparable scope

.5 Proof of project management and installation capabilities

.6 SEFA member in Good Standing

.2 The selected manufacturer must warrant for a period of one-year starting (date of acceptance or occupancy, whichever comes first) that all products sold under the contract referenced above shall be free from

defects in material and workmanship. Purchaser shall notify the manufacturer's representative immediately of any defective product. The manufacturer shall have a reasonable opportunity to inspect the goods. The purchaser shall return no product until receipt by purchaser of written shipping instructions from the manufacturer.

- .3 The architect will retain the above samples of the successful manufacturer or owner to insure that material delivered to jobsite conforms in every respect to the samples submitted.

2.2 CABINET
STYLE

- .1 Steel:

.1 Cabinet bodies, drawer bodies, shelves, drawer heads and door assemblies shall be fabricated from Cold Rolled Steel. (Note: All Drawer and Door Styles are available)

- .2 Standard of Acceptance: Air Master Systems Inc. Metal laboratory casework services and "solutions" services based also on part/component numbers as indicated on the drawings.

2.3 DRAWER AND
DOOR STYLE

- .1 The outer drawer and door head shall have a channel formation on all four sides to eliminate sharp raw edges of steel and shall be welded and ground smooth. Drawer and door, when closed, shall be recessed to create an overall flush face. Drawer and door pulls shall be an integral contour radiused pull along the top edge.

2.4 MATERIALS

- .1 General Requirements:

.1 It is the intent of this specification to provide a high quality steel cabinet specifically designed for the laboratory environment.

- .2 Steel:

.1 Cold Rolled Steel:

.1 Cold rolled sheet steel shall be prime grade 12, 14, 16, 18 and 20 gauge U.S. Standard; roller leveled, and shall be treated at the mill to be free of scale, ragged edges, deep scratches or other injurious effects.

- .3 Glass:

.1 Glass used for framed sliding and swinging doors shall be 1/8" float glass. Glass used for unframed sliding doors, shall be 1/4" float glass. Glass used in fume hoods or other hazardous locations shall be 7/32" laminated safety float glass, except the glass shielding fluorescent lights in fume hoods shall be tempered glass to provide greater resistance to heat and impact.

.4 Hardware and Trim:

.1 Drawer and Door Pulls:

.1 Contour - 5 - Pull shall be of modern design, offering a comfortable continuous handgrip. Pull shall be integrally formed at top of drawer and door, and grooved in back of drawer head to interlock with drawer body. Use of Aluminum, Steel, or plastic pulls (molded or extruded), or a design not compatible for usage by the handicapped will not be acceptable.

.2 Hinges:

.1 Hinges shall be made of Type 304 stainless steel .089 thick, 2-1/2" high, with brushed satin finish, and shall be the institutional type with a five knuckle bullet type barrel. Hinges shall be attached to both door and case with two screws through each leaf. Welding of hinges to door or case will not be accepted. Doors under 36" in height shall be hung on one pair of hinges, and doors over 36" high shall be hung on 3 hinges.

.3 Locks:

.1 Disk Tumbler:

.1 Locks when shown or called for shall be a 5-disc tumbler with heavy duty interchangeable cylinder. Exposed lock noses shall be dull nickel (satin) plated and stamped with identifying numbers. Locks shall have capacity for 2000 primary key changes. Master key one level with the potential of 10 different, non-interchangeable master key

groups.

OR

.2 Pin Tumbler:

- .1 Locks when shown or called for shall be a pin tumbler with heavy duty interchangeable cylinder. Exposed lock noses shall be dull nickel (satin) plated and stamped with identifying numbers. Locks shall have capacity of at least 1000 primary key changes, and the capacity to be Masterkeyed, Grand-masterkeyed, Sub-masterkeyed, and Mason Keyed.

.4 Positive Catch:

- .1 A two-piece heavy-duty cam action positive catch shall be provided on all base cupboard doors and shall be positioned near the pivoting edge of door to provide a clean unobstructed opening. Main body of the catch shall be confined within an integral cabinet divider rail, while latching post shall be mounted on the hinge side of door. Nylon roller type catches are not acceptable.

.5 Elbow Catches:

- .1 Elbow catches and strike plates shall be used on left hand doors of double door cases where locks are used, and are to be burnished cast aluminum, with bright brass finish.

.6 Shelf Adjustment Clips:

- .1 Shelf adjustment clips shall be nickel-plated steel.

.7 Base Molding:

- .1 Base molding shall be provided

.8 Sink Supports:

- .1 Sink supports shall be the hanger type, suspended from top front and top rear horizontal rails of sink cabinet by four 1/4" dia. rods, threaded at bottom end and offset at top to hang from two full length reinforcements welded to the front and rear top rails. Two

3/4" x 1 2/2" x 12 gauge channels shall be hung on the threaded rods to provide an adjustable sink cradle for supporting sinks. When sink capacity exceeds 3,750 cu. in., the sink supports shall be suspended from full-length reinforcements welded to the two end rails. Two 1" x 2" x 10 gauge full-length channels shall be hung from the four 1/4" dia. rods to provide an alternate sink cradle.

2.5 CONSTRUCTION .1 Steel Base Cabinet Construction:

.1 General:

- .1 The steel furniture shall be of modern design and shall be constructed in accordance with the best practices of the Scientific Laboratory Equipment Industry. First class quality casework shall be insured by the use of proper machinery, tools, dies, fixtures and skilled workmanship to meet the intended quality and quantity for the project.
- .2 All cabinet bodies shall be flush front construction with intersection of vertical and horizontal case members, such as end panels, top rails, bottoms and vertical posts in same plane without overlap. Exterior corners shall be spot welded with heavy back up reinforcement at exterior corners. All face joints shall be welded and ground smooth to provide a continuous flat plane.
- .3 Each cabinet shall be complete so that units can be relocated at any subsequent time without requiring field application of finished ends or other such parts.
- .4 Case openings shall be rabbetted on all four sides for both hinged and sliding doors to provide a dust resistant case.
- .5 All cabinets shall have a cleanable smooth interior. Bottom edges shall be formed down on sides and back to create easily cleanable corners with no burrs or sharp edges, and front edge shall

be offset to create a seamless
drawer and door recess rabbet for
dust stop.

.2 Steel Gauges:

.1 Gauges of steel used in construction of
cases shall be 18 gauge, except as
follows:

- .1 Corner gussets for leveling bolts
and apron corner braces, 12 gauge.
- .2 Case and drawer suspension
channels, 14 gauge.
- .3 Top and intermediate front
horizontal rails, table aprons,
hinge reinforcements, and
reinforcement gussets, 16 gauge.
- .4 Drawer assemblies, door
assemblies, bottom, bottom back
rail, toe space rail, and
adjustable shelves, 20 gauge.

.3 Base Cabinets:

- .1 End uprights shall be formed into not
less than a channel formation at top,
bottom, back and front. The front edge
shall further offset to form a strike
for doors and drawers, and shall be
perforated for the support of drawer
channels, intermediate rails and hinge
screws. An upright filler shall be
screwed in place in all cupboard units
to close the back of the channel at
front of the upright and to provide a
smooth interior for the cupboard to
facilitate cleaning. The upright filler
shall be perforated with shelf
adjustment holes at not more than 2"
centers painted prior to assembly. The
inside front of the upright shall be
further reinforced with a full height 16
gauge hinge reinforcement angle.
- .2 Top horizontal rail on base cabinets
shall interlock within the flange at top
of end panels for strength, but shall be
flush as face of unit. Top rail shall
have a full width rabbet for swinging
doors and drawers. Reinforcements shall
be provided at all front corners for
additional welded strength between
vertical and horizontal case members.
- .3 Intermediate rails shall be provided
between doors and drawers, but shall not
be provided between drawers unless made
necessary by locks in drawers. When

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- required, intermediate rails shall be recessed behind doors and drawer fronts, and designed so that security panels may be added as required.
- .4 Intermediate vertical uprights shall be furnished to enclose cupboards when used in a unit in combination with a half width bank of drawers. However, to allow storage of large or bulky objects, no upright of any type shall be used at the center of double door cupboard units.
- .5 Cabinet bottom, and bottom rail shall be formed of one piece of steel except in corner units and shall be formed down on sides and back to create a square edge transition welded to cabinet end panels, and front edge shall be offset to create a seamless drawer and door recess rabbet for dust stop.
- .6 Toe space rail shall extend up and forward to engage bottom rail to form a smooth surfaced fully enclosed toe space, 3" deep x 5" high. Whenever toe space base is omitted for units to set on building bases on separate steel bases, then the toe space rail shall extend back 4 1/2".
- .7 Back construction shall consist of a top and bottom rail, channel formed for maximum strength and welded to back and top flange of end uprights, open for access to plumbing lines. Cupboard units only shall be provided with removable back panels.
- .8 Die formed gussets, with multiple ends for strength, shall be furnished in each bottom corner of base units to insure rigidity, and a 3/8" 16 leveling bolt, 3" long, shall engage a clinch nut in each gusset. Access to the leveling bolts shall be through plug buttons in the bottom pan. Each leveling bolt and gusset shall be capable of supporting 500 lbs. Access to leveling bolts through toe space or leveling bolts requiring special tools to adjust are not acceptable.
- .9 Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear; formed down 3/4" at each end, shelves over 42" long shall be further reinforced with a channel formation welded to underside of shelf.

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- .10 Drawer bodies shall be made in one piece construction including the bottom, two sides, back and front. They shall be fully coved at interior bottom on all four sides for easy cleaning. The top front of the inner drawer body shall be offset to interlock with the channel formation in drawer head providing a 3/4" thick drawer head.
 - .11 Drawer suspension assembly shall consist of 2 sections providing a quiet, smooth operation on ball bearing nylon rollers. All drawers shall be self closing from a point 5" open. Cabinet channels shall maintain alignment of drawer and provide an integral drawer stop, but the drawer shall be removable without the use of tools. Drawers shall provide 13 5/8" front to back clearance when fully extended. Drawers shall rise when opened thus avoiding friction with lower drawers and/or doors. Drawer suspension system shall incorporate a double stop, lock open feature. Case suspension channels shall be Galvanized Steel, drawer suspension channels shall be Cold Rolled Steel. Drawer suspension channels on Stainless Steel Cabinets shall be zinc plated after they are formed.
 - .12 Steel Door assembly (two piece) for solid pan swinging doors shall consist of an inner and outer door pan. Outer door pan shall be formed at all four sides. The corners on the pull side of the outer door pan shall be welded and ground smooth to prevent exposure of sharp edges of steel at these critical points. Inner door pan shall be flanged at all four sides with hinge reinforcements welded in place. The door assembly shall be 3/4" thick and contains sound deadening material.
 - .13 Steel Drawer/door assemblies shall be painted prior to assembly. Both shall be punched for attaching drawer pulls. Likewise, inner pan formation of door and drawer body shall be indented for in field installation of locks when required.
 - .14 Doors shall be readily removable and hinges easily replaceable. Hinges shall be applied to the cabinet and door with screws. Welding of hinges to either cabinet or door will not be acceptable.
 - .15 Knee space panels, where shown or

specified, shall be 20 gauge, finished same as casework cabinets, and easily removable for access to mechanical service areas.

.4 Steel Sliding Door Upper Cabinet Construction:

- .1 Sliding door storage cabinets shall have a completely finished interior same as exterior. Doors shall be suspended from the top by nylon rollers in a roll formed steel track welded to top of cabinet. Track shall be so designed to prevent accidental removal of doors in operation position.
- .2 End uprights shall be formed at front, bottom and back to provide maximum strength and rigidity. Front fascia of upright shall be 1" wide with inside edge formed in channel 2" x 1/4". A full height box reinforcement shall be fitted to the channel, formed to provide a recessed strike for door and to reinforce the case. The backside of the reinforcement shall be perforated with shelf adjustment holes spaced at not more than 1" centers. The back of upright shall be formed to a 2-1/2" formation. A 16-gauge hinge reinforcement same as specified for base units shall be welded to inner side of front uprights.
- .3 Cabinet tops shall be formed with a 1-1/2" wide front fascia, and a 2" x 2" channel formation at front edge flanged down and back. Door suspension roll formed steel track shall be welded to cabinet top.
- .4 Cabinet flush bottoms shall be formed with a 1" wide front fascia, and a channel formation at front edge flanged back and up to create a door recess rabbet for dust stop.
- .5 Cabinet backs shall be welded to the top, bottom and ends. Backs shall be perforated for shelf adjustment holes on not more than 1" centers. Holes shall be set in a channel formation in cabinet back and enclosed by end uprights.
- .6 Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear, formed down 3/4" at each end, shelves over 42" long shall be further

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- reinforced with a channel formation welded to underside of shelf.
- .7 Glazed sliding doors shall be suspended from the top in a roll formed steel track welded to cabinet top and shall glide on nylon rollers. Track shall be so designed to prevent accidental removal of doors. Doors shall be 3/4" thick and consist of an inner and outer door pan welded together to form a single unit. Outer door pan shall be 18 gauge steel, formed into a channel or flanged shape at all four sides. It shall be pierced and formed to create a 3" wide frame with a beveled edge around the glass opening in the center of the door. Inner door pan shall be 18 gauge steel, flanged at all four sides, and pierced for a glass opening in center of the door. Doors shall be glazed with 1/8" float glass, held in place by a rubber or vinyl gasket around the entire edge of the glass. Outer door pan shall be pierced for a recessed flush pull, as described under HARDWARE.
- .8 Solid panel sliding doors shall be suspended same as glazed sliding doors. Door assembly (two-piece) shall consist of inner and outer pan formations, mechanically assembled after painting. All doors shall be 3/4" thick and contains sound deadening material.
- .9 Sliding plate glass doors shall be available for 48" high cases and under. The plate glass doors shall operate on an extruded aluminum track at the bottom of the cabinet, and in an extruded aluminum channel at the top. The bottom of each glass door shall be furnished with a continuous aluminum shoe the full length of the door, which shall be equipped with two nylon rollers that operate on the extruded aluminum track. The aluminum shoes on the bottom of the plate glass doors shall be equipped with pulls for operation of the doors, and also to prevent bypassing of the doors. Plate glass doors shall close against rubber bumpers.
- .5 Steel Swinging Door Construction:
- .1 Swinging door storage cabinets shall have a completely finished interior same as exterior.
- .2 End uprights shall be formed at the

- front in a 1" channel formation with the inside flange formed to provide a 31/32" x 1/2" door recess. The back of the upright shall be formed to a 2-1/2" formation. A 16 gauge hinge reinforcement, same as specified for BASE CABINETS, shall be welded to inner side of front uprights.
- .3 Cabinet tops shall be formed into a 1" x 1-3/16" channel shape at front, with a 31/32" x 1/2" offset for door recess, and with flange at rear and sides for electro-welding cabinet top to cabinet back and ends.
- .4 Cabinet flush bottoms shall be formed with a 1" wide front fascia and a 13/16" channel shape formation at front edge flanged back and up to create a door recess rabbet for dust stop.
- .5 Cabinet backs shall be welded to the top, bottom and ends. Backs shall be perforated for shelf adjustment holes on not more than 1" centers. Holes shall be set in a channel formation in cabinet back and enclosed by end uprights.
- .6 Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear, formed down 3/4" at each end, shelves over 42" long shall be further reinforced with a channel formation welded to underside of shelf.
- .7 Glazed swinging doors shall be 3/4" thick and consist of an inner and outer door pan welded to form a single unit. Outer door pan shall be 18 gauge steel, formed into a channel or flanged shape at all four sides. It shall be pierced and formed to create a 3" wide frame with a beveled edge around the glass opening in the center of the door. Inner door pan shall be 18 gauge steel, flanged at all four sides, pierced for a glass opening in center of the door, with 16 gauge hinge reinforcements welded in place. Doors shall be glazed with 1/8" float glass, held in place by a rubber or vinyl gasket around the entire edge of the glass. Outer door pan shall be pierced for a recessed flush pull, as described under HARDWARE.
- .8 Door assembly (two piece) for solid panel swinging doors shall consist of an inner and outer door pan. Outer door pan shall be formed into a channel or

flanged shape at all four sides. The corners on the pull side of the outer door pan shall be welded and ground smooth to prevent exposure of sharp edges of steel at these critical points. Inner door pan shall be flanged at all four sides with hinge reinforcements welded in place. The door assembly shall be 3/4" thick and contains sound deadening material.

- .6 Steel Swinging Door Full Height Cabinet Construction:
- .1 Swinging door full height storage cabinets shall have a completely finished interior same as exterior.
 - .2 End uprights shall be formed at the front in a 1" channel formation with the inside flange formed to provide a 31/32" x 1/2" door recess. The back of the upright shall be formed to a 2-1/2" formation. A 16 gauge hinge reinforcement, same as specified for BASE CABINETS, shall be welded to inner side of front uprights.
 - .3 Cabinet tops shall be formed into a 1" x 1-3/16" channel shape at front, with a 31/32" x 1/2" offset for door recess, and with flange at rear and sides for electro-welding cabinet top to cabinet back and ends.
 - .4 Cabinet bottoms for storage cabinets shall be formed down on sides and back to create a square edge transition welded to cabinet end panels, and front edge shall be offset to create a seamless drawer and door recess rabbet for dust stop. Cabinet bottoms shall be formed to provide a flush 1" face rail with a return flange to give a 9/16" deep x 5" high toe space.
 - .5 Cabinet backs shall be welded to the top, bottom and ends. Backs shall be perforated for shelf adjustment holes on not more than 1" centers. Holes shall be set in a channel formation in cabinet back and enclosed by end uprights.
 - .6 Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear, formed down 3/4" at each end, shelves over 42" long shall be further reinforced with a channel formation welded to underside of shelf.

- .7 Toe space rails shall interlock in back of bottom rail and with end panel to provide a welding plate, and shall extend to the floor with a flange turned back 1 1/2" and turned up 3/8" for support.
- .8 Glazed swinging doors shall be 3/4" thick and consist of an inner and outer door pan welded to form a single unit. Outer door pan shall be 18 gauge steel, formed into a channel or flanged shape at all four sides. It shall be pierced and formed to create a 3" wide frame with a beveled edge around the glass opening in the center of the door. Inner door pan shall be 18 gauge steel, flanged at all four sides, pierced for a glass opening in center of the door, with a 16 gauge hinge reinforcements welded in place. Doors shall be glazed with 1/8" float glass, held in place by a rubber or vinyl gasket around the entire edge of the glass. Outer door pan shall be pierced for a recessed flush pull, as described under HARDWARE.
- .9 Solid panel swinging doors (two piece) shall consist of an inner and outer pan formation, mechanically assembled after painting. All exterior surfaces shall be welded and ground smooth. Inner door pan shall be flanged for mechanical assembly. Door shall have a 14 gauge hinge reinforcement welded at hinge slot; as well as a full height channel formation welded to inner pan. Doors shall be 3/4" thick and contains sound deadening material.

2.6 PERFORMANCE REQUIREMENTS

- .1 Steel Casework Construction Performance:
 - .1 Base cabinets shall be constructed to support at least a uniformly distributed load 200 lbs. per square foot of cabinet top area, including working surface without objectionable distortion of interference with door and drawer operation.
 - .2 Base cabinet corner gussets with leveling bolts shall support 500 lbs. per corner, at 1 1/2" projection of the leveling bolt below the gusset.
 - .3 Each adjustable and fixed shelf 4 ft. or shorter in length shall support an evenly distributed load of 40 lbs. per square ft. up to a maximum of 200 lbs.,

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- with nominal temporary deflection, but without permanent set.
- .4 Drawer construction and performance shall allow 13-5/8" clear when in an extended position and suspension system shall prevent friction contact with any other drawer or door during opening or closing. All drawers shall operate smoothly, a minimum of 10,000 cycles with an evenly distributed load of 150 lbs.
 - .5 Swinging doors on floor-mounted casework shall support 200 lbs. suspended at a point 12" from hinged side, with door swung through an arc of 160 degrees. Weight load test shall allow only a temporary deflection, without permanent distortion or twist. Door shall operate freely after test and assume a flat plane in a closed position.
- .2 Steel Paint System Finish and Performance Specification:
- .1 Steel Paint System Finish:
 - .1 After Cold Rolled Steel and Textured Steel component parts have been completely welded together and before finishing, they shall be given a pre paint treatment to provide excellent adhesion of the finish system to the steel and to aid in the prevention of corrosion. Physical and chemical cleaning of the steel shall be accomplished by washing with an alkaline cleaner, followed by a spray treatment with a complex metallic phosphate solution to provide a uniform fine grained crystalline phosphate surface that shall provide both an excellent bond for the finish and enhance the protection provided by the finish against humidity and corrosive chemicals.

After the phosphate treatment, the steel shall be dried and all steel surfaces shall be coated with a chemical and corrosion resistant, environmentally friendly, electrostatically applied powder coat finish. All components shall be individually painted, insuring that no area be vulnerable to corrosion due to lack of paint

coverage. The coating shall then be cured by baking at elevated temperatures to provide maximum properties of corrosion and wear resistance.

The completed finish system in standard colors shall meet the performance test requirements specified under PERFORMANCE TEST RESULTS.

.2 Colours to be selected by Departmental Representative from manufacturers complete colour range. Product shall be available in a minimum of eight (8) colours.

.2 Performance Test Results (Chemical Spot Tests):

.1 Testing Procedure:

.1 Chemical spot tests for non-volatile chemicals shall be made by applying 5 drops of each reagent to the surface to be tested and covering with a 1-1/4" dia. watch glass, convex side down to confine the reagent. Spot tests of volatile chemicals shall be tested by placing a cotton ball saturated with reagent on the surface to be tested and covering with an inverted 2 ounce wide mouth bottle to retard evaporation. All spot tests shall be conducted in such a manner that the test surface is kept wet throughout the entire test period, and at a temperature of $77^{\circ} \pm 3^{\circ}$ F. For both methods, leave the reagents on the panel for a period of one hour. At the end of the test period, the reagents shall be flushed from the surface with water, and the surface scrubbed with a soft bristle brush under running water, rinsed and dried. Volatile solvent test areas shall be cleaned with a cotton swab soaked in the solvent used on the test area. Immediately prior to evaluation, 16 to 24 hours after the reagents are

removed, the test surface shall be scrubbed with a damp paper towel and dried with paper towels.

.2 Test Evaluation:

Evaluation shall be based on the following rating system.

Level 0 - No detectable change

Level 1 - Slight change in color or gloss.

Level 2 - Slight surface etching or severe staining.

Level 3 - Pitting, cratering, swelling, or erosion of coating. Obvious and significant deterioration.

After testing, panel shall show no more than three (3) Level 3 conditions.

.3 Test Reagents

Test No.	Chemical Reagent	Test Method
1.	Acetate, Amyl	Cotton ball & bottle
2.	Acetate, Ethyl	Cotton ball & bottle
3.	Acetic Acid, 98%	Watch glass
4.	Acetone	Cotton ball & bottle
5.	Acid Dichromate, 5%	Watch glass
6.	Alcohol, Butyl	Cotton ball & bottle
7.	Alcohol, Ethyl	Cotton ball & bottle
8.	Alcohol, Methyl	Cotton ball & bottle
9.	Ammonium Hydroxide, 28%	Watch glass
10.	Benzene	Cotton ball & bottle
11.	Carbon Tetrachloride	Cotton ball & bottle
12.	Chloroform	Cotton ball & bottle
13.	Chromic Acid, 60%	Watch glass
14.	Cresol	Cotton ball & bottle
15.	Dichlor Acetic Acid	Cotton ball & bottle
16.	Dimethylformamide	Cotton ball &

		bottle
17.	Dioxane	Cotton ball & bottle
18.	Ethyl Ether	Cotton ball & bottle
19.	Formaldehyde, 37%	Cotton ball & bottle
20.	Formic Acid, 90%	Watch glass
21.	Furfural	Cotton ball & bottle
22.	Gasoline	Cotton ball & bottle
23.	Hydrochloric Acid, 37%	Watch glass
24.	Hydrofluoric Acid, 48%	Watch glass
25.	Hydrogen Peroxide, 3%	Watch glass
26.	Iodine, Tincture of	Watch glass
27.	Methyl Ethyl Ketone	Cotton ball & bottle
28.	Methylene Chloride	Cotton ball & bottle
29.	Mono Chlorobenzene	Cotton ball & bottle
30.	Naphthalene	Cotton ball & bottle
31.	Nitric Acid, 20%	Watch glass
32.	Nitric Acid, 30%	Watch glass
33.	Nitric Acid, 70%	Watch glass
34.	Phenol, 90%	Cotton ball & bottle
35.	Phosphoric Acid, 85%	Watch glass
36.	Silver Nitrate, Saturated	Watch glass
37.	Sodium Hydroxide, 10%	Watch glass
38.	Sodium Hydroxide, 20%	Watch glass
39.	Sodium Hydroxide, 40%	Watch glass
40.	Sodium Hydroxide, Flake	Watch glass
41.	Sodium Sulfide, Saturated	Watch glass
42.	Sulfuric Acid, 33%	Watch glass
43.	Sulfuric Acid, 77%	Watch glass
44.	Sulfuric Acid, 96%	Watch glass
45.	Sulfuric Acid, 77% and Nitric Acid, 70%, equal parts	Watch glass
46.	Toluene	Cotton ball & bottle

47.	Trichloroethylene	Cotton ball & bottle
48.	Xylene	Cotton ball & bottle
49.	Zinc Chloride, Saturated	Watch glass

* Where concentrations are indicated, percentages are by weight.

.3 Performance Test Results (Heat Resistance):

.1 Hot water (190° F - 205° F) shall be allowed to trickle (with a steady stream at a rate not less than 6 ounces per minute) on the finished surface, which shall be set at an angle of 45° from horizontal, for a period of five minutes. After cooling and wiping dry, the finish shall show no visible effect from the hot water treatment.

.4 Performance Test Results (Impact Resistance):

.1 A one-pound ball (approximately 2" diameter) shall be dropped from a distance of 12 inches onto the finished surface of steel panel supported underneath by a solid surface. There shall be no evidence of cracks or checks in the finish due to impact upon close eye- ball examination.

.5 Performance Test Results (Bending Test):

.1 An 18 gauge steel strip, finished as specified, when bent 180° over a 1/2" diameter mandrel, shall show no peeling or flaking off of the finish.

.6 Performance Test Results (Adhesion):

.1 Ninety or more squares of the test sample shall remain coated after the scratch adhesion test. Two sets of eleven parallel lines 1/16" apart shall be cut with a razor blade to intersect at right angle thus forming a grid of 100 squares. The cuts shall be made just deep enough to go through the coating, but not into the substrate. They shall then be brushed lightly with a soft brush. Examine under 100 foot-candles of illumination. Note: This test is based on ASTM D2197 68, "Standard Method of Test for Adhesion of Organic Coatings".

.7 Performance Test Results (Hardness):

.1 The test sample shall have a hardness of

4 H using the pencil hardness test. Pencils, regardless of their brand are valued in this way: 8 H is the hardest, and next in order of diminishing hardness are 7 H, 6 H, 5 H, 4 H, 3 H, 2 H, F, HB, B (soft), 2 B, 3 B, 4 B, 5 B (which is the softest).

- .2 The pencils shall be sharpened on emery paper to a wide sharp edge. Pencils of increasing hardness shall be pushed across the paint film in a chisel like manner until one is found that will cut or scratch the film. The pencil used before that one that is, the hardest pencil that will not rupture the film is then used to express or designate the hardness.

2.7 WORK SURFACES

- .1 Materials:
.1 Epoxy Resin Tops 1" Thick, Satin non shiny surface.

2.8 SINKS

- .1 Molded Epoxy Resin flush Sinks.

2.9 FITTINGS

- .1 Materials: (Choose one or more and import information from SERVICE FITTINGS AND ACCESSORIES spec.)
.1 Chrome-plated red brass or bronze
.2 Coated red brass or sepia bronze
.2 Construction: (Choose one or more and import information from SERVICE FITTINGS AND ACCESSORIES spec.)
.1 Valves:
.1 Front-loaded valves
.2 Water
.3 Steam
.4 Distilled Water
.5 Ground key dry service
.6 Needle valve dry service

PART 3 EXECUTION

3.1 INSTALLATION

- .1 Do architectural woodwork to Quality Standards of the SEFA-8, except where specified otherwise.
.2 Install prefinished millwork at locations

shown on drawings. Position accurately,
level, plumb straight.

- .3 Fasten and anchor millwork securely. Provide heavy duty fixture attachments for wall mounted cabinets.
- .4 Use draw bolts in countertop joints.
- .5 Scribe and cut as required to fit abutting walls and to fit properly into recesses and to accommodate piping, columns, fixtures, outlets or other projecting, intersecting or penetrating objects.
- .6 At junction of plastic laminate counter backsplash and adjacent wall finish, apply small bead of sealant.
- .7 Apply water resistant building paper over wood framing members in contact with masonry or cementitious construction.
- .8 Fit hardware accurately and securely in accordance with manufacturer's directions.
- .9 Site apply laminated plastic to units as indicated or required. Adhere laminated plastic over entire surface. Make corners with hairline joints. Use full sized laminate sheets. Make joints only where approved. Slightly bevel all rises.
- .10 For site application offset joints in plastic laminate facing from joints in core.
- .11 Vacuum clean all cavities prior to final placement of millwork.
- .12 Install millwork bases before flooring is applied.

3.2 CLEANING

- .1 Clean millwork and cabinet work inside cupboards and drawers and outside surfaces.

3.3 PROTECTION

- .1 Protect millwork and cabinet work from damage until final inspection.

PART 1 GENERAL

- 1.1 REFERENCES
- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
 - .2 Underwriter's Laboratories of Canada (ULC)
 - .1 ULC-S115-1995, Fire Tests of Fire stop Systems.
- 1.2 DEFINITIONS
- .1 Fire Stop Material: device intended to close off opening or penetration during fire or materials that fill openings in wall or floor assembly where penetration is by cables, cable trays, conduits, ducts and pipes and poke-through termination devices, including electrical outlet boxes along with their means of support through wall or floor openings.
 - .2 Single Component Fire Stop System: fire stop material that has Listed Systems Design and is used individually without use of high temperature insulation or other materials to create fire stop system.
 - .3 Multiple Component Fire Stop System: exact group of fire stop materials that are identified within Listed Systems Design to create on site fire stop system.
 - .4 Tightly Fitted; (ref: NBC Part 3.1.9.1.1 and 9.10.9.6.1): penetrating items that are cast in place in buildings of noncombustible construction or have "0" annular space in buildings of combustible construction.
 - .1 Words "tightly fitted" should ensure that integrity of fire separation is such that it prevents passage of smoke and hot gases to unexposed side of fire separation.
- 1.3 SUBMITTALS
- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 QUALITY ASSURANCE

- .2 Submit two copies of WHMIS MSDS - Material Safety Data.
- .3 Shop Drawings:
 - .1 Submit shop drawings to show location, proposed material, reinforcement, anchorage, fastenings and method of installation.
 - .2 Construction details should accurately reflect actual job conditions.
- .4 Samples:
 - .1 Submit duplicate 300 x 300 mm samples showing actual fire stop material proposed for project.
- .5 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Testing and Quality Control.
 - .1 Test reports: in accordance with CAN-ULC-S101 for fire endurance and CAN-ULC-S102 for surface burning characteristics.
 - .1 Submit certified test reports from approved independent testing laboratories, indicating compliance of applied fire stopping with specifications for specified performance characteristics and physical properties.
 - .2 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
 - .3 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures.
 - .4 Manufacturer's Field Reports: submit to manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in PART 3 - FIELD QUALITY CONTROL.
- .1 Qualifications:
 - .1 Installer: company and person specializing in fire stopping installations with 5 years documented experience approved by manufacturer.

1.5 DELIVERY,
STORAGE AND
HANDLING

- .1 Packing, shipping, handling and unloading:
 - .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
 - .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.
 - .3 Deliver materials to the site in undamaged condition and in original unopened containers, marked to indicate brand name, manufacturer, ULC markings.
- .2 Storage and Protection:
 - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.
- .3 Waste Management and Disposal:
 - .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Fire stopping and smoke seal systems: in accordance with CAN-ULC-S115.
 - .1 Asbestos-free materials and systems capable of maintaining effective barrier against flame, smoke and gases in compliance with requirements of CAN-ULC-S115 and not to exceed opening sizes for which they are intended and conforming to specified special requirements described in PART 3 .
 - .2 Fire stop system rating: 60 minutes.
- .2 Service penetration assemblies: systems tested to CAN-ULC-S115.
- .3 Service penetration fire stop components: certified by test laboratory to CAN-ULC-S115.
- .4 Fire-resistance rating of installed fire stopping assembly in accordance with NBC.
- .5 Fire stopping and smoke seals at openings

intended for ease of re-entry such as cables:
elastomeric seal.

- .6 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal.
- .7 Primers: to manufacturer's recommendation for specific material, substrate, and end use.
- .8 Water (if applicable): potable, clean and free from injurious amounts of deleterious substances.
- .9 Damming and backup materials, supports and anchoring devices: to manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.
- .10 Sealants for vertical joints: non-sagging.

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 PREPARATION

- .1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials.
 - .1 Ensure that substrates and surfaces are clean, dry and frost free.
- .2 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer's instructions.
- .3 Maintain insulation around pipes and ducts penetrating fire separation.
- .4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces.

3.3 INSTALLATION

- .1 Install fire stopping and smoke seal material and components in accordance with manufacturer's certified tested system

listing.

- .2 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.
- .3 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.
- .4 Tool or trowel exposed surfaces to neat finish.
- .5 Remove excess compound promptly as work progresses and upon completion.

3.4 SEQUENCES OF OPERATION

- .1 Proceed with installation only when submittals have been reviewed by Departmental Representative.
- .2 Install floor fire stopping before interior partition erections.
- .3 Metal deck bonding: fire stopping to precede spray applied fireproofing to ensure required bonding.
- .4 Mechanical pipe insulation: certified fire stop system component.
 - .1 Ensure pipe insulation installation precedes fire stopping.

3.5 FIELD QUALITY CONTROL

- .1 Inspections: notify Departmental Representative when ready for inspection and prior to concealing or enclosing fire stopping materials and service penetration assemblies.
- .2 Manufacturer's Field Services:
 - .1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - SUBMITTALS.
 - .2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits

for inspection of product installation in accordance with manufacturer's instructions.

- .3 Schedule site visits, to review Work, as directed in PART 1 - QUALITY ASSURANCE.

3.6 CLEANING

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.
- .3 Remove temporary dams after initial set of fire stopping and smoke seal materials.

3.7 SCHEDULE

- .1 Fire stop and smoke seal at:
 - .1 Penetrations through fire-resistance rated masonry, concrete, and gypsum board partitions and walls.
 - .2 Edge of floor slabs.
 - .3 Top of fire-resistance rated masonry and gypsum board partitions.
 - .4 Intersection of fire-resistance rated masonry and gypsum board partitions.
 - .5 Control and sway joints in fire-resistance rated masonry and gypsum board partitions and walls.
 - .6 Penetrations through fire-resistance rated floor slabs, ceilings.
 - .7 Openings and sleeves installed for future use through fire separations. Around mechanical and electrical assemblies penetrating fire separations.
 - .8 Rigid ducts: greater than 129 cm²: fire stopping to consist of bead of fire stopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separation.

PART 1 GENERAL

- 1.1 SECTION INCLUDES .1 Materials, preparation and application for caulking and sealants.
- 1.2 RELATED SECTIONS .1 Section 01 33 00 - Submittal Procedures.
.2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
.3 Section 01 45 00 - Testing and Quality Control.
.4 Section 01 61 00 - Common Product Requirements.
- 1.3 REFERENCES .1 American Society for Testing and Materials International, (ASTM)
.1 ASTM C919-02, Standard Practice for Use of Sealants in Acoustical Applications.
.2 Canadian General Standards Board (CGSB)
.1 CGSB 19-GP-5M-1984, Sealing Compound, One Component, Acrylic Base, Solvent Curing (Issue of 1976 reaffirmed, incorporating Amendment No. 1).
.2 CAN/CGSB-19.13-M87, Sealing Compound, One-component, Elastomeric, Chemical Curing.
.3 CGSB 19-GP-14M-1984, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).
.4 CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.
.5 CAN/CGSB-19.24-M90, Multi-component, Chemical Curing Sealing Compound.
.3 Department of Justice Canada (Jus)
.1 Canadian Environmental Protection Act, 1999 (CEPA).
.4 General Services Administration (GSA) - Federal Specifications (FS)
.1 FS-SS-S-200-E(2)1993, Sealants, Joint, Two-Component, Jet-Blast-Resistant, Cold Applied, for Portland Cement Concrete Pavement.
.5 Health Canada/Workplace Hazardous Materials

PART 1 GENERAL

- 1.1 RELATED REQUIREMENTS .1 Section 09 22 16 - Non Structural Metal Framing.
- 1.2 REFERENCES .1 Aluminum Association (AA)
- .2 ASTM International
- .1 ASTM C475-02(2007), Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
- .2 ASTM C514-04(2009e1), Standard Specification for Nails for the Application of Gypsum Board.
- .3 ASTM C840-08, Standard Specification for Application and Finishing of Gypsum Board.
- .4 ASTM C954-07, Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
- .5 ASTM C1002-07, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- .6 ASTM C1047-09, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
- .7 ASTM C1396/C1396M-09a, Standard Specification for Gypsum Wallboard.
- .3 Association of the Wall and Ceilings Industries International (AWCI)
- .1 AWCI Levels of Gypsum Board Finish-97.
- .4 Canadian General Standards Board (CGSB)
- .1 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.
- .5 Green Seal Environmental Standards (GS)
- .1 GS-11-2008, 2nd Edition, Paints and Coatings.
- .6 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
- .1 SCAQMD Rule 1113-A2007, Architectural

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- Coatings.
- .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
 - .7 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102-07, Standard Method of Test of Surface Burning Characteristics of Building Materials and Assemblies.
- 1.3 ACTION AND INFORMATIONAL SUBMITTALS
- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for gypsum board assemblies and include product characteristics, performance criteria, physical size, finish and limitations.
 - .3 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate 300 mm long samples of corner and casing beads shadow mould cornice cap textured finishes insulating strip.
- 1.4 DELIVERY, STORAGE AND HANDLING
- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written 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 gypsum board assemblies materials level off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect gypsum board assemblies from nicks, scratches, and blemishes.
 - .3 Protect from weather, elements and damage from construction operations.

- .4 Handle gypsum boards to prevent damage to edges, ends or surfaces.
- .5 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan related to Work of this Section.
- .5 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.5 AMBIENT
CONDITIONS

- .1 Maintain temperature 10 degrees C minimum, 21 degrees C maximum for 48 hours prior to and during application of gypsum boards and joint treatment, and for 48 hours minimum after completion of joint treatment.
- .2 Apply board and joint treatment to dry, frost free surfaces.
- .3 Ventilation: ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Standard board: to ASTM C1396/C1396M Type X, 16 mm thick, 1200 mm wide x maximum practical length, ends square cut, edges bevelled.
- .2 Metal furring runners, hangers, tie wires, inserts, anchors.
- .3 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .4 Resilient clips drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .5 Nails: to ASTM C514.
- .6 Steel drill screws: to ASTM C1002.

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- .7 Stud adhesive: to CAN/CGSB-71.25 ASTM C557.
 - .8 Laminating compound: as recommended by manufacturer, asbestos-free.
 - .9 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, zinc-coated by electrolytic process, 0.5 mm base thickness, perforated flanges, one piece length per location.
 - .10 Sealants: in accordance with Section 07 92 00 - Joint Sealants.
 - .1 VOC limit 250 g/L maximum to SCAQMD Rule 1168.
 - .2 Acoustic sealant: in accordance with Section 07 92 00 - Joint Sealants.
 - .11 Joint compound: to ASTM C475, asbestos-free.
- 2.2 FINISHES
- .1 Texture finish: asbestos-free standard white texture coating and primer-sealer, recommended by gypsum board manufacturer.
 - .1 Primer: VOC limit 50 g/L maximum to GS-11 SCAQMD Rule 1113.
- PART 3 EXECUTION
- 3.1 EXAMINATION
- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for gypsum board assemblies 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 ERECTION
- .1 Do application and finishing of gypsum board to ASTM C840 except where specified otherwise.

- .2 Install work level to tolerance of 1:1200.
- .3 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles.
- .4 Install 19 x 64 mm furring channels over existing clay masonry partitions to affix new gypsum board.
- .5 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .6 Install wall furring for gypsum board wall finishes to ASTM C840, except where specified otherwise.
- .7 Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
- .8 Furr duct shafts, beams, columns, pipes and exposed services where indicated.
- .9 Erect drywall resilient furring transversely across studs joists between the layers of gypsum board, spaced maximum 600 mm on centre and not more than 150 mm from ceiling/wall juncture. Secure to each support with 38 mm common nail 25 mm drywall screw.
- .10 Install 150 mm continuous strip of 12.7 mm gypsum board along base of partitions where resilient furring installed.

3.3 APPLICATION

- .1 Apply gypsum board after bucks, anchors, blocking, sound attenuation, electrical and mechanical work have been approved.
- .2 Apply single layer gypsum board to furring or framing using screw fasteners. Maximum spacing of screws 300 mm on centre.
 - .1 Single-Layer Application:
 - .1 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.
 - .3 Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building

components. Seal full perimeter of cut-outs around electrical boxes, ducts, in partitions where perimeter sealed with acoustic sealant.

- .4 Apply board using stud adhesive on furring or framing laminating adhesive on base layer of gypsum board.
- .5 Install gypsum board on walls vertically to avoid end-butt joints. Install gypsum board with face side out.
- .6 Do not install damaged or damp boards.
- .7 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

3.4 INSTALLATION

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm on centre.
- .2 Install casing beads around perimeter of suspended ceilings.
- .3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .4 Install shadow mould at gypsum board/ceiling juncture. Minimize joints; use corner pieces and splicers.
- .5 Construct control joints of two back-to-back casing beads set in gypsum board facing and supported independently on both sides of joint.
- .6 Provide continuous polyethylene dust barrier behind and across control joints.
- .7 Locate control joints at changes in substrate construction at approximate 10 m spacing on long corridor runs.
- .8 Install control joints straight and true.
- .9 Splice corners and intersections together and secure to each member with 3 screws.
- .10 Install access doors to electrical and

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- mechanical fixtures specified in respective sections.
- .1 Rigidly secure frames to furring or framing systems.
 - .11 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
 - .12 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with AWCI Levels of Gypsum Board Finish:
 - .1 Levels of finish:
 - .1 Level 5: embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; apply a thin skim coat of joint compound to entire surface; surfaces smooth and free of tool marks and ridges.
 - .13 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
 - .14 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
 - .15 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
 - .16 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.
 - .17 Apply one coat of white primer sealer over surface to be textured. When dry apply textured finish in accordance with manufacturer's instructions.
 - .18 Mix joint compound slightly thinner than for joint taping.
 - .19 Apply thin coat to entire surface using trowel or drywall broad knife to fill surface

texture differences, variations or tool marks.

- .20 Allow skim coat to dry completely.
- .21 Remove ridges by light sanding or wiping with damp cloth.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.6 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by gypsum board assemblies' installation.

PART 1 GENERAL

- 1.1 RELATED SECTIONS
- .1 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
 - .2 Section 07 92 00 - Joint Sealants.
 - .3 Section 09 21 16 - Gypsum Board Assemblies.
- 1.2 REFERENCES
- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C645-00, Specification for Nonstructural Steel Framing Members.
 - .2 ASTM C754-00, Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
 - .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-1.40-97, Primer, Structural Steel, Oil Alkyd Type.
 - .3 Environmental Choice Program (ECP).
 - .1 CCD-047a -98, Paints - Surface Coatings.
 - .2 CCD-048-98, Surface Coatings - Recycled Water-borne.
- 1.3 QUALITY ASSURANCE
- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
 - .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- 1.4 WASTE MANAGEMENT AND DISPOSAL
- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
 - .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
 - .3 Collect and separate for disposal paper plastic polystyrene corrugated cardboard packaging material in appropriate on-site for recycling in accordance with Waste Management

Plan.

- .4 Divert unused metal materials from landfill to metal recycling facility approved by Departmental Representative.
- .5 Divert unused gypsum materials from landfill to recycling facility approved by Departmental Representative.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Non-load bearing channel stud framing: to ASTM C645, stud sizes indicated, roll formed from 0.91 mm thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board lath. Knock-out service holes at 460 mm centres.
- .2 Floor and ceiling tracks: to ASTM C645, in widths to suit stud sizes, 32 mm flange height.
- .3 Metal channel stiffener:, 1.4 mm thick cold rolled steel, coated with rust inhibitive coating.
- .4 Acoustical sealant: to 07 92 00 - Joint Sealants.

PART 3 EXECUTION

3.1 ERECTION

- .1 Align partition tracks at floor and ceiling and secure at 600 mm on centre maximum.
- .2 Install damp proof course under stud shoe tracks of partitions on slabs on grade.
- .3 Place studs vertically at 400 mm on centre and not more than 50 mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions.
- .4 Erect metal studding to tolerance of 1:1000.
- .5 Attach studs to bottom and ceiling track using screws.
- .6 Co-ordinate simultaneous erection of studs with installation of service lines. When

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- erecting studs ensure web openings are aligned.
- .7 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections.
 - .8 Provide two studs extending from floor to ceiling at each side of openings wider than stud centres specified. Secure studs together, 50 mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.
 - .9 Install heavy gauge single jamb studs at openings and elsewhere as indicated.
 - .10 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.
 - .11 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.
 - .12 Provide 40 mm stud or furring channel secured between studs for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails, attached to steel stud partitions.
 - .13 Install steel studs or furring channel between studs for attaching electrical and other boxes.
 - .14 Extend partitions to underside deck above except where noted otherwise on drawings.
 - .15 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use 50 mm leg ceiling tracks. Use double track slip joint as indicated.
 - .16 Install continuous insulating strips to isolate studs from uninsulated surfaces.
 - .17 Install two continuous beads of acoustical sealant insulating strip under studs and tracks around perimeter of sound control

partitions.

3.2 CLEANING .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

PART 1 GENERAL

- 1.1 RELATED SECTIONS
- .1 Section 01 33 00 - Submittal Procedures.
 - .2 Section 01 45 00 - Quality Control.
 - .3 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .4 Section 01 78 00 - Closeout Submittals.
 - .5 Section 06 10 00 - Rough Carpentry.
 - .6 Section 09 21 16 - Gypsum Board Assemblies.
 - .7 Section 09 53 00 - Acoustical Suspension.
- 1.2 REFERENCES
- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM E1264, Classification for Acoustical Ceiling Products.
 - .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-92.1, Sound Absorptive Prefabricated Acoustical Units.
 - .3 Canadian Standards Association (CSA)
 - .1 CSA B111, Wire Nails, Spikes and Staples.
 - .4 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.
- 1.3 SUBMITTALS
- .1 Submit duplicate full size samples of each type acoustical units.
- 1.4 MOCK-UP
- .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
 - .2 Construct mock-up 10 m2 minimum of each type acoustical tile ceiling including: one inside corner, one outside corner.
 - .3 Construct mock-up where directed.
 - .4 Allow 48 hours for inspection of mock-up by

Owner's Representative before proceeding with ceiling work.

- .5 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of the finished work.

1.5 ENVIRONMENTAL REQUIREMENTS

- .1 Permit wet work to dry before commencement of installation.
- .2 Maintain uniform minimum temperature of 15°C and humidity of 20 - 40% before and during installation.
- .3 Store materials in work area 48 hours prior to installation.

1.6 EXTRA MATERIALS

- .1 Provide extra materials of acoustic units in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide acoustical units amounting to 2% of gross ceiling area for each pattern and type required for project.
- .3 Extra materials to be from same production run as installed materials.
- .4 Clearly identify each type of acoustic unit, including colour and texture.
- .5 Deliver to Departmental Representative, upon completion of the work of this section.
- .6 Store where directed by Departmental Representative.

1.7 CLOSEOUT SUBMITTALS

- .1 Provide maintenance data for acoustical ceilings for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Acoustic units for suspended ceiling system: to ASTM E1264, Type 4, pattern "E" Fire Class A.
 - .1 Water repellent, washable, scrubbable.
 - .2 Suitable for clean rooms up to 150 Class

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- .3 Pattern "E".
 - .4 Flame spread rating of 25 or less in accordance with CAN/ULC-S102.
 - .5 Smoke developed 50 or less in accordance with CAN/ULC-S102.
 - .6 Noise reduction coefficient (NRC) designation of 0.70.
 - .7 Ceiling Attenuation Class (CAC), in accordance with ASTM E1264.
 - .8 Light reflectance range of 0.86.
 - .9 Edge type square.
 - .10 Colour white.
 - .11 Size 610 x 610 x 19 mm thick.
 - .12 Shape flat.
 - .13 Acceptable product: Armstrong Health Zone Ultima 15/16" square lay in.

PART 3 EXECUTION

- 3.1 EXAMINATION .1 Do not install acoustical panels and tiles until work above ceiling has been inspected by Owner's Representative.
- 3.2 INSTALLATION .1 Install acoustical panels and tiles in ceiling suspension system.
- .2 In fire rated ceiling systems, secure lay-in panels with hold-down clips and protect over light fixtures, diffusers, air return grilles and other appurtenances according to Certification Organizations design requirements.
- 3.3 APPLICATION .1 Install acoustical units parallel to building lines with edge unit not less than 50% of unit width. Refer to reflected ceiling plan.
- .2 Scribe acoustic units to fit adjacent work butt joints tight, terminate edges with moulding.
- 3.4 INTERFACE WITH OTHER WORK .1 Coordinate with Section 09 53 00.01 - Acoustical Suspension.

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- .2 Co-ordinate ceiling work to accommodate components of other sections, such as light fixtures, diffusers, speakers, sprinkler heads, to be built into acoustical ceiling components.

3.5 COMMISSIONING

- .1 Train user staff in the care, cleaning and replacement of acoustical ceiling tile.
- .2 Acceptance of maintenance material turned over to owner.

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures
- .2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .3 Section 09 21 16 - Gypsum Board Assemblies.
- .4 Section 09 51 13 - Acoustical Panel Ceilings.
- .5 Division 22: Trim for recessed mechanical fixtures.
- .6 Division 26: Trim for recessed light fixtures.

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM International)
 - .1 ASTM C635, Specifications for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
 - .2 ASTM C636, Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

1.3 DESIGN REQUIREMENTS

- .1 Maximum deflection: 1/360th of span to ASTM C635 deflection test.

1.4 SUBMITTALS

- .1 Submit reflected ceiling plans for special grid patterns as indicated.
- .2 Indicate lay-out, insert and hanger spacing and fastening details, splicing method for main and cross runners, location of access splines change in level details, access door dimensions, and locations and acoustical unit support at ceiling fixture lateral bracing and accessories.
- .3 Submit one representative model of each type ceiling suspension system.
- .4 Ceiling system to show basic construction and assembly, treatment at walls, recessed fixtures, splicing, interlocking, finishes, acoustical unit installation.

PART 2 PRODUCTS

- 2.1 MATERIALS
- .1 Intermediate duty system to ASTM C635.
 - .2 Basic materials for suspension system:
commercial quality vinyl coated, washable lab
grade cold rolled steel, zinc coated.
 - .3 Suspension system: non fire rated, made up as
follows:
 - .1 two directional exposed tee bar grid.
 - .4 Exposed tee bar grid components: vinyl coated
washable lab grade shop painted satin sheen
white colour. Components die cut. Main tee
with double web, rectangular bulb and 25 mm
rolled cap on exposed face. Cross tee with
rectangular bulb; web extended to form
positive interlock with main tee webs; lower
flange extended and offset to provide flush
intersection.
 - .5 Hanger wire: galvanized soft annealed steel
wire.
 - .1 3.6 mm diameter for access tile
ceilings.
 - .6 Hanger inserts: purpose made.
 - .7 Accessories: splices, clips, wire ties,
retainers and wall moulding to be shadow
mould, to complement suspension system
components, as recommended by system
manufacturer.

PART 3 EXECUTION

- 3.1 INSTALLATION
- .1 Installation: in accordance with ASTM C636
except where specified otherwise.
 - .2 Install suspension system to manufacturer's
instructions.
 - .3 Do not erect ceiling suspension system until
work above ceiling has been inspected by
Owner's Representative.
 - .4 Secure hangers to overhead structure using
attachment methods acceptable to Owner's
Representative.

- .5 Install hangers spaced at maximum 1200 mm centres and within 150 mm from ends of main tees.
- .6 Lay out system according to reflected ceiling plan.
- .7 Ensure suspension system is co-ordinated with location of related components.
- .8 Install wall moulding to provide correct ceiling height.
- .9 Completed suspension system to support super-imposed loads, such as lighting fixtures diffusers grilles and speakers.
- .10 Support at light fixtures and diffusers with additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .11 Interlock cross member to main runner to provide rigid assembly.
- .12 Frame at openings for light fixtures, air diffusers, speakers and at changes in ceiling heights.
- .13 Install access splines to provide 10% ceiling access.
- .14 Finished ceiling system to be square with adjoining walls and level within 1:1000.

3.2 CLEANING

- .1 Touch up scratches, abrasions, voids and other defects in painted surfaces.

PART 1 GENERAL

- 1.1 REFERENCES .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
- .1 Material Safety Data Sheets (MSDS).
- 1.2 SUBMITTALS .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide product data in accordance with Section 01 33 00 - Submittal Procedures.
 - .3 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Submit duplicate 300 x 300 mm sample pieces of sheet material, 300 mm long base, edge strips.
 - .4 Closeout Submittals:
 - .1 Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- 1.3 DELIVERY, STORAGE AND HANDLING .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- 1.4 AMBIENT CONDITIONS .1 Maintain air temperature and structural base temperature at flooring installation area above 20 degrees for 48 hours before, during and 48 hours after installation.
- 1.5 MAINTENANCE .1 Extra Materials:
- .1 Provide extra materials of resilient sheet flooring and adhesives in accordance with Section 01 78 00 - Closeout Submittals.
 - .2 Provide 2 m2 of each colour, pattern and type flooring material required for project for maintenance use.
 - .3 Extra materials one piece and from same

- production run as installed materials.
- .4 Identify each roll of sheet flooring and each container of adhesive.
 - .5 Deliver to Departmental Representative, upon completion of the work of this section.
 - .6 Store where directed by Departmental Representative.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Homogeneous sheet PVC flooring:
 - .1 Construction: Homogeneous
 - .2 Product Line: I Medintech
 - .3 International Product Specifications: ASTM F 1913, ISO 10581, Type II
 - .4 Overall thickness: 2.0 mm
 - .5 Wear Layer thickness: 2.0mm
 - .6 Finish: UV-cured Polyurethane
 - .7 Installation: Full spread adhesives - S-599 Premium
 - .8 Seaming Options: Heat weld with solid weld rods or S-761.
 - .9 Maintenance Options: No polish - Spray/Dry/No Buff.
 - .10 Roll length: Up to 25 m.
 - .11 Width: 1.83 m.
- .2 Performance

<u>Performance</u>	<u>Test Method</u>	<u>Minimum Requirement</u>	<u>Performance vs. Requirement</u>
Thickness	ASTM F 386	≥ 0.075 in.	Exceeds
Residual Indentation	ASTM F 1914	≤ 0.007 in.	Exceeds
Static Load Resistance (250 psi)	ASTM F 970	≤ 0.005 in.	Exceeds
Flexibility	ASTM F 137	1 ½ in.	Exceeds
Chemical Resistance	ASTM F 925	No more than slight change in surface dulling, attack or staining.	Meets or Exceeds
Resistance to Heat	ASTM F 1514	ΔE ≤ 8	Exceeds
Resistance to Light	ASTM F 1515	ΔE < 8	Exceeds
Fire Test Data - Flame Spread	ASTM E 648	0.45 W/cm ² or more, Class 1	Meets

Fire Test Data - Smoke Evolution	ASTM E 662	450 or less	Meets
Fire test Data - Canada	CAN/ULC S102.2	Use dependent	Flame Spread- 100, Smoke Developed-280
Static Load Limit - Subjective Visual	ASTM F 970	No Visually apparent indentation	750 psi
Certified Low Emitting Product	LEED® EQ4.3	Meets Guidelines	Meets
Certified Low Emitting Adhesive	LEED® EQ4.1	Meets Guidelines	Meets
Plant Certification	ISO 14001	Meets Certification Guidelines	Certified
Indoor Air Quality	FloorScore™	Meets Certification Guidelines	Certified
Indoor Air Quality	CHPS 01350	Meets Certification Guidelines	Certified

.3 Warranty:

- .1 5 Year commercial warranty when installed in accordance with Armstrong's Guaranteed Installation Systems manual, F-5061.

.4 Colours:

- .1 To be selected from manufacturers standard colour palette of a minimum of 18 colours.

.5 Primers and adhesives: of types recommended by resilient flooring manufacturer for specific material on applicable substrate, above, on or below grade.

- .1 Floor adhesives:
 - .1 Adhesive: maximum VOC limit 60 g/L to SCAQMD Rule 1168.
 - .2 Cove base adhesives:
 - .1 Adhesive: maximum VOC limit 50 g/L to SCAQMD Rule 1168.

.6 Sub floor filler and leveller: white premix latex requiring water only to produce cementitious paste as recommended by flooring manufacturer for use with their product.

.7 Metal edge strips:

- .1 Aluminum extruded, smooth, mill finish with lip to extend under floor finish, shoulder flush with top of adjacent floor finish.

.8 Edging to floor penetrations: aluminum, type

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- recommended by flooring manufacturer.
- .9 Sealer and wax: type recommended by resilient flooring material manufacturer for material type and location.
- 2.2 STANDARD OF ACCEPTANCE .1 Medintech by Armstrong
- .2 Resilient base:
- .1 Type: rubber
- .2 Style: cove
- .3 Thickness: 2.03mm
- .4 Hright: 101.6mm
- .5 Lengths: cut lengths minimum 1200mm
- .6 Colours: selected by Departmental Representative from a minimum palette of 36 colours.

PART 3 EXECUTION

- 3.1 MANUFACTURER'S INSTRUCTIONS .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

- 3.2 SITE VERIFICATION OF CONDITIONS .1 Ensure concrete floors are clean and dry by using test methods recommended by flooring manufacturer.

- 3.3 PREPARATION .1 Remove existing flooring, bases, setting beds, adhesives and provide floor leveller, fill, level, grind and prepare floors to accept new finishes.
- .2 Clean floor and apply filler; trowel and float to leave smooth, flat hard surface. Prohibit traffic until filler cured and dry.
- .3 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.
- .4 Prime and seal concrete slab to resilient flooring manufacturer's printed instructions.

- 3.4 APPLICATION: FLOORING .1 Provide high ventilation rate, with maximum outside air, during installation, and for 48 to 72 hours after installation. If possible, vent directly to outside. Do not let contaminated air recirculate through district or whole

building air distribution system. Maintain extra ventilation for at least one month following building occupation.

- .2 Apply adhesive uniformly using recommended trowel. Do not spread more adhesive than can be covered by flooring before initial set takes place.
- .3 Lay flooring with seams parallel to building lines to produce a minimum number of seams. Border widths minimum 1/3 width of full material.
- .4 Run sheets in direction of traffic. Double cut sheet joints and continuously seal heat weld according to manufacturer's printed instructions.
- .5 Heat weld seams of sheet flooring with colour matched PVC rods in accordance with manufacturer's printed instructions.
- .6 As installation progresses, and after installation, roll flooring with 45 kg minimum roller to ensure full adhesion.
- .7 Cut flooring around fixed objects.
- .8 Install flooring in pan type floor access covers. Maintain floor pattern.
- .9 Continue flooring over areas which will be under built-in furniture.
- .10 Terminate flooring at centreline of door in openings where adjacent floor finish or colour is dissimilar.
- .11 Install metal edge strips at unprotected or exposed edges where flooring terminates.

3.5 APPLICATION:
BASE

- .1 Lay out base to keep number of joints at minimum.
- .2 Clean substrate and prime with one coat of adhesive.
- .3 Apply adhesive to back of base.
- .4 Set base against wall and floor surfaces tightly by using 3 kg hand roller.
- .5 Install straight and level to variation of

1:1000.

.6 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames.

.7 Cope internal corners. Use premoulded corner units for right angle external corners. Use formed straight base material for external corners of other angles.

.8 Install base 100 mm height.

3.6 CLEANING

.1 Proceed in accordance with Section 01 74 11 - Cleaning.

.2 Remove excess adhesive from floor, base and wall surfaces without damage.

.3 Clean, seal and wax floor and base surface to flooring manufacturer's printed instructions.

3.7 PROTECTION

.1 Protect new floors from time of final set of adhesive after initial waxing until final waxing.

.2 Prohibit traffic on floor for 48 hours after installation.

PART 1 GENERAL

1.1 SUMMARY

- .1 Section Includes:
 - .1 Material and installation of site applied paint finishes to new interior surfaces, including site painting of shop primed surfaces.
 - .2 Sustainable requirements for construction and verification:
- .2 Related Sections:
 - .1 Section 01 33 00 - Submittal Procedures.
 - .2 Section 01 35 28 - Health and Safety Requirements.
 - .3 Section 01 45 00 - Testing and Quality Control.
 - .4 Section 01 61 00 - Common Product Requirements.
 - .5 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .6 Section 01 78 00 - Closeout Submittals.

1.2 REFERENCES

- .1 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33
- .2 Environmental Protection Agency (EPA)
 - .1 EPA Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 - 1995, (for Surface Coatings).
- .3 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .4 Master Painters Institute (MPI)
 - .1 MPI Architectural Painting Specifications Manual, 2004.
- .5 National Fire Code of Canada - 1995
- .6 Society for Protective Coatings (SSPC)
 - .1 SSPC Painting Manual, Volume Two,

8th Edition, Systems and
Specifications Manual.

- .7 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.

1.3 QUALITY
ASSURANCE

- .1 Qualifications:
 - .1 Contractor: minimum of five years proven satisfactory experience. Provide list of last three comparable jobs including, job name and location, specifying authority, and project manager.
 - .2 Journeymen: qualified journeymen who have "Tradesman Qualification Certificate of Proficiency" engaged in painting work.
 - .3 Apprentices: working under direct supervision of qualified trades person in accordance with trade regulations.
- .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 28 - Health and Safety Requirements.

1.4 SCHEDULING

- .1 Submit work schedule for various stages of painting to Departmental Representative for review. Submit schedule minimum of 48 hours in advance of proposed operations.
- .2 Obtain written authorization from Departmental Representative for changes in work schedule.
- .3 Schedule painting operations to prevent disruption of occupants.

1.5 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit product data and instructions for each paint and coating product to be used.
 - .2 Submit product data for the use and application of paint thinner.

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- .3 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOCs during application and curing.
 - .3 Samples:
 - .1 Submit full range colour sample chips to indicate where colour availability is restricted.
 - .2 Submit duplicate 200 x 300 mm sample panels of each paint stain clear coating special finish with specified paint or coating in colours, gloss/sheen and textures required to MPI Architectural Painting Specification Manual standards submitted on following substrate materials:
 - .1 3 mm plate steel for finishes over metal surfaces.
 - .2 13 mm birch plywood for finishes over wood surfaces.
 - .3 50 mm concrete block for finishes over concrete or concrete masonry surfaces.
 - .4 13 mm gypsum board for finishes over gypsum board and other smooth surfaces.
 - .3 Retain reviewed samples on-site to demonstrate acceptable standard of quality for appropriate on-site surface.
 - .4 Test reports: submit certified test reports for paint from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.
 - .1 Lead, cadmium and chromium: presence of and amounts.
 - .2 Mercury: presence of and amounts.
 - .3 Organochlorines and PCBs: presence of and amounts.
 - .5 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance

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- characteristics and physical properties.
- .6 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation and application instructions.
 - .7 Closeout Submittals: submit maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals include following:
 - .1 Product name, type and use.
 - .2 Manufacturer's product number.
 - .3 Colour numbers.
 - .4 MPI Environmentally Friendly classification system rating.
- 1.6 MAINTENANCE
- .1 Extra Materials:
 - .1 Deliver to extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Section 01 78 00 - Closeout Submittals.
 - .2 Quantity: provide - one four litre can of each type and colour of primer stain finish coating. Identify colour and paint type in relation to established colour schedule and finish system.
 - .3 Delivery, storage and protection: comply with Departmental Representative requirements for delivery and storage of extra materials.
- 1.7 DELIVERY, STORAGE AND HANDLING
- .1 Packing, Shipping, Handling and Unloading:
 - .1 Pack, ship, handle and unload materials in accordance with Section 01 61 00 - Common Product Requirements and manufacturer's written instructions.
 - .2 Acceptance at Site:
 - .1 Identify products and materials with labels indicating:
 - .1 Manufacturer's name and address.

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- .2 Type of paint or coating.
 - .3 Compliance with applicable standard.
 - .4 Colour number in accordance with established colour schedule.
- .3 Remove damaged, opened and rejected materials from site.
 - .4 Storage and Protection:
 - .1 Provide and maintain dry, temperature controlled, secure storage.
 - .2 Store materials and supplies away from heat generating devices.
 - .3 Store materials and equipment in well ventilated area with temperature range 7 degrees C to 30 degrees C.
 - .5 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
 - .6 Keep areas used for storage, cleaning and preparation clean and orderly. After completion of operations, return areas to clean condition.
 - .7 Remove paint materials from storage only in quantities required for same day use.
 - .8 Fire Safety Requirements:
 - .1 Provide one 9 kg Type ABC dry chemical fire extinguisher adjacent to storage area.
 - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
 - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.
 - .9 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 -

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- Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
 - .3 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 (WMP).
 - .4 Separate for recycling and place in designated containers Steel Metal Plastic waste in accordance with Waste Management Plan (WMP).
 - .5 Place materials defined as hazardous or toxic in designated containers.
 - .6 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
 - .7 Ensure emptied containers are sealed and stored safely.
 - .8 Unused paint coating materials must be disposed of at official hazardous material collections site as approved by Departmental Representative.
 - .9 Paint, stain and wood preservative finishes and related materials (thinners, and solvents) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
 - .10 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
 - .11 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
 - .12 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground follow these

procedures:

- .1 Retain cleaning water for water-based materials to allow sediments to be filtered out.
- .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
- .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
- .4 Dispose of contaminants in approved legal manner in accordance with hazardous waste regulations.
- .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
- .13 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.
- .14 Set aside and protect surplus and uncontaminated finish materials: Deliver to or arrange collection by organizations for verifiable re-use or re-manufacturing.

1.8 SITE
CONDITIONS

- .1 Heating, Ventilation and Lighting:
 - .1 Ventilate enclosed spaces.
 - .2 Provide heating facilities to maintain ambient air and substrate temperatures above 10 degrees C for 24 hours before, during and after paint application until paint has cured sufficiently.
 - .3 Provide continuous ventilation for seven days after completion of application of paint.
 - .4 Coordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
 - .5 Provide temporary ventilating and heating equipment where permanent

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- facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
- .6 Provide minimum lighting level of 323 Lux on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
- .1 Unless pre-approved written approval by specifying body and product manufacturer, perform no painting when:
 - .1 Ambient air and substrate temperatures are below 10 degrees C.
 - .2 Substrate temperature is above 32 degrees C unless paint is specifically formulated for application at high temperatures.
 - .3 Substrate and ambient air temperatures are not expected to fall within MPI or paint manufacturer's prescribed limits.
 - .4 The relative humidity is under 85 % or when the dew point is more than 3 degrees C variance between the air/surface temperature. Paint should not be applied if the dew point is less than 3 degrees C below the ambient or surface temperature. Use sling psychrometer to establish the relative humidity before beginning paint work.
 - .5 Ensure that conditions are within specified limits during drying or curing process, until newly applied coating can itself withstand 'normal' adverse environmental factors.
 - .2 Perform painting work when maximum moisture content of the substrate is below:
 - .1 15 % for wood.
 - .2 12 % for plaster and gypsum

board.

- .3 Test for moisture using calibrated electronic Moisture Meter. Test concrete floors for moisture using "cover patch test".
- .4 Test concrete, masonry and plaster surfaces for alkalinity as required.
- .3 Surface and Environmental Conditions:
 - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
 - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.
 - .3 Apply paint when previous coat of paint is dry or adequately cured.
- .4 Additional interior application requirements:
 - .1 Apply paint finishes when temperature at location of installation can be satisfactorily maintained within manufacturer's recommendations.
 - .2 Apply paint in occupied facilities during silent hours only. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
- .2 Provide paint materials for paint systems from single manufacturer.
- .3 Conform to latest MPI requirements for interior painting work including preparation and priming.
- .4 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers,

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- thinners, solvents, etc.) in accordance with MPI Architectural Painting Specification Manual "Approved Product" listing.
- .5 Linseed oil, shellac, and turpentine: highest quality product from approved manufacturer listed in MPI Architectural Painting Specification Manual, compatible with other coating materials as required.
 - .6 Provide paint products meeting MPI "Environmentally Friendly", E2 ratings based on VOC (EPA Method 24) content levels.
 - .7 Use MPI listed materials having minimum E2 rating where indoor air quality (odour) requirements exist.
 - .8 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids:
 - .1 Water-based Water soluble Water clean-up.
 - .2 Non-flammable biodegradable.
 - .3 Manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
 - .4 Manufactured without compounds which contribute to smog in the lower atmosphere.
 - .5 Do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.
 - .9 Formulate and manufacture water-borne surface coatings with no aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.
 - .10 Flash point: 61.0 degrees C or greater for water-borne surface coatings and recycled water-borne surface coatings.
 - .11 Ensure manufacture and process of both water-borne surface coatings and recycled water-borne surface coatings does not release:
 - .1 Matter in undiluted production plant effluent generating 'Biochemical Oxygen Demand' (BOD) in excess of 15 mg/L to natural

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- watercourse or sewage treatment facility lacking secondary treatment.
 - .2 Total Suspended Solids (TSS) in undiluted production plant effluent in excess of 15 mg/L to natural watercourse or a sewage treatment facility lacking secondary treatment.
 - .12 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes to meet minimum "Environmentally Friendly" E2 rating.
 - .13 Recycled water-borne surface coatings to contain 50 % post-consumer material by volume.
 - .14 Recycled water-borne surface coatings must not contain:
 - .1 Lead in excess of 600.0 ppm weight/weight total solids.
 - .2 Mercury in excess of 50.0 ppm weight/weight total product.
 - .3 Cadmium in excess of 1.0 ppm weight/weight total product.
 - .4 Hexavalent chromium in excess of 3.0 ppm weight/weight total product.
 - .5 Organochlorines or polychlorinated biphenyls (PCBS) in excess of 1.0 ppm weight/weight total product.

2.2 COLOURS

- .1 Departmental Representative will provide Colour Schedule after Contract award.
- .2 Colour schedule will be based upon selection of one base colour and two accent colours. No more than three colours will be selected for entire project.
- .3 Selection of colours from manufacturer's full range of colours.
- .4 Where specific products are available in restricted range of colours, selection based on limited range.
- .5 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between

coats.

2.3 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site. Obtain written approval from Departmental Representative for tinting of painting materials.
- .2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
- .3 Use and add thinner in accordance with paint manufacturer's recommendations. Do not use kerosene or similar organic solvents to thin water-based paints.
- .4 Thin paint for spraying in accordance with paint manufacturer's instructions.
- .5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.4 GLOSS/SHEEN RATINGS

- .1 Paint gloss is defined as sheen rating of applied paint, in accordance with following values:

	Gloss @ 60 degrees	Sheen @ 85 degrees
Gloss Level 1 - Matte Finish (flat)	Max. 5	Max. 10
Gloss Level 2 - Velvet-Like Finish	Max.10	10 to 35
Gloss Level 3 - Eggshell Finish	10 to 25	10 to 35
Gloss Level 4 - Satin-Like Finish	20 to 35	min. 35
Gloss Level 5 - Traditional Semi-Gloss Finish	35 to 70	
Gloss Level 6 - Traditional Gloss	70 to 85	
Gloss Level 7 - High Gloss Finish	More than 85	

- .2 Gloss level ratings of painted surfaces as indicated and as noted on Finish Schedule.

2.5 INTERIOR PAINTING SYSTEMS

- .1 Structural steel and metal fabrications: columns, beams, joists:
 - .1 INT 5.1A - Quick dry enamel semi-gloss finish.
- .2 Galvanized metal: frames, misc. steel, pipes, and ducts.
 - .1 INT 5.3A - Latex insert gloss level 65 finish.

- .3 Dimension lumber: columns, beams, exposed joists:
 - .1 INT 6.2A - Latex insert gloss level 65 finish (over alkyd primer).
- .4 Dressed lumber: including doors, door and window frames, casings, mouldings:
 - .1 INT 6.3A - High performance architectural latex insert gloss level 65 finish.
- .5 Plaster and gypsum board: gypsum wallboard, drywall, "sheet rock type material", and textured finishes:
 - .1 INT 9.2A - Walls Latex insert gloss level G4 finish (over latex sealer).

2.6 SOURCE
QUALITY CONTROL

- .1 Perform following tests on each batch of consolidated post-consumer material before surface coating is reformulated and canned. Testing by laboratory or facility which has been accredited by Standards Council of Canada.
 - .1 Lead, cadmium and chromium are to be determined using ICP-AES (Inductively Coupled Plasma - Atomic Emission Spectroscopy) technique no. 6010 as defined in EPA SW-846.
 - .2 Mercury is to be determined by Cold Vapour Atomic Absorption Spectroscopy using Technique no. 7471 as defined in EPA SW-846.
 - .3 Organochlorines and PCBs are to be determined by Gas Chromatography using Technique no. 8081 as defined in EPA SW-846.

PART 3 EXECUTION

3.1 MANUFACTURER'S
INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.

3.2 GENERAL

- .1 Perform preparation and operations for

interior painting in accordance with MPI Architectural Painting Specifications Manual except where specified otherwise.

- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.

3.3 EXAMINATION

- .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Departmental Representative damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .3 Maximum moisture content as follows:
 - .1 Stucco, plaster and gypsum board: 12%.
 - .2 Concrete: 12%.
 - .3 Clay and Concrete Block/Brick: 12%.
 - .4 Wood: 15%.

3.4 PREPARATION

- .1 Protection:
 - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Departmental Representative.
 - .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
 - .3 Protect factory finished products and equipment.
 - .4 Protect passing pedestrians, building occupants and general public in and about the building.

- .2 Surface Preparation:
 - .1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
 - .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
 - .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
 - .1 Prime all currently oil painted surfaces prior to application of latex finish.
 - .2 Remove dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
 - .3 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
 - .4 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
 - .5 Allow surfaces to drain completely and allow to dry thoroughly.
 - .6 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
 - .7 Use trigger operated spray nozzles for water hoses.
 - .8 Many water-based paints cannot be removed with water once dried.

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- Minimize use of mineral spirits or organic solvents to clean up water-based paints.
- .4 Clean following surfaces with high pressure water washing.
 - .5 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
 - .6 Where possible, prime non-exposed surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
 - .1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
 - .2 Apply wood filler to nail holes and cracks.
 - .3 Tint filler to match stains for stained woodwork.
 - .7 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
 - .8 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements. Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes blowing with clean dry compressed air or vacuum cleaning.
 - .9 Touch up of shop primers with primer as specified.
 - .10 Do not apply paint until prepared surfaces have been accepted by Departmental Representative.
 - .11 Prime existing oil painted surfaces prior to application of latex finishes.

3.5 APPLICATION

- .1 Method of application to be as approved by Departmental Representative. Apply paint by brush roller airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Brush and Roller Application:
 - .1 Apply paint in uniform layer using brush and/or roller type suitable for application.
 - .2 Work paint into cracks, crevices and corners.
 - .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
 - .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple.
 - .5 Remove runs, sags and brush marks from finished work and repaint.
- .3 Spray application:
 - .1 Provide and maintain equipment that is suitable for intended purpose, capable of atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
 - .2 Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
 - .3 Apply paint in uniform layer, with overlapping at edges of spray pattern. Back roll first coat application.
 - .4 Brush out immediately all runs and sags.
 - .5 Use brushes and rollers to work paint into cracks, crevices and places which are not adequately painted by spray.
- .4 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access.

3.6 MECHANICAL/
ELECTRICAL
EQUIPMENT

- .5 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .6 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .7 Sand and dust between coats to remove visible defects.
- .8 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.
- .9 Finish inside of cupboards and cabinets as specified for outside surfaces.
- .10 Finish closets and alcoves as specified for adjoining rooms.
- .11 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.
- .1 Paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as indicated.
- .2 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .3 Do not paint over nameplates.
- .4 Keep sprinkler heads free of paint.
- .5 Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.
- .6 Paint fire protection piping red.
- .7 Paint disconnect switches for fire alarm system and exit light systems in red enamel.

- .8 Paint both sides and edges of backboards for telephone and electrical equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.
- .9 Do not paint interior transformers and substation equipment.

3.7 SITE TOLERANCES

- .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
- .2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
- .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

3.8 FIELD QUALITY CONTROL

- .1 Standard of Acceptance:
 - .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
 - .2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
 - .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
- .2 Field inspection of painting operations to be carried out by independent inspection firm as designated by Departmental Representative.
- .3 Advise Departmental Representative when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.
- .4 Cooperate with inspection firm and provide access to areas of work.
- .5 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental

Representative.

3.9 RESTORATION

- .1 Clean and re install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Departmental Representative. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Departmental Representative.

PART 1 GENERAL

- 1.1 RELATED SECTIONS
- .1 Section 01 33 00 - Submittal Procedures.
 - .2 Section 01 35 28 - Health and Safety Requirements.
 - .3 Section 01 74 21 - Construction / Demolition Waste Management and Disposal.
 - .4 Section 01 78 00 - Closeout Submittals.
 - .5 02 41 16.01 - Structure Demolition - Short Form
 - .6 08 82 00.02 - Asbestos Abatement - Intermediate Precautions
- 1.2 SUBMITTALS
- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Shop drawings; submit drawings stamped and signed for approval by Departmental Representative.
 - .3 Shop drawings to show:
 - .1 Mounting arrangements.
 - .2 Operating and maintenance clearances.
 - .4 Shop drawings and product data accompanied by:
 - .1 Detailed drawings of bases, supports, and anchor bolts.
 - .2 Acoustical sound power data, where applicable.
 - .3 Points of operation on performance curves.
 - .4 Manufacturer to certify current model production.
 - .5 Certification of compliance to applicable codes.
 - .5 Closeout Submittals:
 - .1 Provide operation and maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

- .2 Operation and maintenance manual approved by, and final copies deposited with, Departmental Representative before final inspection.
- .3 Operation data to include:
 - .1 Control schematics for systems including environmental controls.
 - .2 Description of systems and their controls.
 - .3 Operation instruction for systems and component.
- .4 Maintenance data to include:
 - .1 Servicing, maintenance, operation and trouble-shooting instructions for each item of equipment.
- .5 Approvals:
 - .1 Submit 2 copies of draft Operation and Maintenance Manual to Departmental Representative for approval. Submission of individual data will not be accepted unless directed by Departmental Representative.
 - .2 Make changes as required and re-submit as directed by Departmental Representative.
- .6 Site records:
 - .1 Departmental Representative will provide 1 set of reproducible mechanical drawings or AutoCAD files. Provide sets of white prints as required for each phase of work. Mark changes as work progresses and as changes occur. Include changes to existing mechanical systems, control systems and low voltage control wiring.
 - .2 Transfer information weekly to reproducibles, revising reproducibles to show work as actually installed.
 - .3 Use different colour for each service.
 - .4 Make available for reference purposes and inspection.
- .7 As-built drawings:
 - .1 Identify each drawing in lower right hand corner in letters at

- least 12 mm high as follows: - "AS BUILT DRAWINGS: THIS DRAWING HAS BEEN REVISED TO SHOW MECHANICAL SYSTEMS AS INSTALLED" (Signature of Contractor) (Date).
- .2 Submit to Departmental Representative for approval and make corrections as directed.
 - .3 Submit completed reproducible as-built drawings with Operating and Maintenance Manuals.
 - .8 Submit copies of as-built drawings for inclusion in final TAB report.
- 1.3 QUALITY ASSURANCE
- .1 Quality Assurance: in accordance with Section 01 45 00 - Quality Control.
 - .2 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 28 - Health and Safety Requirements.
- 1.4 MAINTENANCE
- .1 Provide one set of special tools required to service equipment as recommended by manufacturers and in accordance with Section 01 78 00 - Closeout Submittals.
- 1.5 DELIVERY, STORAGE, AND HANDLING
- .1 Waste Management and Disposal:
 - .1 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- 1.6 WARRANTY
- .1 Provide a written guarantee, signed and issued in the name of the owner, against defective materials and workmanship for a period of one (1) year from the date of Substantial Completion.
- PART 2 PRODUCTS
- 2.1 MATERIALS
- .1 All materials used on this project shall be new and CSA approved unless noted otherwise.

2.2 DUCTWORK

- .1 Galvanized Steel:
 - .1 Lock forming quality: to ASTM A653, G90 zinc coating.
 - .2 Thickness, fabrication and reinforcement: SMACNA.
 - .3 Joints: to SMACNA or propriety manufactured flanged duct joint to be considered to a class A seal.
- .2 Stainless Steel:
 - .1 To ASTM A480/A480M, Type 304.
 - .2 Finish: No. 4 finish on exposed side of duct in finished areas, No. 3 finish or lower where concealed.
 - .3 Thickness, fabrication and reinforcement: to SMACNA.
 - .4 Joints: to SMANCA and be continuous inert gas welded.
- .3 Hangers and Supports:
 - .1 Strap hangers: of same material as duct but next sheet metal thickness heavier than duct. Maximum size duct supported by strap hanger: 500 mm.
 - .2 Hanger configuration: to SMACNA.
 - .3 Hangers: galvanized steel angle with black steel rods to ASHRAE or SMACNA following table:

<u>Duct Size (mm)</u>	<u>Angle Size (mm)</u>	<u>Rod Size (mm)</u>
up to 750	25 x 25 x 3	6
- .4 Upper Hanger Attachments:
 - .1 For concrete: manufactured concrete inserts.
 - .1 Acceptable Product: Myatt, Grinnell, Hunt.
 - .2 For steel joist: manufactured joist clamp steel plate washer.
 - .1 Acceptable Product: Myatt, Grinnell, Hunt.
 - .3 For steel beams: manufactured beam clamps.
 - .1 Acceptable Product: Myall, Grinnell, Hunt.
- .5 Installers to be certified to journeyperson level in sheet metal work.

PART 3 EXECUTION

3.1 DUCTWORK

- .1 General:
- .1 Do work in accordance with NFPA 90A, NFPA 90B, and SMACNA.
 - .2 Do not break continuity of insulation vapour barrier with hangers or rods. Insulate strap hangers 100 mm beyond insulated duct.
 - .3 Support risers in accordance with SMACNA.
 - .4 Install breakaway joints in ductwork on sides of fire separation. Do not place fire stopping material in expansion space between damper sleeve and fire partition.
 - .5 Install proprietary manufactured flanged duct joints in accordance with manufacturer's instructions.
 - .6 Manufacture duct in lengths and diameter to accommodate installation of acoustic duct lining.
 - .7 Extend ductwork for supply air diffusers to facilitate the installation of new ceilings. Refer to architectural drawings for new ceiling heights. Match existing duct materials and joining materials.
 - .8 Existing exhaust ductwork is stainless steel welded. New ductwork for this to match material and gauge of existing and be all welded. Coordinate connection of new stainless steel welded ductwork with existing in the field.

3.2 ASBESTOS
ABATEMENT

- .1 Asbestos abatement is part of this project. All abatement will be performed by others. Coordinate with the general Contractor, the Asbestos Contractor and other trades, the timing for mechanical systems removal and reinstallation as applicable.

3.3 SELECTIVE
DEMOLITION

- .1 Coordinate all selective demolition work with Departmental Representative including but not limited to: services to be removed completely; services to be removed and reinstalled; routing of new services; location of new services in casework chases, location of mechanical components in new casework and connection of mechanical services to the same.
- .2 Carry out all demolition work in a neat and orderly manner.
- .3 Keep noise, dust, and similar nuisances to a minimum.
- .4 Do not collapse walls.
- .5 Do not throw or drop materials.
- .6 Where material indicated to be removed is suspected of containing asbestos, inform Departmental Representative immediately. Do not disturb materials suspected of containing asbestos until asbestos content has been verified by Owner's Representative.
- .7 Use extreme caution when cutting into shafts and chases. Shafts and chases may end above occupied areas within building. Take all necessary precautions to prevent debris from falling through openings between floors during demolition operations. Comply with requirements of Division.
- .8 01 50 00 Section "Temporary Facilities".

3.4 CONNECTION
OF NEW SERVICES TO
EXISTING SERVICES

- .1 Repair existing services to remain inadvertently damaged with materials to match existing.
- .2 Connect new services to existing. Exact locations to be field determined.

3.5 REMOVED AND
REINSTALLED ITEMS

- .1 Clean and repair items to functional condition adequate for intended reuse.
- .2 Pack or crate items after cleaning and repairing. Identify contents of containers.
- .3 Protect items from damage during transport and storage.
- .4 Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports

3.6 EXISTING

- .1 Protect construction indicated to remain against damage and soiling during

<u>ITEMS TO REMAIN</u>		selective demolition. When permitted by Departmental Representative, items may be removed to a suitable, protected storage location off-site during selective demolition and reinstalled in their new locations after selective demolition operations are complete.
<u>3.7 WORK HOURS</u>	.1	Building 25 is occupied during regular working hours from 9:00 a.m. to 5:00 p.m. Coordinate work with the Departmental Representative, including after hour work and on weekends to minimize disruption to building operations and staff. The building is a secure site and all trades will require security passes at the beginning of each shift. Coordinate the same with the Departmental Representative. Delays in access to site may be experienced during the execution of this project. Include cost in Bid in relation to the same.
<u>3.8 PAINTING, REPAIRS AND RESTORATION</u>	.1	Do painting in accordance with Section 09 91 23 - Interior Painting.
	.2	Prime and touch up marred finished paintwork to match original.
	.3	Restore to new condition, finishes which have been damaged.
<u>3.9 CLEANING</u>	.1	Clean interior and exterior of all systems including strainers. Vacuum interior of ductwork and air handling units.
<u>3.10 PROTECTION</u>	.1	Protect equipment and systems openings from dirt, dust, and other foreign materials with materials appropriate to system.
<u>3.11 CONTROLS MODIFICATIONS</u>	.1	Controls for a number of buildings including Building 25 will be ongoing during the execution of this work. All control work for this project (demolition and new) shall be by "Controls Upgrade Contractor". In relation to the controls, coordinate the integration of the controls for the lab with the General Contractor and the "Controls Upgrade Contractor" including timing of disconnection of the existing pneumatic and electronic

controls and existing equipment and the
installation of the new electronic controls
and equipment.

PART 1 GENERAL

- 1.1 RELATED SECTIONS
- .1 Section 01 33 00 - Submittal Procedures.
 - .2 Section 01 35 28 - Health and Safety Requirements.
 - .3 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
 - .4 Section 01 78 00 - Closeout Submittals.
 - .5 Section 01 91 13 - General Commissioning (CX) Requirements
 - .6 Section 21 05 01 - Common Work Results for Mechanical.
- 1.2 REFERENCES
- .1 American National Standards Institute (ANSI)/American Society of Mechanical Engineers International (ASME).
 - .1 ANSI/ASME B16.15, Cast Bronze Threaded Fittings, Classes 125 and 250.
 - .2 ANSI/ASME B16.18, Cast Copper Alloy Solder Joint Pressure Fittings.
 - .3 ANSI/ASME B16.22, Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
 - .4 ANSI/ASME B16.24, Cast Copper Alloy Pipe Flanges and Flanged Fittings, Class 150, 300, 400, 600, 900, 1500 and 2500.
 - .2 American National Standards Institute/National Sanitation Foundation (ANSI/NSF).
 - .1 ANSI/NSF 61, Drinking Water System Components.
 - .3 American Society for Testing and Materials International (ASTM).
 - .1 ASTM A 307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
 - .2 ASTM A536, Standard Specification for Ductile Iron Castings.
 - .3 ASTM B 88M, Standard Specification for Seamless Copper Water Tube (Metric).
 - .4 ASTM F 492, Standard Specification for

Propylene and Polypropylene (PP)
Plastic-Lined Ferrous Metal Pipe
Fittings.

- .4 American Water Works Association (AWWA).
 - .1 AWWA C111, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - .2 AWWA C606, Grooved and Shouldered Joints.
- .5 Canadian Standards Association (CSA International).
 - .1 CSA B242, Groove and Shoulder Type Mechanical Pipe Couplings.
- .6 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Protection Act (CEPA).
- .7 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).
- .8 Manufacturer's Standardization Society of the Valve and Fittings Industry (MSS).
 - .1 MSS-SP-67, Butterfly Valves.
 - .2 MSS-SP-70, Cast Iron Gate Valves, Flanged and Threaded Ends.
 - .3 MSS-SP-71, Cast Iron Swing Check Valves, Flanged and Threaded Ends.
 - .4 MSS-SP-80, Bronze Gate, Globe, Angle and Check Valves.
- .9 National Research Council (NRC)/Institute for Research in Construction.
 - .1 NRCC 38728, National Plumbing Code of Canada (NPC).
- .10 Transport Canada (TC).
 - .1 Transportation of Dangerous Goods Act (TDGA).

1.3 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature and datasheets for insulation and adhesives, and include product

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- characteristics, performance criteria,
physical size, finish and limitations.
- .3 Submit WHMIS MSDS - Material Safety Data
Sheets in accordance with Section 02 62 00.01
- Hazardous Materials.
 - .4 Closeout Submittals:
 - .1 Provide maintenance data for
incorporation into manual specified in
Section 01 78 00 Closeout Submittals.
 - .5 Grooved joint couplings and fittings to be
indicated on product submittals and to be
specifically identified with the applicable
style or series designation.
- 1.4 HEALTH AND SAFETY
- .1 Do construction occupational health and
safety in accordance with Section 01 35 28 -
Health and Safety Requirements.
- 1.5 WASTE MANAGEMENT AND DISPOSAL
- .1 Separate waste materials for reuse and
recycling in accordance with Section 01 74 21
- Construction/Demolition Waste Management
and Disposal.
 - .2 Remove from site and dispose of packaging
materials at appropriate recycling
facilities.
 - .3 Separate for reuse and recycling and place in
designated containers Steel, Metal, Plastic
waste in accordance with Waste Management
Plan.
 - .4 Place materials defined as hazardous or toxic
in designated containers.
 - .5 Handle and dispose of hazardous materials in
accordance with CEPA, TDGA, Regional and
Municipal regulations.
 - .6 Fold up metal banding, flatten and place in
designated area for recycling.

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- 2.1 PIPING .1 Domestic hot, cold and recirculation systems, within building.
- .1 Above ground: copper tube, hard drawn, type L: to ASTM B88M.
 - .2 Buried or embedded: copper tube, soft annealed, type K: to ASTM B88M, in long lengths and with no buried joints.
- 2.2 FITTINGS .1 Bronze pipe flanges and flanged fittings, Class 150 and 300: to ANSI/ASME B16.24.
- .2 Cast bronze threaded fittings, Class 125 and 250: to ANSI/ASME B16.15.
 - .3 Cast copper, solder type: to ANSI/ASME B16.18.
 - .4 Wrought copper and copper alloy, solder type: to ANSI/ASME B16.22.
 - .5 NPS2 and larger: roll grooved to CSA B242. Cast bronze to ANSI/ASME B16.18 or wrought copper ANSI/ASME B16.22.
 - .1 Fittings to be manufactured to copper-tube dimensions. Flaring of tube or fitting ends to accommodate IPS sized couplings is not permitted.
 - .6 NPS 1 ½ and under: Cast copper, ANSI/ASME B16.18 or wrought copper, ANSI/ASME B16.22; with 301 stainless steel internal components, EPDM seal, and push-to-connect or press fit joints, for hard drawn copper tube type L or K, rated for 1300 kPa at ASTM B88.
- 2.3 JOINTS .1 Rubber gaskets, latex-free, 1.6 mm thick: to ANSI/AWWA C111.
- .2 Bolts, nuts, hex head and washers: to ASTM A307, heavy series.
 - .3 Solder: 95/5 tin copper alloy lead free.
 - .4 Push-to-connect: EPDM gasket, UL classified in accordance with ANSI/NSF 61 for potable water service.
 - .5 Teflon tape: for threaded joints.
 - .6 Grooved couplings: designed with angle bolt

pads to provide rigid joint, complete with EPDM flush seal gasket. Gasket to be classified in accordance with ANSI/NSF 61 for potable water service. Couplings to be manufactured to copper-tube dimensions. Flaring of tube or fitting ends to accommodate IPS sized couplings is not permitted.

- .7 Dielectric connections between dissimilar metals: dielectric fitting to ASTM F492, complete with thermoplastic liner.

2.4 GLOBE VALVES .1

NPS2 and under, soldered:

- .1 To MSS-SP-80, Class 125, 860 kPa, bronze body, renewable composition disc, screwed over bonnet as specified Section 23 05 23.01 - Valves - Bronze.
.2 Lockshield handles.

2.5 BALL VALVES .1

NPS2 and under:

- .1 Body and cap: cast high tensile bronze to ASTM B16 or ASTM B62.
.2 Pressure rating: Class 125,860 MPa steam.
.3 Connections: screwed ends to ANSI B1.20.1 and with hex. shoulders. Push-to-connect, Pressfit ends.
.4 Stem: tamperproof ball drive.
.5 Stem packing nut: external to body.
.6 Ball and seat: replaceable stainless steel or hard chrome, plated brass solid ball and teflon seats.
.7 Stem seal: TFE, EPDM, Nitrile, Flouroelastomer with external packing nut.
.8 Operator: removable lever handle with extension for insulated pipe.

PART 3 EXECUTION

3.1 INSTALLATION .1

Install in accordance with Canadian Plumbing Code and local authority having jurisdiction.

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- .2 Assemble piping using fittings manufactured to ANSI standards.
 - .3 Install CWS piping below and away from HWS and HWR and other hot piping so as to maintain temperature of cold water as low as possible.
 - .4 Connect to fixtures and equipment in accordance with manufacturer's written instructions unless otherwise indicated.
- 3.2 VALVES
- .1 Isolate equipment, fixtures and branches with butterfly or ball valves.
- 3.3 PRESSURE TESTS
- .1 Conform to requirements of Section 21 05 01 - Common Work Results-Mechanical.
 - .2 Coordinate testing with Departmental Representative. Slowly release water to new hot and cold water piping pressure. Slowly increase pressure to available. Check for leaks. Repair leaks, and retest to the Departmental Representative's satisfaction.
- 3.4 FLUSHING AND CLEANING
- .1 Flush entire system for 8 h. Ensure outlets flushed for 2 h. Let stand for 24 h, then draw one sample off longest run. Submit to testing laboratory for bacteriological testing to verify that system is clean to Provincial potable water guidelines. Let system flush for additional 2 h, then draw off another sample for testing.
- 3.5 DISINFECTION
- .1 Flush out, disinfect and rinse system to requirements of authority having jurisdiction and approval of Departmental Representative.
 - .2 Upon completion, provide laboratory test reports on water quality to Departmental Representative.
- 3.6 START-UP
- .1 Timing: Start up after:
 - .1 Pressure tests have been completed.
 - .2 Disinfection procedures have been completed.
 - .3 Check control, limit, safety devices for normal and safe operation.

.4 Rectify start-up deficiencies.

PART 1 GENERAL

- 1.1 SUMMARY .1 Section includes:
- .1 The installation of drainage waste and vent piping - corrosion resistant.
- 1.2 RELATED SECTIONS
- .1 Section 01 33 00 - Submittals Procedures
 - .2 Section 01 35 28 - Health and Safety Requirements
 - .3 Section 01 74 21 - Construction/Demolition Waste Management and Disposal
 - .4 Section 01 78 00 - Closeout Submittals
 - .5 02 41 16.01 - Structure Demolition - Short Form
 - .6 08 82 00.02 - Asbestos Abatement - Intermediate Precautions
- 1.3 REFERENCES
- .1 American Iron and Steel Institute (AISI)
 - .1 AISI 316L Stainless Steel.
 - .2 American Society for Testing and Materials (ASTM)
 - .1 ASTM B117, Standard Practice for Operating Salt Spray (FOG) Apparatus.
 - .2 ASTM D635, Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
 - .3 ASTM D2843, Standard Test Method for Density of Smoke from the Burning or Decompositions of Plastics.
 - .4 ASTM3222, Standard Specification for Unmodified Poly (Vinylidene Fluoride) (PVDF) Molding Extrusion and Coating Materials.
 - .5 ASTM D4101, Standard Specification for Polypropylene Injection and Extrusion Materials.
 - .6 ASTM E-84, Standard Test for Surface Burning Characteristics of Building Materials.

- .7 ASTM F1412, Standard Specification for Polyolefin Pipe and Fittings for Corrosive Waste Drainage Systems.
- .8 ASTM F1673, Standard Specification for Polyvinylidene Fluoride (PVDF) Corrosion Waste Drainage System.
- .3 Canadian Standards Association (CSA)
 - .1 CSA-B181.3, Polyolefin Laboratory Drainage System.
- .4 Underwriters Laboratories (UL):
 - .1 UL 94, Test for Flammability of Plastic Materials for Parts in Devices and Appliances.
 - .2 UL 723, Test for Surface Burning Characteristics of Building Materials.
- 1.4 DELIVERY STORAGE AND DISPOSAL
 - .1 Waste Management and Disposal:
 - .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .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.

PART 2 PRODUCTS

- 2.1 CORROSION RESISTANT
 - .1 General:
 - .1 All corrosion resistant piping, as indicated on drawings, shall discharge into a non-corrosive, acid-resistant waste system. All drainage and vent piping in this system to be constructed of corrosion-resistant materials described herein.
 - .2 All drains of this system to be collected and discharged into the existing glass chemical piping and dilution tank system.
 - .2 Above floor piping except in horizontal service spaces i.e. plenums):

- .1 All drainage pipe run above ground including traps, waste and branch vents to be Schedule 40 blue-line polypropylene drainage pipe. The system to include all straight lengths, fittings and traps, couplings and hanger supports as well as adapters to connect to the tail pieces of sinks.
- .2 All piping to be installed free of strain. Horizontal runs to be supported by hangers spaced at 1.2 m centres. Vertical risers to be supported at floor by riser clamps to prevent lateral and downward movement.
- .3 All corrosion resistant drainage piping to be joined utilizing compression joints for piping up to and include NPS 2 and mechanical joints for piping NPS 3 and above. Joints to be fabricated from material similar to that utilized in pipe. The outer band of mechanical joints to be 300 series stainless steel, with bolt, nuts and washers plated to meet 100 hour salt spray test as per ASTM B117.
- .4 All flame retardant polypropylene (polypropylene) piping wall and floor penetrations through fire separations to be provided with ULC (Underwriters Listed for Canada) rated fire stop assemblies to provide a minimum 1 hour fire stop.
- .5 Fill openings between wall and/or floor and piping at penetrations through fire separations, with annular space greater than 6 mm with high density rock wool insulation. Provide sufficient void space to seal with fire stop sealant.
- .6 Provide fire stop sealant between wall and/or floor and pipe at penetrations through fire separations with annular space less than 6 mm.
- .7 Provide fire stop collars at either side of fire separation wall penetrations and one side only for fire separation floor penetrations. Secure collars in place with fastening hooks secured with either toggle bolts (gyproc) or anchors (concrete).
- .8 Supply and install 18 gauge metal pan enclosure around pipe openings in

concrete floors on metal deck.

- .3 Above floor piping in horizontal service spaces (i.e. plenums):
 - .1 All drainage pipe run above ground in horizontal service spaces including traps, waste and branch vents to be Schedule 40, PVDF polyvinylidene fluoride. The system to include all straight lengths, fittings and traps, couplings and hanger supports.
 - .2 All piping to be installed free of strain. Horizontal pipes to be supported by hangers spaced at 1.2 m centres. Vertical risers to be supported at floor by riser clamps to prevent lateral and downward movement.
 - .3 All corrosion resistant drainage piping to be joined utilizing compression joints for piping up to and include NPS 2 and mechanical points for piping NPS 3 and above. Joints to be fabricated from material similar to that utilized in pipe. The outer band of mechanical joints to be 300 series stainless steel, with bolt, nuts and washers plated to meet 100 hour salt spray test as per ASTM B117.
 - .4 All PVDF corrosion resistant pipe shall meet 25 flame spread, 50 smoke developed and be UL rated 94-V-0.
 - .5 All PVDF piping wall and floor penetrations to be provided with ULC (Underwriters Laboratories for Canada) rated fire stop assemblies to provide a minimum 1 hour fire stop.
 - .6 Fill openings between wall and/or floor and piping at penetrations through fire separations with annular space greater than 6 mm with high density rock wool insulation. Provide sufficient void space to seal with fire stop sealant.
 - .7 Provide fire stop sealant between wall and/or floor and pipe at penetrations through fire separations with annular space less than 6 mm.
 - .8 Provide fire stop collars at either side of fire separation wall penetrations and one side only for fire separation floor penetrations. Secure collars in place with fastening hooks secured with either

toggle bolts (gyproc) or anchors
(concrete).

- .9 Supply and install 18 gauge metal pan enclosure around pipe openings in concrete floors on metal deck.

PART 3 EXECUTION

3.1 INSTALLATION

- .1 Install in accordance with Canadian Plumbing Code and local authority having jurisdiction and by certified journeyperson.
- .2 Install above ground piping parallel and close to walls and ceilings to conserve headroom and space, and to grade as indicated.
- .3 New acid resistant DWV for new plumbing fixtures to connect to existing glass chemical piping system.
- .4 Provide fire stopping at drainage piping wall and floor penetrations through fire separations.

PART 1 - GENERAL

1.1 GENERAL

- .1 This section covers items common to all sections of Divisions 02, 26, 27.

1.2 ELECTRICAL
WORK INCLUDED

- .1 The specification complements the drawings in describing the supply and installation of a complete electrical system. This system shall include but not necessarily be limited to the following:
- .1 A power distribution system including 120/208 volt 3 phase 4 wire panel boards,
 - .2 Small power system including wiring devices;
 - .3 Lighting system including luminaires, including wiring;
 - .4 Telephone and data system;
 - .5 Demolition of existing as noted.

1.3 CONTRACT DRAWINGS

- .1 The specification together with the drawings are intended to provide a description of a complete electrical system and therefore there shall be no omission of the items necessary or required to make a finished, workmanlike, first class installation, even though each and every item of labour and material may not be mentioned in the specification or shown on the drawings.
- .2 Items indicated on floor plans and not on riser diagrams, or vice versa, shall be considered fully covered by both.
- .3 Runs of conduit and outlet locations indicated on the drawings are diagrammatic and exact locations must be determined by this contract as the work proceeds, with due regard to the structure and the work of other trades. This contract shall make any changes dictated by structural requirements, or conflicts with other trades, without charge.
- .4 Apparent errors or omissions shall be referred to the Architect/Engineer whose decision shall be final.
- .5 Building dimensions shall not be scaled from the electrical drawings but shall be obtained from the architectural and/or structural drawings. Any discrepancy between the drawings and building

shall be questioned before proceeding with the installation.

1.4 CODES AND STANDARDS

- .1 As a minimum standard perform all work in accordance with the requirements of the Provincial Department of Labour, Canadian Electrical Code C22.1-2012 Part 1, CSA Standards CAN Z32.4 and CAN Z32.2, National Building Code, and ULC-S524-2010. These standards together with all local or municipal rules, regulations, and ordinances shall be considered as the latest approved editions at the time of tender closing. In no instance, shall the standard established in these contract documents, be reduced by any codes.
- .2 Abbreviations for electrical terms: to CSA Z85-1983.
- .3 Comply with CAN/CSA C860-11 standard for exit signs.
- .4 Comply with efficiency values as indicated in the latest version of CSA C802.2 Minimum Efficiency Values for Dry Type Transformers. Transformers to bear label of verification agency logo near nameplate.
- .5 Comply with CSA Certification Standards and Electrical Bulletins in force at the time of tender submission.

1.5 INSPECTION, PERMITS AND FEES

- .1 Obtain all inspections and permits required by all laws, ordinances, rules and regulations by the public authority having jurisdiction at the place of this building for work of this Contract, and obtain certificates of such inspections and submit same and pay all charges in connection therewith. The final certificate of inspection shall be obtained before final payment for work shall be considered due.

1.6 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- .1 Submit shop drawings, product data and samples in accordance with Division 1. Provide all shop drawings within 30 days after contract has been awarded. Failure to do so will delay progress payments.
- .2 Indicate details of construction, dimensions, capacities, weights and electrical performance characteristics of equipment or material.

-
- .3 Where applicable, include wiring, single line and schematic diagrams.
 - .4 Include wiring drawings or diagrams showing interconnection with work of other Sections.
 - .5 Keep one copy of shop drawings and product data on site, available for reference at all times.
- 1.7 OPERATION AND MAINTENANCE DATA
- .1 Provide operation and maintenance data for incorporation into Operation and Maintenance Manuals as specified in Division 1.
 - .2 Include in the operation and maintenance data:
 - .1 Details of design elements, construction features, component function, and maintenance requirements to permit effective start up, operation, maintenance, repair, modification, extension, and expansion of any portion or feature of installation.
 - .2 Technical data, product data, supplemented by bulletins, component illustrations, exploded views, technical description of items and parts lists. Advertising or sales literature not acceptable.
 - .3 Wiring and schematic diagrams and performance curves.
 - .4 Names and addresses of local suppliers for items included in maintenance manuals.
 - .5 Copy of reviewed shop drawings.
 - .6 Signed receipt for all spare parts.
 - .3 Approvals:
 - .1 Submit one draft of Operating and Maintenance Manual to Engineer for approval one month prior to estimated substantial completion date. Submission of individual data will not be accepted unless so directed by Engineer.
 - .2 Make any changes in submission as may be required and re-submit as directed.
 - .3 Failure to do so will result in delay of progress payment.
 - .4 Provide two (2) final bound copies of Operation and Maintenance Manuals to Owner and one (1) bound copy to Engineer.

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- 1.8 PROJECT RECORD DOCUMENTS
- .1 Provide Project Record Documents in accordance with Division 1.
 - .2 Submit record drawings to Architect/Engineer showing changes of wire sizes, circuit numbering and location of raceways, fittings, fixtures, panels and equipment, and their sizes, the location of which has changed or deviated during the work.
 - .3 Submit sepia or reproducible of record drawings after record drawings have been approved by the Engineer. Originals shall be made available by the Engineer for the making of sepia or reproducible of the contract drawings. All changes reflected on record drawings are to be indicated on these sepia or reproducible.
- 1.9 MAINTENANCE MATERIAL
- .1 Provide maintenance materials in accordance with Division 1.
- 1.10 CARE, OPERATION AND START-UP
- .1 Instruct operating personnel in the operation, care and maintenance of the equipment.
 - .2 Arrange and pay for services of the manufacturer's service engineer to supervise start-up and to check, adjust, balance and calibrate components.
 - .3 Provide these services for such period, and for as many visits as necessary to put equipment in operation, and ensure that operating personnel are conversant with aspects of its care and operation.
- 1.11 VOLTAGE RATINGS
- .1 Operating voltages to meet requirements of CAN3-C235.
 - .2 Motors, control and distribution equipment to operate satisfactorily at 60 Hz within normal operating limits established by the above standard. Equipment to operate in extreme operating conditions established in the above standard without damage to the equipment.
- 1.12 MATERIAL AND EQUIPMENT
- .1 Provide materials and equipment in accordance with Division 1.
 - .2 Equipment and materials to be C.S.A. certified,

and manufactured to standard quoted.

- .3 Where there is no alternative to supplying equipment which is not C.S.A. certified, obtain special approval from C.S.A.
- .4 Factory assemble control panels and component assemblies.
- .5 For the purposes of uniformity similar materials shall be of one manufacturer (i.e. all panels; all motor control equipment; all fixtures in as much as is possible, etc.).
- .6 To avoid the possibility of the work being delayed, order all materials as soon as the shop drawings are reviewed, and report at once to the Architect/Engineer any delays in the delivery of materials which would hold up the completion of the job.

1.13 GROUNDING

- .1 All equipment and exposed non-current carrying metal, conduits and parts shall be permanently and effectively *bonded to ground* to meet minimum requirements of the C.E.C. Section 10, and as indicated on the drawings and further specified. Standards set either by drawings or specifications which are above those covered by C.E.C. Section 10, shall not be reduced under any circumstances.

1.14 ELECTRIC MOTOR,
EQUIPMENT AND CONTROLS

- .1 Provide final connections to all motors, equipment, controls, etc., indicated on the drawings. These motors, equipment, controls, etc., shall include those supplied under other sections of this specification, as well as Owner supplied items. Ensure that equipment will operate properly (e.g. proper rotation) and report any instance of defective equipment to the Architect/Engineer.
- .2 Supplier and installer responsibility is indicated on electrical drawings, and in this specification and related mechanical responsibility is indicated on mechanical drawings, and in the Division 15 specifications.
- .3 All electrical equipment, which is supplied and installed by this Contract or other contracts, that requires wiring at or above 50V, shall be

wired by this Contract in accordance with terms and regulations established by this Specification.

- .4 All electrical wiring and connections below 50V related to systems specified under other sections or contracts shall be done by their contractor in accordance with terms and regulations established by this Specification.
- .5 All electrical wiring and connections below 50V related to systems specified by Division 26 shall be done by the Division 26 Contractor.

1.5 FINISHES

- .1 Shop finish metal enclosure surfaces by removal of rust and scale, cleaning, application of rust resistant primer inside and outside, and at least two coats of finish enamel.
- .2 Clean and touch up surfaces of shop-painted equipment scratched or marred during shipment or installation, to match original paint.
- .3 Clean, prime and paint exposed hangers, racks, and fastenings to prevent rusting.
- .4 Where wire guards are specified in other sections, they are to be constructed of stainless steel. Painted steel is not acceptable.

1.16 EQUIPMENT IDENTIFICATION

- .1 All switchboards, motor control centres, starters, disconnect switches, receptacles, voice/data/CATV/multimedia outlets, dry-type transformers, control transformers, pushbuttons, timeclocks, panels, control panels, etc., shall have "Lamacoid" nameplates mounted on or adjacent for identification which shall include the panel designation, voltage, phase, wires overcurrent protection, H.P., KW and amperage as applicable. The nameplates shall be affixed to metal equipment with metal type pop rivets, and to all other equipment with contact type cement applied to the entire nameplate backing. Contact type cement shall be applied (battered) to complete rear side of plate, as opposed to several points or locations on same.
- .2 Install directories on the back of each door of panel boards, neatly arranged and mounted in frame under transparent cover. Directories shall be

- typed and shall show system voltage, which outlets are on each circuit and any special information, such as sizes of fuses, etc., necessary for the proper operation and maintenance of the system.
- .3 All sectionalizing panels shall have lamacoid plates affixed adjacent to each breaker.
- .4 Size of identification shall be suitable for equipment and importance of information.
- .5 All fused disconnect switches shall have lamacoid plates identifying the equipment they feed and a separate plate indicating maximum fuse size and type.
- .6 Lettering shall be of sufficient size to be readable from normal viewing distance and the information required on the nameplates shall dictate the physical size of plates.
- .7 Nameplates shall have white lettering on black background except for equipment connected to emergency power source, which shall have white lettering on red background.
- .8 All transformers to have lamacoid plates identifying source of primary feeder and secondary equipment which it feeds plus distribution designation lettering and/or numbers.
- .9 All "D" and "E" boxes 200mm x 200mm x 100mm or larger and "C" and "T" cabinets shall have lamacoid plates affixed indicating voltages and/or systems housed within.
- .10 Nameplates:
.1 Lamicoid 3mm thick plastic engraving sheet on metal surfaces, 1.5mm where not applied to metals.

NAMEPLATE SIZES

Size 1	10mm x 50mm	1 line	5mm high letters
Size 2	13mm x 75mm	1 line	6mm high letters
Size 3	16mm x 75mm	2 lines	5mm high letters
Size 4	19mm x 91mm	1 line	10mm high letters
Size 5	38mm x 91mm	2 lines	12mm high letters
Size 6	25mm x 100mm	1 line	12mm high letters
Size 7	25mm x 100mm	2 lines	6mm high letters
Size 8	50mm x 150mm	2 lines	12mm high letters

- .11 Labels:
 - .1 Embossed plastic labels with 6.5mm high letters unless specified otherwise.
- .12 Wording on nameplates and labels to be approved by the Engineer prior to manufacture.
- .13 Allow for average of forty (40) letters per nameplate and label.
- .14 Identification to be English.

1.17 WIRING
IDENTIFICATION

- .1 Conductor insulation shall be colour coded as follows:

Phase A	-	Red
Phase B	-	Black
Phase C	-	Blue
Neutral	-	White/Grey
Ground/Bond	-	Green
Isolated Ground	-	Green w/Yellow stripe

This shall apply to all phase conductors up to and including #2AWG and all sizes of neutral, bond and ground conductors up to and including #3/0AWG.

- .2 For conductors exceeding sizes as described above, identification of wiring with approved coloured plastic tapes shall be acceptable. Attach to both ends of all conductor runs a minimum of 12" from terminations, and in all junction and/or pull boxes.
- .3 Maintain phase sequence and colour coding throughout.
- .4 Colour code shall be as per Section 26 05 21 2.1.1.
- .5 Use color coded wires in branch circuit wiring, systems wiring and communication cables.

1.18 CONDUIT, CABLE
AND JUNCTION/PULLBOX
IDENTIFICATION

- .1 Identify all conduit fittings and junction/pull boxes along with their covers with colours as described below. Boxes shall be coloured both inside and out where one colour is required, and inside only where two are required. Metal coverplates shall be completely painted where one colour is required, and shall have both colours applied diagonally where two colours are

required. All junction boxes shall be colour identified prior to installation.

<u>.2</u>	<u>System</u>	<u>Colour</u>
	120/208V Lighting & Power	Yellow
	Grounding/bond	Green
	Fire Alarm	Red
	Security	Brown
	0 to 50V	Violet
	CATV	Yellow/White
	Data only	Black/White
	Voice & Data	Blue/White
	Energy Management	Red/White

1.19 WIRING
TERMINATION

.1 Lugs, terminals, screws used for termination of wiring to be suitable for either copper or aluminum conductors as indicated.

1.20 MANUFACTURERS
AND CSA LABELS

.1 Manufacturers and CSA labels shall be visible and legible after equipment is installed.

1.21 WARNING SIGNS

.1 Provide warning signs, as specified and/or to meet the requirements of the Department of Labour Inspection Department.

.2 Use decal signs, minimum 175mm x 250mm size.

1.22 SINGLE LINE
DIAGRAMS

.1 Provide a framed single line diagram under Plexiglas as follows:

- .1 Fire Alarm System Riser;
- .2 Security System Riser;
- .3 Access Control System Riser;
- .4 Power distribution system riser;
- .5 Structured Cabling System Riser.

1.23 LOCATION
OF OUTLETS

.1 Locate outlets in accordance with Division 1.

.2 Do not install outlets back-to-back in wall; allow minimum 150mm horizontal clearance between boxes.

.3 Change location of outlets at no extra cost or credit providing distance does not exceed 3 metres and information is given before installation.

.4 Locate light switches on latch side of doors and safety switches in mechanical rooms on latch side of door where possible.

- .5 Coordinate on site the location of outlets with respect to counters, heating cabinets, etc., before work is to start.
- .6 All outlets to have brushed stainless steel coverplates regardless of the system involved, includes light switches, receptacles, communication outlets and etc.

1.24 MOUNTING HEIGHTS

- .1 Mounting heights of equipment is from finished floor to centre line of equipment unless specified or indicated otherwise.
- .2 If mounting height of equipment is not indicated verify before proceeding with installation.
- .3 Install electrical equipment at the following heights unless indicated otherwise.
 - .1 Local switches, to switch: 1200mm
 - .2 Wall receptacles:
 - .1 General: 400mm
 - .2 Above top of continuous baseboard heater: 200mm
 - .3 Above top of counters or splash back: 375mm
 - .4 In mechanical rooms: 1200mm
 - .3 Panelboards: as required by code or as indicated
 - .4 Data/Telephone outlets: 400mm
 - .5 Pay phone: 1500mm
 - .6 End of line resistor: 2100mm
 - .7 Motor starters, disconnect, etc.: 1500mm
 - .8 Luminaires: as indicated on drawings
 - .9 Fire alarm pull stations: 1200mm
 - .10 Fire alarm bells: 2100mm
 - .11 Unit emergency lighting equipment: 2100mm

1.25 PROTECTION

- .1 Protect exposed live equipment during construction for personnel safety.
- .2 Shield and mark live parts "LIVE 120 VOLTS" or with appropriate voltage in English.
- .3 Arrange for installation of temporary doors for rooms containing electrical distribution equipment. Keep these doors locked except when under direct supervision of electrician.

1.26 LOAD BALANCE

- .1 Balance all phase currents of transformers, main switchboard, distribution Panel boards, etc., and where applicable, adjust transformer taps to obtain within 2% of the rated voltage of the load

being supplied. Make adjustments and/or increase conductor size so as to limit voltage drops to 3% and make such adjustments under average load conditions in presence of Engineer.

- .2 Submit to Engineer, at completion of work, a report listing the voltage, phase and neutral currents on the switchboard, Panel boards and dry-type transformers, operating under normal load. On the report also state hour and date on which each load was measured.

1.27 CONDUIT AND
CABLE INSTALLATION

- .1 Install conduit, and sleeves, prior to pouring of concrete. Sleeves through concrete shall be constructed of sheet metal, sized for free passage of conduit, and protruding 50mm.
- .2 Install cables, conduits, and fittings to be embedded neatly and close to building structure so furring can be kept to minimum.

1.28 FIRESTOPPING
AND SMOKE SEALS

- .1 All fire stopping and smoke seals required to properly accommodate the work of this Division shall be the financial responsibility of Division 26, and carried out by trades to the applicable ULC approved system of one of the approved Manufacturers provided in this document. Trades personnel must be trained by the manufacturer and provide documentation stating same.
- .2 Refer to architectural drawings for locations of assemblies and refer to Division 1 for firestopping details and procedures.

1.29 TESTS

- .1 Conduct and pay for tests of the following:
 - .1 Power distribution system including phasing, voltage, grounding and load balancing.
 - .2 Circuits originating from branch distribution panels.
 - .3 Lighting and its controls.
 - .4 Motors and associated control equipment including sequenced operation of systems where applicable.
 - .5 Polarity check on receptacles.
 - .6 Structured cabling system.
 - .7 Fire Alarm system.
 - .8 Security System
 - .9 Emergency Lighting System
 - .10 Exit Signage

.11 Access Control System

- .2 Furnish manufacturer's certificate or letter confirming that entire installation as it pertains to each system has been installed to manufacturers' instructions.
- .3 Carry out tests in presence of Architect and/or Engineer. Notify Architect and/or Engineer seven (7) days in advance of time testing will take place.
- .4 Provide instruments, meters, equipment and personnel required to conduct tests during and at conclusion of project.
- .5 The Architect and/or Engineer reserves the right to use any piece of electrical equipment, device, or material installed under this contract for such reasonable lengths of time and at such times as he may require in order to make a complete and thorough test of the same, before the final completion and acceptance of the work.
- .6 Such tests shall not be construed as acceptance of any part of the work.
- .7 Submit test results for Architect's and/or Engineer's review.

1.30 INSULATION
RESISTANCE TESTING

- .1 Test all wiring, included in the work to ensure that there are no shorts and/or grounds are present on phase conductors for feeders or branch circuits and that insulation values are as required by the Canadian Electrical Code.
- .2 All testing of conductors to be done prior to energization of conductors with 600 volt and 1000 volt meggers as required by the Canadian Electrical Code.
- .3 Capacitive leakage testing of all phases and neutral feeder conductors at various system originating points, are to be recorded for each individual feeder with test results to be submitted to Architect and/or Engineer for approval.
- .4 Systems to be tested for capacitive leakage are as follows: 120/208V/3PH/4W.

- .5 Check resistance to ground before energizing. Ensure resistance to ground is not less than 50 megohms.
 - .6 Submit test results for Architect's and/or Engineer's review. Test results shall include time of test, feeder tested, and instrument readings.
- 1.31 COORDINATION OF PROTECTIVE DEVICES
- .1 Ensure circuit protective devices such as over-current trips, relays, fuses, are installed to values and settings as indicated.
- 1.32 CLEANING
- .1 Do final cleaning in accordance with Division 1.
 - .2 At time of final cleaning, clean lighting reflectors, lenses and other lighting surfaces that have been exposed to construction dust and dirt.
 - .3 On completion of work, remove debris resulting from work of this Division and leave the site neat and tidy. Equipment shall be checked for proper fitting and alignment, adjusted, cleaned, repainted where necessary, and left in first class condition.
 - .4 This section shall be responsible for the removal of spatters, droppings, soil, labels, and debris from finished surfaces and from surfaces to receive finishes, before the set up. Work and adjacent finished work shall be left in new condition.
 - .5 Only cleaning materials which are recommended for the purpose by both the manufacturer of the surface to be cleaned and of the cleaning material shall be used.
 - .6 Immediately before and during finishing work shall be made "broom clean". Interior areas shall be "vacuum cleaned" immediately before finish painting commences.
 - .7 Material at site cannot be burned or buried except where approved by Architect and/or Engineer. Removal shall be as often as required to avoid accumulation in order to ensure site is maintained clean.

- .8 Volatile fluid wastes cannot be disposed of in storm or sanitary sewers or in open drain courses.
- .9 Lowering of materials shall be controlled and shall not be dropped or thrown from stories above grade.

1.33 COORDINATION

- .1 Cooperate and investigate with other trades to make maximum use of the spaces. Avoid conflicts with pipes, ducts, etc. Prepare shop drawings indicating the route of main conduits and ducts for submission to the Architect and/or Engineer for approval.
- .2 Cooperate with other trades on the site and carry out the work, in such a way, as not to hinder or hold up the work of other trades.
- .3 Consult with other trades, where their respective installations conflict and re-route conduits, ducts, outlets, equipment, etc., as required, subject to the approval of the Architect and/or Engineer.
- .4 Obtain from the mechanical and other trades complete detailed wiring diagrams of equipment requiring connections and be responsible for pointing out any discrepancies or the reason why they cannot be adhered to.
- .5 Locate all light fixtures, speakers, smoke detectors, etc. using Architect's reflected ceiling plan as a guide.

1.34 SUPERVISION

- .1 Provide supervision and sufficiently qualified foreman for work of this Contract to ensure that the work proceeds in proper and efficient manner to its completion. If in the opinion of the Architect and or Engineer, such personnel are not competent to carry out the work, replace these men immediately upon written request of the Architect and/or Engineer.

1.35 COMMISSIONING OF ELECTRICAL SYSTEMS

- .1 Upon receipt of written verification from the Contractor that:
 - .1 All systems are complete and operational in all respects.
 - .2 All specified reports and documents have been submitted and approved.
 - .3 All demonstrations have been completed and

documented, the Engineer will commence a systems' commissioning period.

- .2 During this period of not more than 20 working days, the Engineer will verify the operation of all systems. The commissioning process may involve real or simulated conditions to determine the systems full operational capabilities. Copies of all specified reports and documents are to be available on site during the commissioning period.
- .3 During the commissioning process, the on-site foreman of the electrical subtrade involved in the supervision of the work plus one electrician is to be on site providing full-time assistance to the Engineer. In addition, systems' suppliers' representatives are to be available to be on site providing full-time assistance to the Engineer within 48 hours' notice to assist in the verification of their respective systems.
- .4 All necessary equipment such as meters, load banks, et cetera required to fully commission the systems are to be made available to the Engineer.
- .5 Deficiencies or discrepancies discovered during the commissioning process are to be immediately rectified. Exceptional arrangements for labour and materials will be required to correct deficiencies, which prevent the satisfactory completion of the commissioning process.

1.36 ELECTRICAL
ROOM LAYOUTS

- .1 Refer to drawings for layout of electrical rooms; these drawings indicate the suggested arrangement of equipment in the various electrical rooms, with the exception of the freestanding main switch, which shall be installed in the center of the room as shown. After ordering equipment, the Electrical Contractor should verify dimensions of equipment on shop drawings or equipment brochures and discuss the arrangement of his equipment in all electrical rooms before roughing in. If changes are to be made in the arrangement of equipment they should be noted on these drawings and submitted to the Architect and/or Engineer for approval and composite drawings should be prepared by the Contractor wherever major changes are necessary.

1.37 ACCESS DOORS

- .1 This section to supply access doors for furred ceilings or spaces for servicing equipment and accessories or for inspection of safety, operating or fire devices for installation under Contractor responsible for erecting walls or ceilings. Provide ULC rated doors in fire rated construction.
- .2 Access doors shall be flush mounted size 300 x 300mm for hand entry or 600 x 600mm for body entry as required. Doors shall open 180 degrees and have rounded safety corners, concealed hinges, screwdriver latches anchor straps and steel shall be prime coated.
- .3 Provide stainless steel access doors for tiled, marble or terrazzo surfaces or special surfaces.
- .4 Provide cam type locking devices with hand or key lock when located in public corridors and washrooms complete with master keys.
- .5 Acceptable Product: Zurn, Enpoco, Williams WB.

1.38 UTILITY SERVICES

- .1 Division 26 Contractor is financially responsible to provide complete electrical, telephone and computer systems as specified including all necessary equipment and connections to the selected power Utility and telecommunication Utility infrastructures. Payment of permits and other charges as may be levied by the Utilities shall be included in tender price.

1.39 SPRAY FIRE PROOFING

- .1 Spray fireproofing will be installed on the underside of roof deck, joists, beams and columns above the finished ceilings or on the open penthouse steel. This Contractor is to install all conduits, boxes, etc., as required prior to spray application. Any conduits, etc., installed after spray is applied will be the financial responsibility of Division 26 Contractor to have the fireproofing repaired where any damage may have occurred.

1.40 SPRINKLER PROOF HOODS

- .1 All distribution equipment with ventilated enclosures (Switchboards, MCC's, transformers, panel boards, relay panels and etc.) located in the building shall be protected from the direct spray from sprinkler heads to the satisfaction of the Inspection Authority by the use of

non-combustible hoods.

- .2 Distribution conduits entering or exiting the equipment enclosures equipped with sprinkler hoods shall be installed with rain tight EMT connectors equipped with O-rings.

PART 1 - GENERAL

1.1 REFERENCE STANDARDS .1 CSA C22.2 No. 18 - Clamps and connectors.

.2 CSA C22.2 No. 65 Wire Connectors.

1.2 RELATED WORK .1 Not applicable.

1.3 SHOP DRAWINGS AND PRODUCT DATA .1 Not applicable.

1.4 OPERATION AND MAINTENANCE DATA .1 Not applicable.

PART 2 - PRODUCTS

2.1 MATERIALS .1 All connections shall be made electrically and mechanically secure. Sizes of connectors shall be according to manufacturer's recommendations for each size and combination of wires.

.2 Joints required in branch wiring #10 AWG and smaller shall be made using fixture twist-on type connectors with current carrying parts made of copper.

.1 Standard of Acceptance: Marrette #31, #33 or #35 as required.

.3 Joints for wiring #8 AWG and larger shall be made using pressure type colour keyed compression connectors with current carrying parts made of copper using compression tools. A first layer of tape shall be compound type followed by a layer of Scotch #3 vinyl type.

.1 Standard of Acceptance: 54000 series.

.4 Bushing stud connectors are not acceptable.

.5 Clamps or connectors for armoured cable and flexible conduit as required.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Remove insulation carefully from ends of conductors and:
 - .1 Install mechanical pressure type connectors and tighten screws with appropriate compression tool recommended by manufacturer. Installation shall meet secureness tests in accordance with CSA C22.2 No. 65.
 - .2 Install fixture type connectors and tighten with pliers or appropriate tool. Finger-tightening alone is not acceptable. Replace insulating cap.
- .2 All connections shall be made electrically and mechanically secure. Sizes of connectors shall be according to manufacturer's recommendations for each wire size and combination of wires. Twist wires together before installing connectors. All stranded conductors shall be twisted together prior to connection around terminal.

PART 1 - GENERAL

1.1 REFERENCE
STANDARDS

- .1 CSA C22.2 No. 38 - Thermoset insulated Wires and Cables.
- .2 CSA C22.2 No. 51 - Armoured cables.
- .3 Wire and cable shall conform to the latest specification of the Canadian Standards Association (CSA), Electrical and Electronic Manufacturers Association of Canada (EEMAC), the Insulated Power Cable Engineers Association (IPCEA), and the American Society of Testing Materials (ASTM).

1.2 RELATED WORK

- .1 Not applicable.

1.3 SHOP DRAWINGS
AND PRODUCT DATA

- .1 Submit product data in accordance with Division 1.

1.4 OPERATION AND
MAINTENANCE DATA

- .1 Not applicable.

PART 2 - PRODUCTS

2.1 BUILDING WIRES

- .1 Conductors: Copper, soft drawn stranded, at least 98% conductivity for #12 AWG and larger. Insulation shall be chemically cross-linked thermosetting polyethylene rated 600 volts on all RW90 conductors and 1000 volts for RWU-90 for incoming service. Size as indicated on drawings and schedules. Conductor insulation shall be colour coded as follows:

Phase A	-	Red
Phase B	-	Black
Phase C	-	Blue
Neutral	-	White/Grey
Ground/Bond	-	Green
Isolated Ground	-	Green w/Yellow stripe
Isolated Power	-	as indicated hereinafter.

Where extra colours are required for three-way switches, etc., they shall be yellow.

Approved color coded tape is acceptable for color coding phase conductors #1 AWG and larger and for neutral and ground conductors #4/0 and larger.

Neutral conductors for feeders to branch panels feeding computerized equipment shall be sized at 200%.

2.2 CONTROL CABLES

- .1 600 V Type: 2 stranded copper conductors, 95% conductivity, full size AWG gauge, sizes as indicated with PVC insulation Type TW with shielding of magnetic tape wire braid over each pair of conductors and overall covering of thermoplastic jacket. Colour code shall be yellow.

2.3 ARMOURED CABLES

- .1 Conductors: insulated, copper, size as indicated.
- .2 Type: AC90.
- .3 Armour: interlocking type fabricated from aluminum strip.
- .4 Connectors: to manufacturer's recommendations.

2.4 SYSTEM WIRING

- .1 Wiring for auxiliary systems will be as indicated in specification or on drawings and/or as recommended by Manufacturer of the system.

2.5 MANUFACTURERS

- .1 Standard of Acceptance: Nexans or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION OF BUILDING WIRES

- .1 Install all building wiring as follows:
 - .1 In conduit systems in accordance with Section 26 05 34.

3.2 INSTALLATION OF CONTROL CABLES

- .1 Install control cables in EMT conduit complete with all associated steel connectors and couplings where run on surfaces of walls or open ceilings. Conduits shall be extended to within

760mm of all devices associated with the piece of equipment which they control. Final connection shall be made using liquid-tight flexible metal conduit and associated liquid-tight connectors.

- .2 EMT type conduit wall-stub c/w flush installed device box shall be located in all partitions to accommodate wiring between the device and the accessible ceiling space.
- .3 EMT connectors complete with nylon insulated throat or threaded type bushing shall be installed on end of EMT stubs where they protrude through the wall above, and within finished accessible ceilings. CSA approved EMT plastic end cap bushings may also be used.
- .4 All EMT conduit stubs shall be bonded to ground as required by CEC.
- .5 Control cable shields, if applicable, shall be bonded to ground.

3.3 INSTALLATION OF ARMoured CABLES

- .1 Group cables wherever possible.
- .2 Flexible type conduit c/w RW90 conductors sized as noted and/or flexible armoured cable AC90 (BX) complete with separate grounding conductor.
- .3 "Fixture drop" is defined as that portion of AC90 cable or flexible conduit being used to make the final connection between the accessible type junction or outlet box located in ceiling space and its respective luminaire.
- .4 Flexible type conduit c/w RW90 conductors sized as noted and/or flexible armoured cable AC90 (BX) complete with separate grounding conductor.
- .5 AC-90 cable or RW90 in flex is to be used for branch circuit wiring drops from ceiling junction boxes to light fixtures, receptacles and other equipment requiring power in the same room only unless otherwise noted on the drawings. AC 90 (BX) cable used for fixture drops with a minimum size of No. 12. Total length of any individual AC-90 cable or flex c/w RW90 not to exceed 4500mm in length unless specifically indicated otherwise.. The use of AC90 for home runs or wiring between

rooms is not permitted.

- .6 All flex c/w RW90 or AC-90 cables used for fixture drops shall be secured within 300mm of the junction box.
- .7 Where application of AC-90 cables and/or other types of pliable cables are to be used, they shall be installed parallel or perpendicular to the building lines unless otherwise noted.
- .8 Support and securing of type AC-90 cables shall not be derived from either suspended ceiling support wires or directly laying atop of the ceiling grid system.
- .9 All AC-90 feeds shall originate from the sides of outlet boxes and not from the box cover. There shall not be more than 4 drop feeds permitted from any one box regardless of its size. Where 3 or more drop feeds extend from any one box, that box shall be sized no smaller than 119mm square.

3.4 INSTALLATION - GENERAL

- .1 Where pulling wires and cables, the use of an approved lubricant only will be permitted. No wires or cables shall be pulled in conduits until such conduits are free from moisture and in no case shall wires be pulled until approval of the Architect and/or Engineer is obtained.
- .2 All stranded conductors prior to terminating under device bolts such as circuit breakers, light switches, receptacles, etc., to be twisted together to form a single conductor to ensure a reliable mechanical connection.
- .3 All branch circuits are to utilize conduit pathways for home runs to each room or area, including rooms in which the panel is located. Where the branch circuit has multiple splices and/or drop offs to multiple rooms, the use of AC90 for the drop off is permitted, however, the home run conduit shall be continued until the final room destination splice or drop off is reached.
- .4 "Labelling" of all branch circuit wiring including phase conductors, neutrals, grounding and/or bonding conductors to be done on both ends of all circuit wires plus in any junction and/or

pull boxes located in between using "Panduit" write-on, self-laminating labels Nos. PDL-1 and PDL-2 as required.

- .5 The following wiring methods are designed to enhance the ability to perform capacitive leakage tests:
 - .1 All circuit conductors are to be individually tie wrapped to their corresponding labelled neutral conductor in all panelboards, pullboxes and junction boxes. Enough slack conductor length should be left to enable the ability to clamp the ground detector around the individually tie-wrapped circuit conductor and its corresponding labelled neutral. This wiring method is to be neat and of good workmanship quality.
 - .2 The tie wrapping of the neutral with its respective phase conductors is to be made at the closest point of entry into panelboards, pullboxes and junction boxes.
 - .3 The main switchboard, CDP's, panelboards, MCC's etc, are to have their respective feeder phase and neutral conductors tie-wrapped together and enough slack conductor length to enable the ability to clamp the ground detector around each set of feeders. This wiring method is to be neat and of good workmanship quality.
 - .4 After all electrical wiring has been completed by the Electrical Sub-Contractor, he is to test the grounded electrical distribution system to ensure there are not ground shorts and capacitive leakage in the system.
 - .5 All feeders or branch circuits which do not have neutral conductors are to have their respective phase conductors tie-wrapped together in accordance to the methods described previously.
 - .6 Run all circuits so that the voltage drop in no case exceeds 3% of the line volts. The neutral wire, wherever it is run, shall be continuous with no fuses, switches, or breaks of any kind.
 - .7 For 15 amp, 120 volt circuits the following table shall be used to determine the minimum conductor sizes required to compensate for voltage drop. In no case does this table

allow a reduction in conductor size from that shown on the drawings or as specified elsewhere in the specifications.

- .8 Find below the branch circuit maximum lengths (120 volt one way length from panelboard to load including vertical drops. Voltage drop shall not exceed 3% in any instance.

- .1 From 0.3m to 24m #12 Wire
- .2 From 24m to 37m #10 Wire
- .3 From 37m to 55m #8 Wire

- .9 Increased wire sizes where required shall not be decreased in size in any portion of length of run between panelboard and the wiring device itself.

- .10 All wiring shall be color coded as per Code requirements and/or as specified herein.

PART 1 - GENERAL

- 1.1 REFERENCE STANDARDS .1 Not Applicable.
- 1.2 RELATED WORK .1 Common Work Results Electrical: Section 26 05 00
- 1.3 SHOP DRAWINGS AND PRODUCT DATA .1 Submit shop drawings and product data in accordance with Division 1.
- 1.4 OPERATION AND MAINTENANCE DATA .1 Not applicable.

PART 2 - PRODUCTS

- 2.1 SUPPORT DEVICES .1 U shape, size 41mm x 41mm, 2.5mm thick, surface mounted or suspended as required.
- .2 Supply and install all necessary inserts, rods, channels, brackets, etc., to form a support system capable of carrying at least twice the weight of the equipment supported.
- .3 In concrete, use cast-in threaded inserts wherever possible. Should additional inserts be required use a "red head" type of insert capable of carrying at least 45 kgs.
- .4 All hanger rods shall be 10mm diameter continuous threaded rod cut to required lengths. Cut off excess to within 13mm of bottom of channel.
- .5 All conduits not installed on Unistrut or approved equal type support channels to be supported as follows:
.1 13mm up to and including 35mm conduits - one hole steel straps.
.2 41mm and larger sizes - two hole steel straps.
- .6 All suspended conduit runs containing horizontal or vertical elbows shall have one additional support rod installed at not more than 300mm from midpoint of all 90 degree bends.

- .7 Beam clamps to secure conduit to exposed steel work.
- .8 In no case will the use of tye-wraps for supporting purposes be acceptable unless explicitly approved for the purpose, such as for securing wiring in-place.
- .8 All trays, wireways, and multiple conduits, shall be supported by a steel channel support system with all components, hangers, wall supports, cable clamps, etc., specifically manufactured and approved for their application.
- .9 Fastening devices for cabinets, boxes, supports, etc., shall be nut and bolt, ramset, expansion shields, wedge anchors, or toggle bolts, size and number to suit the application or as detailed on the drawings. Toggle bolts shall not be used in gypsum wallboard construction.
- .10 Fastening devices for outlet boxes shall be nut and bolt, ramset, expansion shields, wedge anchors or caddy clips, size and number to suit the application or as detailed on the drawings.
- .11 Suspended outlet, pull and junction boxes shall be supported with minimum 10mm threaded rod, nuts and flat washers. Threaded rods shall be secured to boxes with one flat washer and nut installed on both sides of box. Threaded rods shall be installed as follows:
 - .1 One rod required for all types of boxes sized 150mmx150mm and smaller;
 - .2 Two rods required for all types of boxes sized larger than 150mmx150mm up to and including 300mmx300mm;
 - .3 Minimum of four rods required for all boxes larger than 300mmx300mm.

2.2 MANUFACTURERS

- .1 Standard of Acceptance: Burndy.
- .2 Other approved manufacturers: Erico, Electrovert, Pursley, Unistrut.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Secure equipment to hollow or solid masonry tile and plaster surfaces with lead anchors.
- .2 Secure equipment to poured concrete with expandable inserts.
- .3 Secure equipment to hollow masonry wall, or suspended ceilings with toggle bolts.
- .4 Secure surface mounted equipment with twist clip fasteners to inverted T bar ceilings. Ensure that T-bars are adequately supported to carry weight of equipment specified before installation.
- .5 Support equipment, conduit or cables using clips, spring loaded bolts, cable clamps designed as accessories to basic channel members.
- .6 Suspended support systems.
 - .1 Support individual cable or conduit runs with 10mm dia threaded rods and spring clips.
 - .2 Support 2 or more cables or conduits on channels supported by 10mm dia threaded rod hangers where direct fastening to building construction is impractical.
- .7 For surface mounting of two or more conduits use channels at 1.5m on center spacing.
- .8 Provide metal brackets, frames, hangers, clamps and related types of support structures where indicated or as required to support conduit and cable runs.
- .9 Ensure adequate support for raceways and cables dropped vertically to equipment where there is no wall support.
- .10 Do not use wire lashing or perforated strap to support or secure raceways or cables.
- .11 Do not use supports or equipment installed for other trades for conduit or cable support except with permission of other trade and approval of Engineer.

- .12 Install fastenings and supports as required for each type of equipment cables and conduits, and in accordance with manufacturer's installation recommendations.
- .13 Coordinate the location of any insert to miss concrete reinforcement and obtain approval of Architect and/or Engineer prior to installing.
- .14 Secure all equipment in a manner so as not to distort or cause undue stress on any components.
- .15 Support of any equipment shall not rely on the strength of plaster or gypsum board construction.

PART 1 - GENERAL

- 1.1 REFERENCE STANDARDS .1 CSA C22.2 No. 18 - Outlet boxes, conduit boxes and fittings.
- 1.2 RELATED WORK .1 Not applicable.
- 1.3 SHOP DRAWINGS AND PRODUCT DATA .1 Not applicable.
- 1.4 OPERATION AND MAINTENANCE DATA .1 Not applicable.

PART 2 - PRODUCTS

- 2.1 OUTLET AND CONDUIT BOXES - GENERAL
- .1 Size boxes in accordance with Canadian Electrical Code, Part 1.
- .2 100mm square or larger outlet boxes as required for special devices.
- .3 Gang boxes where wiring devices are grouped.
- .4 Blank cover plates for boxes without wiring devices.
- .5 Combination boxes with CSA approved barriers where outlets for more than one system are grouped.
- .6 Outlet boxes for concealed use in frame construction shall be sectional, galvanized, pressed steel; these shall be restricted for use with flexible conduit AC-90 cable (where indicated) or other pliable type cable. The installation of any type of rigid type conduit in sectional boxes is prohibited. Where wire fill dictates larger boxes for outlets, use suitably sized square boxes with raised, square, welded tile ring style extensions. Tile rings shall not be used in surface mounted installations. Plaster type rings are not acceptable.

- .7 All outlet boxes connected to AC90 cabling shall be specifically designed for the purpose. Dual rated boxes are not acceptable.
- .8 Where multiple flush boxes are installed grouped together in metal drywall partitions; they shall be supported between the studs with a box mounting bracket (Caddy RBS or SGB series).

2.2 SHEET STEEL
OUTLET BOXES

- .1 Electro-galvanized steel single and multi-gang flush device boxes for flush installation, minimum size 75 x 50 x 63mm or as indicated with a minimum volume of 262,192 cu. Mm (similar to Iberville # BC-3104-LSSAX). 100mm (4 inch) square outlet boxes when more than one conduit enters one side, with extension and tile rings (square, welded type) as required. For use in masonry construction, style MB (S or D) shall be used.
- .2 100 mm square or octagonal outlet boxes for lighting fixtures.
- .3 100mm square outlet boxes with extension and plaster rings for flush mounting special devices in finished plaster or tile walls.

2.3 MASONRY BOXES

- .1 Electro-galvanized steel masonry boxes single and multi-gang for devices flush mounted in exposed block walls and where indicated.
- .2 Provide a 2-gang deep masonry outlet box for all multimedia outlets, c/w stainless steel cover plates. Minimum dimensions are as follows: 95mm X 96mm X89mm deep. Install Caddy RBS Type mounting bracket.

2.4 CONCRETE BOXES

- .1 Electro-galvanized sheet steel concrete boxes for flush mounting in concrete with matching extension and plaster rings as required.
- .2 Where wire fill dictates larger boxes than single gang outlets, use suitable sized square boxes, with raised "tile ring" style extension.

2.5 CONDUIT BOXES

- .1 Cast FS Aluminum boxes with factory-threaded hubs and mounting feet for surface wiring of switches and receptacles.
- .2 Metal type "FS" device plates to be used on all type "FS" boxes unless noted otherwise.

2.6 RIGID
CONDUIT BOXES

- .1 Cast FS or FD ferrous rigid conduit boxes with factory-threaded hubs and mounting feet for surface wiring where rigid conduit other than "EMT" is used.

2.7 MULTI-OUTLET
BOXES

- .1 Electro-galvanized steel barrier pre-ganged multi-outlet boxes for devices with different sources of voltage in the same box.
- .2 The barrier of sheet steel shall not be less than (No. 16 MSG) thick used to divide the space into separate compartments for the conductors of each system. The barrier shall be fastened rigidly to the box.

2.8 FITTINGS -
GENERAL

- .1 Bushing and connectors with nylon insulated throats.
- .2 Knock-out fillers to prevent entry of foreign materials.
- .3 Conduit outlet bodies for conduit up to 32mm and pull boxes for larger conduits.
- .4 Double locknuts and insulated bushings on sheet metal boxes.

2.9 CONDUIT
SUPPORTS

- .1 In steel stud framing construction provide for boxes a metal stud clip (Caddy MSF) and a far side support (Caddy 766) or a separate quick mount support (Caddy "H" Series).
- .2 Use adjustable screws gun brackets (caddy "TS" series) where box requires mounting between steel studs.
- .3 Other support systems will be accepted only after review by Engineer.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Support boxes independently of connecting conduits.
- .2 Fill boxes with paper, sponges or foam or similar approved material to prevent entry of construction material. Remove filling material at completion of project.
- .3 For flush installations mount outlets flush with finished wall using plaster rings to permit wall finish to come within 65mm of opening.
- .4 Provide correct size of openings in boxes for conduit and armoured cable connections. Reducing washers not allowed.
- .5 At each local switch, receptacle, ceiling or wall fixture, continuous row of fixtures, or system unit (i.e. fire alarm, T.V., etc.) provide and install a standard or twin filler or barrier pressed steel outlet box, unless specifically noted otherwise. All outlet boxes shall be fabricated of galvanized sheet steel and set flush with finished surfaces. They shall be rigidly and securely set.
- .6 All flexible conduit fixture feeds shall originate from the side of the outlet box and not from the box cover, with the exception of the modular furniture connections, which shall be permitted to exit from the cover.
- .7 In locating outlets, take care to allow for radiation, pipes, ducts, etc., and for the variation in arrangement and thickness of finishes, etc. Failure to comply with this will not relieve Electrical Contractor from the cost of necessary alterations.
- .8 Allow for the relocation of an outlet up to a dimension of 3m from that indicated on drawings, provided notice is given before roughing-in has been completed.

- .9 Install floor boxes in concrete formwork, prior to concrete pour, securely set to ensure finished collar is flush with the surface of the specified finish flooring.

PART 1 - GENERAL

1.1 REFERENCE
STANDARDS

- .1 Canadian Standards Association (CSA)
 - .1 CAN/CSA C22.2 No. 18, Outlet Boxes, Conduit Boxes, and Fittings and Associated Hardware.
 - .2 CSA C22.2 No. 45, Rigid Metal Conduit.
 - .3 CSA C22.2 No. 56, Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit.
 - .4 CSA C22.2 No. 83, Electrical Metallic Tubing.
 - .5 CSA C22.2 No. 211, Rigid PVC (Unplasticized) Conduit.
 - .6 CAN/CSA C22.2 No 227, Flexible Nonmetallic Tubing.

1.2 WASTE MANAGE-
MENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with local requirements.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Ensure emptied containers are sealed and stored safely for disposal away from children.
- .4 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

PART 2 - PRODUCTS

2.1 CONDUITS

- .1 Thin wall type electrical metallic tubing "EMT" with steel set screw couplings, galvanized, size as indicated.

2.2 EXPANSION
FITTINGS FOR
RIGID CONDUITS

- .1 Weatherproof expansion fittings with internal bonding assembly suitable for 100 mm linear expansion.
- .2 Watertight expansion fittings with integral bonding jumper suitable for linear expansion and 19 mm deflection in all directions.
- .3 Weatherproof expansion fittings for linear expansion at entry to panel.

2.3 FISHCORD

- .1 6.5 mm standard nylon pull rope with tensile strength of 5 kN.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.
- .2 Conceal conduits except in mechanical and electrical service rooms and in unfinished areas.
- .3 Use epoxy coated conduit in underground or in corrosive areas.
- .4 Use electrical metallic tubing (EMT) except in cast concrete and above 2.4 m not subject to mechanical injury.
- .5 Use rain-tight connectors and couplings where vertical portion of EMT conduit runs terminate into the top of electrical equipment incorporating drip shields or hoods.
- .6 Use rigid PVC conduit underground and in corrosive areas. Thin-wall (DB2) rigid PVC shall be permitted only where encased in concrete.
- .7 Use flexible metal conduit for connection to recessed incandescent fixtures without a prewired outlet box, connection to surface or recessed fluorescent fixtures and work in movable metal partitions.
- .8 Use liquid tight flexible metal conduit (minimum 3/8" internal diameter) for connection to motors or vibrating equipment in all locations, including controls and related devices
- .9 Use explosion proof flexible connection for connection to explosion proof motors.
- .10 Install conduit sealing fittings in hazardous areas. Fill with compound.
- .11 Minimum conduit size for lighting and power circuits: 19 mm.

- .12 Install EMT conduit from branch circuit panel to outlet boxes located in sub floor.
 - .13 Bend conduit cold. Replace conduit if kinked or flattened more than 1/10th of its original diameter.
 - .14 Mechanically bend steel conduit over 19 mm diameter.
 - .15 Field threads on rigid conduit must be of sufficient length to draw conduits up tight.
 - .16 Install fish cord in empty conduits.
 - .17 Run 2 - 25 mm spare conduits up to ceiling space and 2 - 25 mm spare conduits down to ceiling space from each flush panel. Terminate these conduits in 152 x 152 x 102 mm junction boxes in ceiling space or in the case of an exposed concrete slab, terminate each conduit in surface type box.
 - .18 Remove and replace blocked conduit sections. Do not use liquids to clean out conduits.
 - .19 Dry conduits out before installing wire.
 - .20 Use electrical metallic tubing (EMT) for the following:
 - .1 Communication outlets between the device box and accessible ceiling space in all wall and partitions;
 - .2 All Fire alarm system wiring;
 - .3 All security system wiring;
 - .4 All wiring within electrical rooms and mechanical rooms;
 - .5 All panel feeders;
 - .6 Structured wiring for system copper backbone cable;
 - .7 All fiber;
 - .8 Home runs to panel boards from all branch circuit wiring;
 - .9 Where noted elsewhere.
- 3.2 SURFACE
CONDUITS
- .1 Run parallel or perpendicular to building lines.
 - .2 Locate conduits behind infrared or gas fired heaters with minimum 1.5 m clearance.

- .3 Run conduits in flanged portion of structural steel.
- .4 Group conduits wherever possible on surface channels.
- .5 Do not pass conduits through structural members except as indicated.
- .6 Do not locate conduits less than 75 mm parallel to steam or hot water lines with minimum of 25 mm at crossovers.

3.3 CONCEALED
CONDUITS

- .1 Run parallel or perpendicular to building lines.
- .2 Do not install horizontal runs in masonry walls.
- .3 Do not install conduits in terrazzo or concrete toppings.

3.4 CONDUITS IN
CAST-IN-PLACE
CONCRETE

- .1 Locate to suit reinforcing steel. Install in centre one third of slab.
- .2 Protect conduits from damage where they stub out of concrete.
- .3 Install sleeves where conduits pass through slab or wall.
- .4 Provide oversized sleeve for conduits passing through waterproof membrane, before membrane is installed. Use cold mastic between sleeve and conduit.
- .5 Do not place conduits in slabs in which slab thickness is less than 4 times conduit diameter.
- .6 Encase conduits completely in concrete with minimum 25 mm concrete cover.
- .7 Organize conduits in slab to minimize cross-overs.

3.5 CONDUITS IN
CAST-IN-PLACE
SLABS ON GRADE

- .1 Run conduits 25 mm and larger below slab and encased in 75 mm concrete envelope. Provide 50 mm of sand over concrete envelope below floor slab.

- .2 Transitions from rigid PVC conduit to rigid steel threaded conduit shall take place below floor slab.
- .3 Transitions from rigid steel threaded conduit to EMT conduit shall take place above concrete floor slab.

3.6 CONDUITS
UNDERGROUND

- .1 Slope conduits to provide drainage.
- .2 Waterproof joints (PVC accepted) with heavy coat of bituminous paint.

PART 1 - GENERAL

- 1.1 REFERENCE STANDARDS
- .1 CSA C22.2 No. 111 - General Use Switches.
 - .2 CSA C22.2 No. 42 - General Use Receptacles, Attachment Plugs and Similar Wiring Devices.

- 1.2 RELATED WORK
- .1 Not applicable.

- 1.3 SHOP DRAWINGS AND PRODUCT DATA
- .1 Submit shop drawings and product data in accordance with Division 1.

- 1.4 OPERATION AND MAINTENANCE DATA
- .1 Not applicable.

PART 2 - PRODUCTS

- 2.1 SWITCHES
- .1 Switches as specified on drawings.
 - .2 All switches shall be from one manufacturer throughout, specification grade, ivory in colour.

- 2.2 RECEPTACLES
- .1 Unless specified otherwise, all receptacles are duplex type.
 - .2 All receptacles shall be from one manufacturer throughout, CSA Type, commercial specification grade and suitable for back wiring of #10AWG conductors. Complete with ivory coloured nylon face.
 - .3 5-15R receptacles: Hubbell BR15WH or approved equal by Leviton (BR15-W), Cooper (BR15W).
 - .4 5-20R receptacles: Hubbell BR20WH or approved equal by Leviton (BR20-W), Cooper (BR20W).

- 2.3 EXTERIOR RECEPTACLES
- .1 Not Applicable.

- 2.4 COVERPLATES
- .1 Stainless steel, vertically brushed, 1mm thick for wiring devices mounted in flush mount boxes. Hubbell SS8 or approved equal by Leviton, Cooper.

- .2 Cover plates from one manufacturer throughout project and required for all devices.
- .3 Sheet steel utility box cover for wiring devices installed in surface-mounted utility boxes.
- .4 Cast cover plates for wiring devices mounted in surface-mounted outlet boxes.
- .5 Weatherproof cover plates *shall be heavy cast aluminium 'WHILE IN USE', lockable, complete with enclosure keys.*

2.5 INDUSTRIAL
DUTY CABLE REEL

- .1 Not Applicable.

2.6 MANUFACTURERS

- .1 Standard of Acceptance: Hubbell, Leviton, Cooper.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Switches:
 - .1 Mount toggle switches at height specified in Section 26 05 00 or as indicated.
 - .2 All switches and their wall plates shall be installed plumb, with switch handle in the "up" position when switch is closed.
 - .3 Group switches under one wall plate in gang type box where more than one switch is shown at one location and when more than three are grouped.
 - .4 Where light switches, thermostats, receptacles, etc., are located in close proximity with one another, they are to be located on the same vertical centerline at their respective heights.
- .2 Receptacles:
 - .1 Mount receptacles at height specified in Section 26 05 00 or as indicated. 120V 15A receptacle shall have their U-ground connection oriented to the upper or top side. Horizontally mounted 120V receptacles shall be installed with their neutral termination bolts located on the top side.
 - .2 Install a green insulated ground conductor, between the grounding terminal of the

- receptacle and the grounding screw and stud of the outlet box. Minimum size of ground and/or bonding cables are to be #12 AWG.
- .3 Group receptacles under one wall plate in gang type box, where more than one outlet is shown at one location, except if on separate circuits. The use of sectional boxes whether single or multi-ganged shall be restricted for use with flexible conduits, cables or other types of pliable cables.
 - .4 Two or more receptacles in same location but on different circuits shall be grouped under one wall plate but in separate boxes wherever possible. If not possible, they shall be kept separate but in close proximity to each other.
 - .5 Receptacles above counters shall be installed above the splashback to a height as indicated on the drawings and coordinated on the site.
 - .6 Receptacles installed on raceways to be fitted with raceway cut outs and fittings.
 - .7 "Pig-tail" type leads shall be installed on conductors in all device or outlet boxes where feeding through to other receptacles. "Daisy-chaining" of receptacles is not acceptable. Provide separate pig-tail conductor leads for final termination to each receptacle for phase, neutral and bond conductors.
- .3 Coverplates:
- .1 Coverplates to be installed plumb and have stainless steel screws.
 - .2 Install suitable common cover plates where wiring devices are grouped.
 - .3 Do not use cover plates meant for flush outlet boxes on surface-mounted boxes.

PART 1 - GENERAL

1.1 REFERENCE
STANDARDS

- .1 CSA C22.2 No. 9-1968 - General Requirements for Luminaires.
- .2 CSA C22.2 No. 43-1965 - Socket screw-shell lampholders.
- .3 CSA C22.2 No. 74 - Discharge lampholders.
- .4 CSA C22.2 No. 84 - Incandescent lamps.
- .5 CSA C22.2 No. 84-1974 - Tungsten halogen lamps.
- .6 ANSI C78 series - Fluorescent lamps.
- .7 CSA C22.2 No. 74 - Ballasts. Equipment for use with Electric Discharge Lamps.
- .8 CSA C22.2 No. 8 - Radio interference suppressor. Electromagnetic Interference (EMI) Fitters.
- .9 CSA C22.2 No. 250.13-12 - Light emitting diode (LED) equipment for lighting applications.

1.2 RELATED WORK

- .1 Common Work Results Electrical: Section 26 05 00

1.3 SHOP DRAWINGS
AND PRODUCT DATA

- .1 Submit shop drawings and product data in accordance with Division 1.
- .2 Submit complete photometric data prepared by independent testing laboratory for luminaries where specified or requested for approval by Engineer.
- .3 Submit shop drawings on all lamps, dimming & electronic ballasts.

1.4 OPERATION AND
MAINTENANCE DATA

- .1 Not applicable.

1.5 GUARANTEE

- .1 Replace:
 - .1 Incandescent burning out within 3 months of takeover.
 - .2 Fluorescent and HID lamps burning out within 12 months of takeover.
 - .3 Ballasts that fail or exceed their original noise level rating within 12 months of takeover.
 - .4 LED drivers that fail within 12 months of takeover.

PART 2 - PRODUCTS

2.1 LUMINAIRE DETAILS

- .1 Provide fixtures as indicated in Paragraph 2.3 below and as shown on drawings.
- .2 Provide supporting devices, surface mounted junction boxes and outlet boxes where required.
- .3 Stamped steel Laminar bodies not to be less than 1 mm thick cold rolled steel. Reflective steel plates of minimum 0.8 mm thick metal.
- .4 Lenses or diffusers shall be of glass or acrylic material, as indicated.
- .5 Include finishes to Section 26 05 00 and as indicated.
- .6 Provide gasketing, stops and barriers to form light traps to prevent light leaks.

2.2 LAMPS

- .1 On completion of the project, provide a full set of best quality lamps for all lighting fixtures. Lamps shall be new and of a type suitable for the fixtures in which they are installed. Wherever possible, lamp type shall match that of ballast (e.g. lamp optimized for Programmed Start in a luminaire with Programmed Start ballast, etc.).
- .2 Generally fluorescent lamps shall be TCLP compliant to a level of 0.1mg/litre for mercury, T8, 32 or 17 watt (as indicated), initial lumen output of 2600(32W)/1300(17W), CRI of 86 minimum, 3500K and minimum 24,000 hour rated life. (Philips Alto F32T8/F17T8 or GE F32T8/F17T8/SP35/ECO)

- .3 Provide spare lamps in the quantity of 10% or 2 of each type, whichever is greater.

2.3 LUMINAIRE
MANUFACTURERS

- .1 Supply luminaires as described on the drawings.

2.4 BALLASTS AND
ACCESSORIES

- .1 Fluorescent ballasts unless otherwise indicated shall be supplied with voltages matching the supply voltage indicated in the Fixture Schedule, and output current and voltage ratings of the lamp or lamps they are designed to operate. All ballasts shall be electronic type ballasts with high power factor (99%+) and minimum 0.88 ballast factor, instant starting type, less than 20% harmonics. All ballasts shall meet the requirements of the Certified Ballast Manufacturing Association.
Standard of Acceptance: Universal.

2.5 LUMINAIRE
SUPPORTS

- .1 Provide supports for suspended fixtures as recommended by manufacturer
- .2 Additional T-Bar grid supports that may be required for light fixtures installed in, or secured to, T-Bar type ceilings, shall be identified accordingly to the applicable ceiling contractor, who in turn will be responsible for supplying and installing additional hangers as may be required.
- .3 The installation of any additional T-Bar grid ceiling support wires is the sole responsibility of the ceiling installation contractor.
- .4 Independent supporting of light fixtures in T-Bar grid ceilings utilizing materials other than tie-wires, i.e. threaded rods, metal channels, etc., are the sole responsibility of the electrical contractor.

2.6 ACCEPTABLE
MANUFACTURERS

- .1 Equivalent acceptable as specified on drawings.
- .2 Approved equals shall be submitted to engineer prior to tender closing in accordance with Division 1 to be reviewed as an equivalent to that specified.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 This work shall include the supplying and installation and connection of all lighting units and allied equipment as specified hereinafter and on the drawings as well as the receiving, storing and testing of same.
- .2 Locate fixtures as indicated on drawings.
- .3 Catalogue references numbers given for individual fixtures may not necessarily be correct but are intended as a guide when read with the description and may not agree with the type of fixture finally supplied; therefore the catalogue reference shall be verified with the description and co-ordinated with the installation conditions with particular regard to ceiling construction details, type and finish before ordering the fixtures.
- .4 Recessed fixtures shall have trim and frame details to match the ceiling suspension system and the Electrical Contractor shall co-ordinate with ceiling contractor.

3.2 WIRING

- .1 Connect fixtures to lighting circuits as indicated.
- .2 Recessed, surface and/or suspended fixtures shall not be wired in a daisy-chain manner, nor have their power sources looped between fixtures unless they are installed end-to-end.
- .3 Each luminaire shall be complete with its own separate fixture drop originating from a junction box located within the same ceiling space as the luminaire. An exception shall be made for recessed downlights, which may be wired from one fixture to another, provided they have integral junction boxes and the luminaire access opening is 150mm or greater in diameter.

3.3 LAMPS

- .1 Adjust lamp light to centre position to produce optimum beam distribution for fixtures.

3.4 RECESSED
DOWNLIGHTS

- .1 Not Applicable.

- 3.5 FIXTURE ALIGNMENT
- .1 Align fixtures mounted in continuous rows to form straight uninterrupted line.
 - .2 Align luminaries mounted individually parallel or perpendicular to building grid lines.
- 3.6 FIXTURE SUPPORTS
- .1 Provide luminaire supports required to mount fixtures as specified.
 - .2 Hang all light fixtures in such a manner that their attachment to the ceiling shall be secure in all respects.
 - .3 Fixtures shall not be hung directly from suspended gypsum board ceilings, but shall derive their support from channels independently mounted in the ceiling space.
 - .4 Generally wire hangers shall be used to adequately secure and support the fixtures; these shall be provided and installed under work of this Contract.
- 3.7 DEFECTIVE OR DAMAGED FIXTURES
- .1 Check fixtures and replace all defective lamps, ballasts and accessories on any fixtures that have been damaged or scratched during construction.
 - .2 Replace lamps that have burned out as per paragraph 1.5 of this section.
- 3.8 TESTS
- .1 Perform tests in accordance with Section 26 05 00.
- 3.9 BUILDING TAKEOVER
- .1 All fixtures shall be operable, undamaged, and as specified at the time of building takeover.
 - .2 All lamps shall be new and burning at the time of takeover. All fixtures shall be clean and like new condition, at the time of takeover.

**PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
AGRICULTURE AND AGRI-FOODS CANADA BUILDING 25
ATLANTIC COOL CROP CLIMATE RESEARCH FACILITY
MOUNT PEARL, NEWFOUNDLAND AND LABRADOR**

ASBESTOS MANAGEMENT PLAN

FINAL REPORT

Submitted to:

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1.0 INTRODUCTION

AMEC Earth and Environmental, a division of AMEC Americas Limited (AMEC) was retained by Public Works and Government Services Canada (PWGSC) on behalf of Agriculture and Agri-Foods Canada (AAFC) to conduct an asbestos containing material (ACM) Survey and develop an Asbestos Management Plan (AMP) for the Atlantic Cool Crop Climate Research Facility (Building 25) located in Mount Pearl, Newfoundland and Labrador (the "Site Building"). The Site Building is currently occupied by a functioning agricultural research facility. The AMP for the Site Building was developed based on the most stringent requirements of the following documents:

- The Newfoundland and Labrador Asbestos Abatement Regulation 111/98.
- Treasury Board of Canada Secretariat Hazardous Substances Directive-II, Section 2.9 as it relates to asbestos management.
- Public Works and Government Services Canada (PWGSC) Departmental Policy (DP:057) – *Asbestos Management*, dated March 12, 1997.

The requirements of the AMP are as follows:

- Minimize any future asbestos fibre release by controlling access to asbestos containing materials (ACMs) and prevent uncontrolled disturbance of ACMs by establishing safe work procedures for activities that may disturb ACMs in Site Building;
- Monitor the condition of ACMs. Given the changing nature of the building's environment, the condition of ACM's may change. By monitoring the condition of the material, AMP-trained facility staff can ensure that ACM's are well maintained;
- Respond quickly and effectively to changes in the condition of the ACM's and properly repair and contain any damaged ACM's that may be encountered in the future;
- Workers must be able to recognize an asbestos emergency and respond accordingly; and
- Applicable regulations must be followed until all ACMs are removed from the building.

This AMP has been developed to assist facility staff to safely perform their job function when working near ACMs. All facility staff, at a minimum, must read this AMP and be familiar with the following basic elements:

- Asbestos Containing Materials (ACM) Survey;
- Background Information on Asbestos;
- Types of Asbestos Operations;
- Roles and Responsibilities;
- Work Procedures/Workers Protection;
- Periodic Surveillance;
- Labeling;
- Training;
- Notification of cleaning staff and outside contractors who may perform work at the facility; and
- Record Keeping.

This AMP was prepared based on the results of an ACM Survey that was performed at the Site Building by AMEC in December 2006. The ACM Survey is provided in **Appendix 1**.

2.0 BACKGROUND INFORMATION ON ASBESTOS

A discussion on asbestos, the development of regulations, and the need for an AMP is provided in the following sections. This discussion is warranted in order to provide an understanding of what asbestos is, what the concerns over asbestos in the work place are, and why an AMP is required.

2.1 Asbestos Characteristics

Asbestos is a family of naturally occurring fibrous silicates from two mineralogical groups:

- Serpentine, which include chrysotile (white asbestos). These spiral fibres are pliable, curly and made up of tiny individual fibrils; and
- Amphiboles, which include amosite (brown asbestos), crocidolite (blue asbestos), and tremolite. Amosite and crocidolite fibres are straight and needle like, whereas tremolite fibres are short and stubby.

The qualities of asbestos that promoted its use in construction are as follows:

- Fire resistance;
- Tensile strength;
- Durability;
- Flexibility; and
- Resistance to heat, wear, corrosion.

Asbestos has many building applications that include:

- Effective insulator against heat, cold, electricity and noise;
- Used as sprayed insulation and fireproofing materials in the period following the Second World War until about 1973;
- Used as a thermal insulator in pipes, boilers and incandescent light reflectors;
- Structural steelwork fireproofing of high-rise buildings;
- Acoustical and decorative purposes in ceiling tiles and building walls; and
- Durability in floor tiles, wall board, roof shingles and felts, gaskets, caulking, wall and ceiling plasters.

2.2 Potential Health Hazards

Asbestos is a health hazard only if it can enter into the body through:

- Inhalation;
- Ingestion; or

- Absorption.

The primary health-related concern of the above list is asbestos inhalation. Respiratory diseases such as asbestosis (lung scarring) and cancers have been clinically linked to prolonged and heavy occupational exposure to airborne asbestos.

Health-related concerns prompted the Ontario Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario (1981) to study and report on the health effects of asbestos in buildings in the early 1980's. The following is the conclusion of the Royal Commission report (Chapter 9) with bolding added to emphasize critical points:

“The exposure of building occupants to asbestos fibres during normal building use is insignificant, whether as compared to the exposure of insulation workers in the past or as compared to the much lower exposures permitted by the Ontario workplace control limits. Studies of asbestos concentrations in building air have shown that many buildings containing asbestos insulation do not exhibit fibre levels exceeding those in the outdoor air or in buildings not insulated with asbestos. Even when a building exhibits elevated asbestos fibre levels, these are still very low compared to current workplace control limits and are orders of magnitude below the levels to which workers were exposed in the past.”

“We will conclude that it is rarely necessary to take corrective action in buildings containing asbestos insulation in order to protect the general occupants of the buildings. **On the other hand, construction, demolition, renovation, maintenance and custodial workers in asbestos containing buildings may be exposed to significant asbestos fibre levels and may, during their work, cause elevated fibre levels for nearby occupants. THE PROBLEM OF PROTECTING THESE WORKERS, AND OF PROTECTING OCCUPANTS FROM POSSIBLE FIBRE RELEASE AS A RESULT OF BUILDING WORK, IS THE REAL CHALLENGE THAT ASBESTOS INSULATION IN BUILDINGS PRESENTS.**”

2.3 Regulatory Requirements

The above conclusions resulted in the development of Occupational Health and Safety Regulations and guidelines in all Canadian provinces and territories for asbestos work. In Newfoundland, asbestos is regulated under the Newfoundland and Labrador *Asbestos Abatement Regulation* 111/98. In addition to the provincial requirements, a number of federal departmental policies and guidelines have been adopted for the protection of occupants from asbestos exposure. One of these documents is the Treasury Board of Canada Secretariat Hazardous Substances Directive – II, Section 2.9, as it relates to asbestos management. Another such policy is the Public Works and Government Services Canada Departmental Policy (DP:057) - *Asbestos Management* - respecting asbestos management in federally owned or leased building or facilities containing asbestos, March 12, 1997.

An Asbestos Management Plan is a regulatory requirement in Newfoundland, under the Newfoundland Regulation 111/98, Section 11. An active AMP is an excellent means to ensure that all of the requirements of the Newfoundland Regulation and Treasury Board of Canada

Circular TB 774012 are met, and to prevent exposure of building occupants to asbestos fibres. For an Asbestos Management Plan to be effective, it is necessary that a quantitative asbestos survey be conducted, and that a process be in place to implement the Plan.

3.0 SUMMARY OF ASBESTOS CONTAINING MATERIAL SURVEY

The Atlantic Cool Crop Research Facility (Building 25) is located on the Brookfield Road, Mount Pearl, NL. The Building has been used as an agricultural research facility since its original construction in the mid 1960s. An asbestos containing material (ACM) survey was conducted by AMEC at the Site Building in December 2006.

As part of the ACM Survey, AMEC interviewed Mr. Frank Ralph, Facility Manager, 1980 - present (the "Site Representative") to gain information related to past activities at the Site Building. According to the Site Representative, three structures were attached to Building 25 at different time periods; namely a greenhouse (late 1960s), the Provincial Lab Building (1982) and Building 39 (1996). It is noted that the aforementioned attached structures are not included as part of this asbestos Survey. Also according to the Site representative, major renovations to Building 25 have included new boilers (1991), new roof and ventilation system (1992), replacement of ductwork above all fume hoods (1996), removal of interior wall between Room Nos. 1-18 and 1-19 (2001), removal of fume hood in Room No. 1-20 and installation of stainless steel lining in two other fume hoods (2001) and painting throughout the Building (2001 - 2003).

Building 25 is a three-story building, which occupies an approximate footprint area of 760 m². The Building is primarily of concrete construction and contains offices, laboratories, freezer rooms, washrooms, library, meeting room, boiler room, wet bench area and various mechanical rooms. The exterior walls of the Building consist of concrete block, poured concrete or brick. Interior walls consist of a mix of concrete block, poured concrete or plaster (over brick). Some office walls on the basement level contain gypsum board, which was reported by the Site representative to be installed over plaster approximately 5 years ago. Ceilings are a combination of suspended (lay-in) tiles, plaster or bare concrete. Floors were observed to be a mix of vinyl tiles, terrazzo or bare concrete. It was reported by the Site Representative that the entire roof, supported by steel girders, was totally striped and replaced with a layered roof and membrane approximately 15 years ago.

A total of fifty-two (52) bulk samples of suspect ACMs were sampled and submitted to the AMEC Analytical Laboratory in Mississauga, Ontario, for analysis using a combination of dispersion staining techniques and Polarized Light Microscopy (PLM) methodology as per the National Institute of Occupational Safety and Health Method 9002.

ACMs identified as a result of the Survey are summarized in Table 1. Locations of ACMs are provided on building floor plans contained in the ACM Survey (**Appendix 1**). Photographs of identified ACMs are provided in **Appendix 6**.

Table 1 - Summary of Asbestos Containing Materials

Descriptions and Locations

Walls and Ceilings

Non-friable asbestos containing plaster. Four of nine samples of wall/ceiling plaster were found to contain ACM (2 - 5 % chrysotile). AMEC's review of the previous sampling work by Pinchin Leblanc Environmental Ltd. (PLEL) also showed that three of eight plaster samples were ACM. Plaster walls and ceilings are located in portions of all three floors of the Site Building. See ACM Survey in **Appendix 1** for locations. Some plaster walls are located behind the gypsum board. Due to the non-homogeneous nature of this material, all ceiling and wall plaster within the building should be treated as ACM. It should be noted that even though, when in good condition, the wall and ceiling plaster are considered non-friable in-situ, these plasters become friable during demolition, cutting or abrasion.

Note: Based on a review of the original construction drawing of the facility and observations made during the survey, the majority of gyproc walls in the building have plaster walls located behind them. Refer to the attached ACM survey for likely location of covered plaster walls.

Flooring

Non-friable asbestos containing vinyl floor tiles.

- All 23 x 23 sq. cm (9 inch.) floor tile sampled within the building is ACM (3 - 12% chrysotile). The 23 x 23 sq. cm floor tiles are located in the following area: SB-7 (green and white tile); B-4 (white with black tile); 1-19 (light green with white and dark green); 1-18 (light green with white); 1-6 (red with white); B-2 (light brown with dark brown and white); 1-4 (brown with dark brown); 1-7 (beige with green); and 1-5 (white with brown).
- All 30 X 30 sq. cm (12 inch.) floor tile that was sampled (3 types) is non-ACM.

Wallboard

Non-friable asbestos-containing "Transite" lined fume hoods. The "Transite" lined fume hoods have a grey, fibrous, cementitious appearance and have been painted grayish green. There are three fume hoods that are lined with "Transite" material. The "Transite" fume hoods contain 25% Chrysotile asbestos and are located in Laboratory Room Nos. 1-16, 1-17 and 1-18. It was reported that the "Transite" board for two of these fume hoods is located behind stainless steel sheeting (Room Nos. 1-16 and 1-18).

Pipe Wrap

The majority of insulating pipe wrap (4 samples) within the building is non-ACM and consists of a yellow mineral wool or brown wool-like material, with cellulose outer covering. This is the case throughout the building with two exceptions:

- Insulating pipe wrap on 300 mm dia. steam header, overhead piping (grey/white fibrous material) in the boiler room (20 % Amosite); and
- Insulating pipe wrap (corrugated paper type) on water drain in sub-basement hall (10 % chrysotile).

Pipe Elbows/Joints

Six of seven samples of insulating pipe elbows/joints were found to contain approx. 75 % chrysotile. It can be assumed that all insulating pipe elbows/joints/wrap ends within the building are ACM, with the exception of pipe elbows in Room No. B-26. An estimated total of 560 fittings (elbows and T joints) are located throughout the building. It should also be noted that ACM cement was sometimes used to seal the ends of non-ACM pipe wrap.

Hot Water Tank Insulation

Two hot water tanks in Room B-26 contain insulation comprised of 10 % chrysotile and 30 % amosite.

Other Materials

Other materials found to contain asbestos were:

- One ceiling light fixture fabric located in the basement Dark Room (SB-7) (80 % chrysotile).
- Tar paper on ductwork located in the Wet Bench Room (8 - 10 % chrysotile).

4.0 CLASSIFICATION OF ASBESTOS RELATED WORK

As the risk of exposure to asbestos fibres increases, more stringent work procedures are required for the remediation of the ACMs. Low-risk (Type I), moderate-risk (Type II) and high-risk (Type III) asbestos related work are governed by separate work procedures. Sections 4.1 to 4.3 define the types of asbestos related work as outlined in the PWGSC Departmental Policy (DP:057) and are included to provide an overview of each type of work. Section 4.4 defines a commonly used work procedure (Glove Bag) for Type II asbestos related work.

4.1 Type I or Low-Risk Asbestos Related Work

Asbestos related work classified as Type I or low-risk has minimal risk of releasing asbestos fibres. However, regulations require that precautions be adequate to protect workers from the release of asbestos fibres. Low-risk work procedures cover almost all the asbestos related work involving non-friable ACMs and some very limited activities associated with small quantities of friable ACMs including:

- Installation or removal of a non-friable ACM with a hand tool;
- Disturbance of a non-friable ACM with a power tool equipped with a HEPA dust collector;
- Removal of adhesive patches or dry wall materials where joint filling materials contain asbestos;
- Removal of square vinyl floor tiles;
- Removal or replacement of ten or less asbestos-containing compressed mineral fibre type ceiling tiles;
- Collecting samples of suspect friable ACMs; and
- Working close to friable sprayed asbestos, where the material may be affected by the work activities.

4.2 Type II or Moderate-Risk Asbestos Related Work

Type II or moderate-risk asbestos related work is described as any minor activity that may disturb or involve direct contact with small quantities of friable ACMs that may result in significant potential exposure to airborne asbestos fibres with some health risk. This asbestos related work might include:

- Removal or replacement of more than ten asbestos-containing compressed mineral fibre type ceiling tiles;
- Entry into ceiling spaces, crawl spaces, pipe tunnels, etc. where friable asbestos debris is present;
- The removal of a gales ceiling with the likelihood of a significant quantity of friable ACMs on its surface;
- Minor removal of friable ACMs (removal of not more than 1m² of surface are per work period);

- Minor disturbance of friable ACMs (i.e. to repair valves on piping, install hangers, fastening to a sprayed surface);
- Repair of asbestos mechanical insulation (no limit is imposed as to the amount of repair permitted under Type II conditions); and
- Application of tape, sealant or other covering to pipe or boiler insulation containing asbestos.

4.3 Type III or High-Risk Asbestos Related Work

Type III or high-risk asbestos related work is described, as any activity for which there is a potential for high exposure to airborne asbestos fibres with high health risk. This asbestos related work may include:

- The removal or disturbance of fibre ACMs, other than low or moderate risk asbestos related work;
- The spray application of an encapsulant or sealant to friable ACMs (i.e. encapsulating sprayed fireproofing);
- The use of power tools not equipped with HEPA filtered dust collection device on non-friable ACM;
- Disturbance of the ductwork or air handling equipment serving or passing through areas of buildings with sprayed asbestos-containing fireproofing or insulation; and
- Repair, alteration or demolition of a boiler, furnace, kiln, or similar equipment with asbestos-containing refractory.

4.4 Glove Bag Work Procedure

The removal or repair of asbestos-containing pipe insulation may be conducted using Type II (moderate-risk) procedures. Another option for the removal of asbestos-containing pipe insulation is the glove bag procedure, which is a polyethylene containment bag which fastens around the pipe insulation to be removed and is sealed onto the pipe system. The glove bags are equipped with sealed armholes and a pouch for tools inside the glove bag that allows removal of the insulation inside the glove bag. Once the asbestos-containing pipe insulation has been removed from the pipe and placed in the lower chamber of the glove bag, a small port is used to wet the inside of the glove bag and wash down the exposed pipe. The lower chamber is then re-sealed prior to removal of the glove bag.

5.0 ROLES & RESPONSIBILITIES

This section outlines the responsibilities of both the key personnel identified in the AMP and other building occupants. A Facility Asbestos Coordinator (FAC) should be established for the facility. The FAC should be someone in a senior position who is knowledgeable of the facility and on-site operations and activities, and should be one site on a full time basis (i.e. property manager or maintenance supervisor). The FAC should receive at a minimum, appropriate training in the area of asbestos management, including classification and identification of asbestos related work, from a qualified trainer.



Table 2 presents the key personnel identified in the AMP.

Table 2 - Key Personnel Identified in the Asbestos Management Plan	
Title	Name, address, phone numbers and email addresses
Facility Asbestos Coordinator	Name: Address: Telephone: Cell Phone: Fax: Email:
Property Manager	Name: Address: Telephone: Fax: Email:
Facility Manager / Project Manager	Name: Address: Telephone: Fax: Email:

The responsibility of the FAC include:

1. Coordinate the asbestos training program with the Property Manager for all personnel involved with the management and maintenance of the facility;
2. Maintain worker asbestos training records;
3. Ensure that relevant tasks and responsibilities of individuals identified in this AMP are being carried out and all documents and records are complete and maintained;
4. Coordinate with the Property Manager to engage an outside consultant or other trained and qualified personnel within Agriculture and Agri-Foods Canada (AAFC) to conduct ACM inspections every two years;
5. Receive and retain copies of Contractor Notification and Acknowledgement (CNA) forms and Asbestos Related Work Records (ARWRs) from Contractors and/or Consultants, or alternative AAFC forms, after the completion of an asbestos related project;
6. Maintain and update the AMP as needed and maintain the binder at a secure location in the facility this is accessible to all staff and outside contractors;
7. Inform the appropriate personnel and contractors (if applicable) regarding planned repair, renovation and maintenance or installation work involving ACMs to be performed in their occupied areas in writing and in advance of work to be performed;

8. Identify planned maintenance activity (Section 6.1.1) by facility staff and determine whether the planned maintenance work will disturb ACMs;
9. Ensure that recommended procedures and safety precautions provided in worker training courses and outlined in this AMP will be followed for planned maintenance work or emergencies involving ACMs;
10. Identify, report and document work related ACM emergencies to the Property Manager and Health Canada;
11. Maintain copies of Asbestos Related Work Records (ARWR) and Contractor Notification and Acknowledgement (CNA) forms, or alternative AAFC forms;
12. Handle asbestos emergencies as outlined in Section 6.3;
13. Assist the outside asbestos consultant or other trained and qualified personnel within AAFC during inspections;
14. Coordinate the labeling of ACMs identified in Section 8.0;
15. Handle questions or requests from facility staff for information regarding asbestos;
16. Prepare and distribute standard notification letters for cleaning contractors and landscaping staff; and
17. Ensure all contractors performing work under their control have completed CAN form.

The responsibilities of the **Property Manager** for the facility include:

1. Ensure facility staff receive the appropriate asbestos training and maintain training records;
2. Approve and initiate an asbestos related project; and
3. Coordinate with FAC to engage an outside consultant or other trained and qualified personnel within AAFC to conduct routine ACM inspections.

The responsibilities of the **Facility Manager / Project Manager** for the facility include;

1. Request information regarding the possible presence of asbestos in the areas of planned projects from the FAC;
2. Notify the FAC of all planned removals / repairs involving ACMs;

3. Ensure that the FAC has notified facility staff and cleaning contractors (if necessary) regarding planned Asbestos Related Work;
4. Ensure asbestos related work is overseen and conducted by qualified personnel;
5. Ensure that all contractors performing work under their control have completed a CNA form (**Appendix 2**); and
6. Submit copies of CNAs, ARWRs and asbestos consultant reports (if applicable) to the FAC upon completion of work.

Certain types of work will require the use of outside contractors and consultants and are best handled by outside contractors and / or consultants. Therefore, in these circumstances the contractor and consultant should be responsible for the following:

Asbestos Consultant:

1. Update the locations and approximate quantity of ACMs on building plans and forward the updated asbestos plans to the FAC. Updates will be completed after routine inspections (every two years) or an abatement project;
2. Classify asbestos removal or repair work, prepare scope of work or tender documents, hire asbestos contractors and coordinate asbestos related work with the Facility Manager / Project Manager or Property Manager;
3. Fill out the Asbestos Related Work Record (**Appendix 2**) upon completion of asbestos related work and submit it, along with Contractor Notification and Acknowledgement (CNA) from (**Appendix 2**), to the Facility Manager / Project Manager;
4. Provide inspection and air monitoring during asbestos abatement projects. This includes ensuring proper asbestos removal/repair work and safety procedures are followed (Type I, II, etc.) and the specified work outlined in the contract, scope of work or tender is completed; and
5. Provide a written report to the Facility Manager / Project Manager summarizing the asbestos-related work that has been completed during the abatement project and the results of air monitoring tests. The report is to include a copy of the waste manifest.

Asbestos Contractor:

1. Complete and submit to the Facility Manager / Project Manager or the Asbestos Consultant a contractor Notification and Acknowledgement (CNA) form (**Appendix 2**) prior to commencing any work;

2. Arrange the proper storage, transportation and disposal of any asbestos waste generated during asbestos related work activities;
3. Supply waste manifests upon disposal to the Asbestos Consultant; and
4. Conduct all asbestos abatement project work in accordance with applicable Federal and Provincial Regulations.

Non-Asbestos Contractor:

1. Complete and submit a Contractor Notification and Acknowledgement (CAN) form to the Facility Manager / Project Manager or FAC prior to conducting any work in areas where asbestos-containing materials have been identified; and
2. Stop or do not commence work and contact the FAC if materials are encountered or identified in the work areas that are suspected to contain asbestos.

Facility personnel including cleaning contractors and landscaping staff:

1. Contact the FAC prior to conducting any maintenance work or attaching or removing anything from interior walls/ceilings and exterior foundation walls or other surfaces; and
2. Report any damage to interior and exterior walls or other building components to the FAC.

6.0 ASBESTOS RELATED WORK PROCEDURES

It is understood that some AAFC staff are trained to conduct asbestos related work, however some of this work may also be performed by an outside consultant or contractor. Procedures for conducting asbestos related work activities, taken from excerpts of the PWGSC AMP document dated March 2000, are included in **Appendix 3**. The excerpts include details related to the following activities:

- Evaluation and Recommendation Criteria for Control of Asbestos Containing Material
 - Assessment of Condition
 - Evaluation of Accessibility
 - ACM Debris
 - Action Matrix and Definitions;
- Type 1 Work Procedures;
- Type 2 Work Procedures;
- Glove Bag Work Procedures; and
- Respirator Fitting, Inspection, Cleaning and Disinfection.

It is noted that an outside contractor/consultant or Regional Asbestos Coordinator (if designated), on behalf of the FAC and Project Manager, will classify the disturbance of asbestos materials as Type 1, 2 or 3. It is noted that details related to Type 3 work procedures are not provided in **Appendix 3**. Type 3 work procedures include all work not permitted under the Type 1 and 2 classifications and the aforementioned individual is responsible to review or direct all maintenance work under this classification. It is further noted that all type 3 asbestos work in occupied buildings requires daily inspections and air monitoring and final clearance air testing.

In order to prevent or minimize the chances of asbestos fibre releases, facility staff will not conduct any renovations or disturbances that may damage building materials containing ACMs, unless the work is performed in accordance to the procedures outlined in **Appendix 3**. Activities that may disturb asbestos containing building materials include:

- removing or sanding plaster walls / ceilings;
- drilling, sanding or cutting into “transite” panels lining the hoods located in laboratories 1-17, 1-18, and 1-19 of the building;
- removing or disturbing pipe wraps on large diameter overhead piping located in the Boiler Room and pipe insulation on water drain located in the sub-basement wall;
- using high revolution floor polishers on 23 cm sq. (9” sq. tiles) ACM floor tiles;
- removing or disturbing pipe cement elbows (exception is Room B-26);
- removing or disturbing Hot Water Tank Insulation (Room B-26); and
- removing or disturbing tar paper on ductwork.

During the survey, a number of areas were noted that will require immediate action due to the damaged or deteriorated condition of ACMs. Table 3 provides a summary of these areas.

Table 3 - Summary of Damaged or Deteriorated ACMs Requiring Immediate Action

Type of Damaged/Deteriorated ACM	Location	Recommendation
Small accumulation of dust and debris which contains trace amounts of actinolite located on the storage area floor below pipe lagging.	Room No. B-25 - Storage area located next to Hot Water Tank Room off Wet Bench area.	Until area is cleaned using a professional asbestos abatement contractor or trained and qualified personnel within AAFC, post signage to contact maintenance supervisor prior to entering the Storage Room immediately adjacent to the Hot Water Tank Room (Room B-26).
Deteriorated plaster ceiling.	Room No. 1-16 - From door entrance, left hand top corner area.	Temporarily cover areas with 6 mil polyethylene or plywood type material until area can be properly cleaned and stabilized by a professional abatement contractor or trained and qualified personnel within AAFC.
Deteriorated plaster ceiling.	Room No. B-21 (freezer room) - From door entrance, directly ahead.	Temporarily cover areas with 6 mil polyethylene or plywood type material until area can be properly cleaned and stabilized by a professional abatement contractor or trained and qualified personnel within AAFC. Note that although analysis of ceiling plaster in this room showed no asbestos was detected, this material should be treated as asbestos based on positive results of similar samples and non-homogeneous nature of material.
Deteriorated plaster wall.	Room No. SB-1(boiler room) - From door entrance, left hand far corner area. Wall height of approx. 2.0 to 5.0 m above floor.	Temporarily cover areas with 6 mil polyethylene or plywood type material until area can be properly cleaned and stabilized by a professional abatement contractor or trained and qualified personnel within AAFC.
Deteriorated plaster wall.	Room No. 1-20 - From door entrance, directly ahead on opposite wall near pencil sharpener.	Seal small area of damaged plaster with drywall joint compound until area can be properly cleaned and stabilized by a professional abatement contractor or trained and qualified personnel within AAFC. Note that although analysis of wall plaster in Room No. 1-20 showed no asbestos was detected, this material should be treated as asbestos based on positive results of similar samples and non-homogeneous nature of material.
Deteriorated 300 mm piping steam header containing amosite.	Located in ceiling area enclosed exit to the Boiler Room.	Temporarily cover over with 6 mil polyethylene or equivalent until asbestos material is removed by a professional abatement contractor or trained and qualified personnel within AAFC.

6.1 Identification of Work That May Involve Asbestos

The first step in any asbestos abatement work is to identify the potential for work to disturb ACM. The following are the three processes by which work is initiated at the building and asbestos concerns are identified.

6.1.1 Planned Maintenance

Planned maintenance involves any maintenance activity carried out on a routine basis by the building staff. The Facility Asbestos Coordinator (FAC) will review all planned maintenance and determine if the planned maintenance activity will disturb any ACMs. If it is determined that ACM will be disturbed, the FAC will contact the Property Manager, who can approve and initiate an Asbestos Related Work Project.

6.1.2 Minor Repair

Minor repairs generally refer to maintenance work that can be engaged by the facility staff without the assistance of a Facility Manager / Project Manager. Prior to the initiation of minor repairs or work by facility staff that will require a modification to the infrastructure of a building, the FAC will be contacted and determine whether the work will potentially disturb any identified ACM. If it is determined that ACM will be disturbed, the FAC contacts the Facility Manager / Project Manager, who can approve and initiate an Asbestos Related Work Project.

6.1.3 Project Work

Project work typically involves a substantial change to the infrastructure of the building. These projects are initiated and managed by the Facility Manager / Project Manager. The facility Manager / Project Manager will identify the areas affected from the floor plan and submit them to the FAC. In reviewing the floor plan and the ACM Survey presented in **Appendix 1**, the FAC will determine if the project will disturb any identified ACM. If it is determined that ACM will be disturbed, the Property Manager can approve and initiate an Asbestos Related Work Project by the Facility Manager / Project Manager.

6.2 Asbestos Project

The initiation of an asbestos project involves the Property Manager ensuring that the Facility Manager / Project Manager undertakes the work in accordance with Federal policies. The Facility Manager / Project Manager will then notify the FAC. The FAC is responsible for notifying the building staff and cleaning staff, when appropriate. The Facility Manager / Project Manager will then engage either trained and qualified AAFC staff or an outside consultant and contractor. The Project Manager will ensure that only qualified personnel will be engaged to conduct and monitor asbestos projects. The Facility Manager / Project Manager will ensure the Contractor Notification and Acknowledgement Form (CNA), or alternative AAFC form, is received and confirm that all building and cleaning staff have been notified (if appropriate) before initiating the abatement. The outside consultant will be responsible for monitoring the

abatement as per the terms of their contract. The consultant will prepare and submit the Asbestos Related Work Record (ARWR) and an asbestos abatement report directly to the Facility Manager / Project Manager, who will forward a copy to the FAC. The FAC is responsible for ensuring a copy of this information is maintained in the facilities AMP records. The Consultant is also responsible for updating the ACM location plans presented in the ACM survey in **Appendix 1** and submitting it to the FAC. The FAC is responsible to update the AMP.

6.3 Asbestos Emergency Response Procedures

In the event of an emergency, such as the partial collapse of a ceiling with asbestos-containing plaster, special procedures are generally needed to minimize the spread of fibres throughout the building. These procedures are needed whether the ACM disturbance is intentional or unintentional. Therefore, in the event of an asbestos release episode, **the following procedures, in accordance with PWGSC's Department Policy (DP:057), will be followed:**

- Clear the area of all occupants;
- Isolate the area by closing doors and/or erecting barriers to restrict airflow as well as access to the site;
- If asbestos fibres could enter the HVAC system, the system should be modified to prevent fibre entry or be shut down and sealed off;
- Post warning signs; and
- Notify the Facility Asbestos Coordinator regarding the asbestos disturbance. The Facility Asbestos Coordinator will notify the Property Manager to arrange for removal, clean-up or repair of the asbestos material by qualified personnel. This may require asbestos consultants and/or contractors to develop a strategy for the cleanup operations.

Prior to restarting the HVAC system in the area, a careful visual inspection and final asbestos clearance air monitoring will be conducted to verify satisfactory cleanup.

7.0 PERIODIC INSPECTIONS

The Property Manager will coordinate the routine ACM inspections that will be completed by an outside asbestos consultant or other trained and qualified personnel within AAFC. The inspections involve identifying and recording changes in the condition of the ACMs including damage and deterioration, as well as changes in the use and activity of spaces containing ACMs. Inspection should be conducted every two years for ACMs located at this facility. During the inspections, changes in the condition of the ACM or use of space should be documented. The Property Manager will ensure that a procedure is in place to collect and maintain all routine inspection documentation and reports. The asbestos information will be maintained in the AMP at the facility.

In addition, facility staff will be trained to recognize damage and changes in the condition of ACMs and suspect ACMs. Facility staff who observe any changes to the condition of the ACMs will notify the Facility Asbestos Coordinator immediately.

A sample checklist for the inspection of Asbestos-Containing Materials is contained in **Appendix 4.**

8.0 LABELING

The Facility Asbestos Coordinator will coordinate labeling the ACM. While not a regulatory requirement, labeling of exposed ACM that can be easily disturbed and subsequently release asbestos fibres, is considered a best management practice. Labeling should be conducted by an asbestos consultant.

Typically, a label should be placed directly on the asbestos containing material or on a highly visible wall in the room with asbestos-containing wall/ceiling plaster or wallboard and note the following:

DANGER
CONTAINS ASBESTOS
Do Not Disturb

The labels will help remind facility staff and/or outside contractors of the presence of asbestos in the material.

9.0 ASBESTOS TRAINING

Under Section 7 of Newfoundland and Labrador Regulation 111/98, an owner of a building is required to institute and maintain a training program for workers and occupants in the building who are likely to work in close proximity to and may disturb the ACMs.

A training program designed to address the specific needs of the facility staff will be developed and conducted. The training requirements will consist of instruction in:

1. The hazards of asbestos exposure;
2. Identification of suspect ACMs;
3. Roles and responsibilities; and
4. Emergency procedures.

Instruction and training will be conducted by competent personnel who are fully qualified as a result of their knowledge and experience with the requirements of the asbestos regulations. They will be familiar with performance standards established by the asbestos regulations, and knowledgeable of potential or real danger to health or safety in the work place related to asbestos issues.

Typical awareness and management training requirements will consist of instruction in:

- Introduction to asbestos in general;
- Review and identification of ACM specific to each applicable building;
- Overview of asbestos inventory and assessment reports;
- Friable and non-friable asbestos products;
- Insulation used on mechanical systems;
- Health effects - occupational and non-occupational;
- Provincial and federal asbestos guidelines and regulations;
- Classification of asbestos work;
- Asbestos management;
- Worker protection; and
- Asbestos control options.

The Property Manager will ensure procedures are in place to maintain a list of trained workers with the date and type of training. An example form for maintaining a list of trained employees is provided in **Appendix 5**. New facility staff will be informed of the presence of ACMs and briefed on the AMP before they begin work, and at the earliest possible convenience they will attend a training program.

10.0 NOTIFICATION OF CONTRACTORS

The FAC will inform cleaning contractors, landscaping staff, and outside contractors (if applicable) about the location and physical condition of the ACMs that are located in close proximity, and stress the need to avoid disturbing the material. Facility staff will be notified about the presence of ACMs at the implementation of this AMP. Cleaning and landscaping staff and outside contractors will be notified for two reasons:

1. The law requires that owners inform building occupants of any potential hazard in their vicinity; and
2. Informed persons are less likely to unknowingly disturb the material and cause dust to be released into the air.

Outside contractors will be informed about the presence of ACMs in the work location by the FAC or the Facility Manager / Project Manager prior to commencement of their work. Contractors must sign a Contractor Notification and Acknowledgement form prior to conducting any work (**Appendix 2**).

The FAC will inform cleaning contractors and landscaping staff by sending them a letter notifying them of the presence and location of ACM that is in close proximity to their work areas. The information given all contractors doing work at the facility will contain at least the following points to reflect the building conditions:



- Asbestos has been found at the Atlantic Cool Crop Climate Research Facility (Building 25) and is located in the following areas:

- Most ACMs in the Atlantic Cool Crop Climate Research Facility (Building 25) are in good condition and do not pose a risk to human health, with the following exceptions:

- Asbestos only presents a health hazard when fibres become airborne and inhaled. The mere presence of ACMs does not represent a health hazard.
- Do not disturb the ACMs. Activities that may disturb ACMs include cutting, drilling, sanding, or removing the above mentioned building materials. Contact the Facility Asbestos Coordinator to make the necessary arrangements if you wish to undertake an activity that may disturb any ACM.
- Report any evidence of disturbance or damage of ACMs to:
Name:....., Facility Asbestos Coordinator
Telephone:
- Facility staff are taking special precautions during their work to guard against disturbing ACMs.
- Report any improper action (relative to ACMs) to the Facility Asbestos Coordinator.
- All ACMs and suspect ACMs are inspected periodically and additional measures will be taken if needed to protect the health of facility staff.

The Facility Asbestos Coordinator will inform facility staff and contractors (if applicable) at least one week in advance of all planned repair, renovation, maintenance or installation work to be completed in the relevant buildings that may disturb ACMs.

11.0 RECORD KEEPING

Documentation regarding any asbestos related activities must be retained. The FAC will ensure that procedures are in place and are followed to maintain the following documentation/records.

1. Work records documenting all asbestos-related activities, including, but not limited to, repair, enclosure and removal work done onsite must be retained indefinitely;
2. Training records shall be maintained for the duration of employment plus 1 year. Copies shall be placed in worker personnel files;

3. Notification of the presence of ACMs and other asbestos related documents and correspondence with facility staff, contactors and consultants shall be maintained indefinitely;
4. Notification letters sent to cleaning contractors (or other contractors) prior to asbestos related work in areas they may be working in shall be maintained indefinitely;
5. Asbestos survey reports, updates and addenda that reflect the changing condition and quantity of ACMs will be maintained indefinitely;
6. A completed asbestos waste manifest for disposed ACMs must be maintained indefinitely; and
7. The AMP shall be maintained on-site as long as the ACMs remain in the workplace.

12.0 CLOSURE

This report presents the methodology and findings of an asbestos containing material Survey and development of an asbestos management plan for Agriculture and Agri-Foods Canada Building 25, located in Mount Pearl, NL, reflecting AMEC's best judgment using information reasonably available at the Site at the time of AMEC's Site visit. AMEC has prepared this report using information understood to be factual and correct and shall not be responsible for conditions arising from information or facts that were concealed or not fully disclosed to AMEC at the time of the Site visit.

The limitations of the ACM Survey are specified in **Appendix 7**.

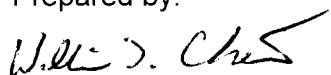
This report has been prepared for the exclusive use of Public Works and Government Services Canada. The work described herein was conducted in accordance with the generally accepted assessment practices, with the conclusions based on the Site information readily available at the time of completing the work. No other warranty, expressed or implied is made. AMEC will not be responsible for the use of this report by any third party, or reliance on or any decision to be made based on it without the prior written consent of AMEC. AMEC accepts no responsibility for damages, if any, by any third party as a result of decisions or actions based on this report.

We trust the above information is satisfactory. If you have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,

AMEC Earth & Environmental

Prepared by:



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A handwritten signature in black ink, appearing to read "John Krilow".

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APPENDIX 1

ASBESTOS CONTAINING MATERIAL SURVEY

1.0 INTRODUCTION

AMEC Earth and Environmental, a division of AMEC Americas Limited (AMEC) was retained by Public Works and Government Services Canada (PWGSC) on behalf of Agriculture and Agri-Foods Canada to conduct an asbestos containing material (ACM) Survey of the Atlantic Cool Crop Climate Research Facility (Building 25) located in Mount Pearl, Newfoundland and Labrador (the "Site Building"). The Site Building is currently occupied by a functioning agricultural research facility. The General Site Location is presented in Figure 1 (Appendix A).

The objective of the ACM Survey was to determine the type, presence, quantity and location of asbestos-containing materials (ACMs) at the Site Building.

The Project was carried out in accordance to the PWGSC Terms of Reference dated November 2006 and the scope of work detailed in the AMEC proposal dated 16 November 2006.

1.1 BACKGROUND INFORMATION

As part of the ACM Survey, AMEC interviewed Mr. Frank Ralph, Facility Manager, 1980 - present (the "Site Representative") to gain information related to past activities at the Site Building. It was reported by the Site Representative that the Building has been used as an agricultural research facility since its original construction in the mid 1960s.

According to the Site Representative, three structures were attached to Building 25 at different time periods; namely a greenhouse (late 1960s), the Provincial Lab Building (1982) and Building 39 (1996). It is noted that the aforementioned attached structures are not included as part of this asbestos Survey. Also according to the Site representative, major renovations to Building 25 have included new boilers (1991), new roof and ventilation system (1992), replacement of ductwork above all fume hoods (1996), removal of interior wall between Room Nos. 1-18 and 1-19 (2001), removal of fume hood in Room No. 1-20 and installation of stainless steel lining in two other fume hoods (2001) and painting throughout the Building (2001 - 2003).

Building 25 is a three-story building, which occupies an approximate footprint area of 760 m². The Building is primarily of concrete construction and contains offices, laboratories, freezer rooms, washrooms, library, meeting room, boiler room, wet bench area and various mechanical rooms. The exterior walls of the Building consist of concrete block, poured concrete or brick. Interior walls consist of a mix of concrete block, poured concrete or plaster (over brick). Some office walls on the basement level contain gypsum board, which was reported by the Site representative to be installed over plaster approximately 5 years ago. Ceilings are a combination of suspended (lay-in) tiles, plaster or bare concrete. Floors were observed to be a mix of vinyl tiles, terrazzo or bare concrete. It was reported by the Site Representative that the entire roof, supported by steel girders, was totally stripped and replaced with a layered roof and membrane approximately 15 years ago.



1.2 PREVIOUS ASBESTOS SAMPLING

As part of the ACM Survey, PWGSC provided AMEC with copies of previous asbestos sample results and construction drawings for review.

Between 1995 and 2004, Pinchin LeBlanc Environmental Ltd. (PLEL) collected 14 samples of bulk building materials within Building 25. Eight of these samples consisted of wall or ceiling plaster and three samples consisted of lab fume hood ductwork materials. The remaining samples consisted of pipe elbow cement, floor tile and dust.

A summary of the PLEL suspect ACM samples, compiled by AMEC, is provided in Table 1-1. Laboratory certificates for the PLEL samples are also included in Appendix B.

TABLE 1-1
Summary of PLEL Suspect ACM Sampling 1995 - 2004
Agriculture and Agri-Foods Canada Building 25, Mount Pearl, NL

PLEL Sample Date	PLEL Sample No.	Material Description	Location Room #	Asbestos Result Percent & Type
7-Apr-95	02-151-001AC	Lab Fume Hood, elbow cement, homogeneous, grey, soft, cementitious material	NA	50 - 75 % Chrysotile
7-Apr-95	02-151-002AC	Lab Fume Hood, cement pipe, straight, homogeneous, grey, hard, cementitious material	NA	10 - 25 % Chrysotile 5 - 10 % Crocidolite
12-Mar-96	01-512-100	3 phases: Fume hood exhaust insulation a) homogeneous, black tar b) homogeneous, brown, fibrous material c) homogeneous, gold, fibrous material	NA	a) 5 - 10 % Chrysotile b) ND c) ND
12-Jan-96	02-512-003	Contents of vacuum bag, brown dust	NA	ND
20-Dec-96	Sample #1	Plaster finish coat, homogeneous, white, hard, cementitious material	NA	ND
21-Mar-97	02-832-001	Heating line elbow cement, homogeneous, grey, soft, cementitious material	B-7	50 - 75 % Chrysotile
21-Mar-97	02-832-002	9" x 9" floor tile, homogeneous, green, consolidated material	B-5	1 - 5 % Chrysotile
21-Mar-97	02-832-003	Wall finish, homogeneous, grey, hard, cementitious material	Kitchen	1 - 5 % Chrysotile
21-Mar-97	02-832-004	2 phases: Wall finish a) homogeneous, white, hard, cementitious material b) homogeneous, white, hard, cementitious material	B-7	a) ND b) <0.1% Chrysotile
21-Mar-97	02-832-005	Wall finish, homogeneous, beige, hard, cementitious material	B-5	<0.1% Chrysotile
18-Mar-04	001	2 phases: Plaster on wall around column a) homogeneous, white, soft, cementitious material b) homogeneous, tan, granular, cementitious material	1-18	a) ND b) 1 - 5 % Chrysotile
23-Mar-04	001	2 phases: Plaster ceiling a) homogeneous, white, soft, cementitious material b) homogeneous, tan, granular, cementitious material	1-19	a) ND b) 0.1 - 1.0 % Chrysotile
23-Mar-04	002	2 phases: Plaster on ceiling a) homogeneous, white, soft, cementitious material b) homogeneous, tan, granular, cementitious material	1-16	a) ND b) 0.1 - 1.0 % Chrysotile
23-Mar-04	003	2 phases: Plaster ceiling a) homogeneous, white, soft, cementitious material b) homogeneous, tan, granular, cementitious material	1-20	a) ND b) 1 - 5 % Chrysotile

A review of the results revealed that three of the eight plaster samples were found to be asbestos containing material, while four others contained only trace amounts of asbestos.

The lab fume hood ductwork materials (tar, insulating cement and pipe), floor tile and insulating pipe cement were also found to be asbestos-containing. A dust sample collected from a vacuum bag was non-ACM.

Prior to commencement of the ACM Survey, AMEC identified data gaps and targeted specific building materials for sampling and analysis in order to obtain additional information. Also, during the Survey, AMEC investigated the status of previously identified asbestos containing materials and, in some cases, collected similar materials to corroborate the previous data. A discussion of the previous work has been incorporated into applicable sections of the Survey findings (Section 4.0).

2.0 SCOPE AND METHODOLOGY

2.1 REGULATORY FRAMEWORK

Asbestos-Containing Materials (ACMs) are fibrous hydrated silicates, and can be found in building materials as either “friable” or “non-friable” asbestos products. Friable asbestos refers to materials that can be readily crumbled using hand pressure, separating asbestos fibres from the binding materials with which they are associated. Non-friable material refers to asbestos that is associated with a binding agent (such as tar or cement), preventing ready release of airborne fibres. Friable asbestos is commonly found in boiler and pipe insulation. Non-friable or bound asbestos is typically found in roofing tars, floor and ceiling tiles, and precast asbestos cement products commonly referred to as “transite”.

ACMs were discontinued from use in Canada in the late 1970s/early 1980s, although non-friable asbestos is still found in many more recent buildings. Additional background information on asbestos is contained within Appendix D.

ACMs in the workplace are regulated under the following federal and provincial policies and regulations:

Federal:

- Treasury Board of Canada Secretariat Hazardous Substances Directive - II, Section 2.9 as it relates to asbestos management; and
- Public Works and Government Services Canada Departmental Policy (DM: 057) - *Asbestos Management*, dated March 12, 1997.

Provincial:

- Newfoundland and Labrador *Asbestos Abatement Regulations* (Nfld. Reg. 111/98).

Under these regulations, materials containing greater than 1% asbestos fibers are considered asbestos-containing and should be managed in accordance with the applicable regulations.

As Building 25 is located on a federal site, the building and employees are under federal, not provincial, jurisdiction. Typically, federal buildings and employees come under the Canada Labour Code, however, contractors would be under provincial jurisdiction.

2.2 SURVEY METHODOLOGY

AMEC performed an ACM Survey of Building 25 between December 6th and 8th, 2006. The Survey included a visual inspection and intrusive bulk sampling program of suspected ACMs and was performed by Mr. Bill Chew, B.Sc., CET and Mr. John Krilow, CET of AMEC. The assessment was as non-intrusive as possible with regard to building components. Suspect ACMs were visually inspected and sampled using industry standard protocols and procedures and the requirements of the above-noted federal and provincial policies and regulations.

AMEC was accompanied by the Facility Manager, Mr. Frank Ralph ("Site Representative") or a designate during the ACM Survey.

During the Survey, all accessible areas of the Site Building were examined for the presence of suspected friable and non-friable ACMs. Materials suspected of containing asbestos (floor tiles, wall board, insulation, pipe wrap, wall plaster, etc.) were sampled by removing a small section of material (650 mm²) using a utility knife and placing the material in a plastic ziplock bag. Where friable materials were sampled, a piece of duct tape was later placed over the sampling location.

Bulk samples were collected from materials that appeared visually distinct and therefore repetitive testing was generally not performed. The presence, location, condition and approximate quantities of each suspect ACM were recorded. Each material sampled was assigned a sample number and location recorded on building floor plans.

A total of fifty-two (52) bulk samples of building materials suspected of containing asbestos were collected and submitted to AMEC's laboratory in Mississauga, ON for analysis of asbestos content using a combination of dispersion staining techniques and Polarized Light Microscopy (PLM) methodology. In addition, four random duplicate samples were submitted to the laboratory as part of the quality control (QC) program.

Sampling locations are identified on Building floor plans, provided on Figure Nos. 2, 3 & 4 (Appendix A). Photographs of some sampling locations are provided in Appendix 6. A summary of suspected ACM samples is provided in Table C-1 (Appendix C). Laboratory certificates are also included in Appendix C.

3.0 SURVEY LIMITATIONS

This ACM Survey was conducted between December 6th and 8th, 2006. This report reflects the observations, findings, and analysis of materials sampled during this time. The observations are based on the specific areas inspected. The scope of the ACM Survey included mechanical equipment, structures, and finishes located in accessible areas of the Building. Analytical results were used to quantify the sampled materials at the specific sample locations. Materials found to be visually similar to those analyzed, where possible were referenced to specific analyzed samples collected elsewhere. Repetitive testing of similar materials was not performed.

The findings within this report do not reflect potential ACMs in areas not accessed, such as remote space areas, wall cavities and ceilings spaces. It is possible that materials may exist which could not be reasonably identified within the scope of this investigation or which were not apparent or accessible during the Survey. An area above a suspended tile ceiling, behind a closed door, or behind an access hatch is considered accessible. An area enclosed by gypsum board, plaster, or panelling, roofing materials, boiler refractory, etc., where minor demolition is required to gain entry, is considered non-accessible and was not included as part of this investigation. During future renovations or demolition activities and subsequent removal of interior wall and ceiling materials, the actual quantities of asbestos containing materials can be verified. Also at this time, analysis of suspect ACM materials may be required if the appearance differs from that of materials previously confirmed to contain asbestos in adjacent rooms.

It is noted that AMEC gained access to all but one room within the Building during the course of the ACM Survey; namely the locked vault (Room No. B-12). The Site Representative did not possess the lock combination to this room at the time of the Survey.

Roofing materials such as sealers on flat roofs may contain asbestos. These items are typically not sampled as it may damage the integrity of the roof, resulting in leaks. In addition, it was reported by the Site Representative that the entire roof was totally striped and replaced with a layered roof and membrane approximately 15 years ago.

4.0 SURVEY FINDINGS

Findings of the ACM Survey are based on visual inspection, sampling of suspect materials and laboratory analyses. The analytical results are summarized in Table C-1 in Appendix C. Laboratory certificates of analysis are also provided in Appendix C. Building floor plans, identifying sampling locations, are provided on Figure Nos. 2, 3 & 4 (Appendix A). Photographs of materials confirmed by the analytical laboratory to be asbestos-containing are contained in Appendix 6.

Results indicate that twenty-five (25) of the fifty-two (52) samples collected contained more than 1 % asbestos fibres. Below is a discussion of the types of materials confirmed to be asbestos-containing.

4.1 MECHANICAL INSULATION

4.1.1 Piping

The majority of insulating pipe wrap observed and sampled (4 samples) within the Building was found to be non-ACM and consists of a yellow mineral wool or brown wool-like material, with cellulose outer covering. This is the case throughout the Building with two exceptions:

- Insulating pipe wrap on 300 mm diameter, steam header piping (white fibrous material) in Room No SB-1 (boiler room) was found to be 20 % amosite asbestos. Based on analytical results and visual observations, 40 linear metres of this pipe wrap was noted to be present in the boiler room (see Photo 6, Appendix 6); and
- Insulating pipe wrap (corrugated paper type) on water drain in sub-basement hall (10 % chrysotile asbestos). Based on analytical results and visual observations, 15 linear metres of this pipe wrap was noted to be located in the sub-basement halls room (see Photo 3).

However, it is noted that asbestos-containing pipe insulation or other mechanical insulation may be present in areas of the Building that are inaccessible, such as within pipe chases, above inaccessible ceilings or inside wall cavities.

4.1.2 Pipe Fittings

Insulating pipe cement was observed on pipe fittings throughout the Building. AMEC collected seven samples of this material as part of the ACM Survey. Six of seven samples of insulating cement located on pipe elbows, joints and pipe wrap ends were found to typically contain approximately 75 % chrysotile asbestos (see Photos 4, 5, 8, 9, 11 & 17).

It can be assumed that all insulating pipe elbows/joints/wrap ends within the Building are ACM, with the exception of pipe elbows in Room No. B-26.

AMEC visually quantified pipe fittings containing insulating pipe cement in accessible areas of the Building, mainly in Room Nos. SB-1 (boiler room), B-25 (wet bench area) and the sub-basement hallways. In order to estimate the total number of pipe fittings containing insulating ACM cement, AMEC removed metal covers on two office heating units to observe the piping configuration. This inspection revealed two fittings containing insulating ACM cement for each heater (See Photos 8 & 9). Therefore, AMEC has assumed that there are two fittings containing insulating ACM cement for every individual heating unit in the Building. This, combined with fittings directly observed, as well as an added 20 % as a margin of error, AMEC has estimated that there are 560 insulating ACM cement pipe elbows, joints and pipe wrap ends in the Building.

It is noted that the previous sampling work, performed by PLEL, showed that a sample of insulating pipe cement collected in Room No. B-7 contained 50 - 75 % chrysotile asbestos. Laboratory certificates for the previous PLEL samples are also included in Appendix B.

Note that the estimated quantity referenced above is based in part on visual observations made on a room-by-room basis, analytical results and discussions with the Site Representative or designate. Repetitive testing of similar materials was not performed.

4.1.3 Heating System

The four boilers and nearby associated piping located in Room No. SB-1 were reported by the Site Representative to have been installed in the early 1990s. However, some piping within this room was also reported to be original.

4.1.4 Hot Water Tanks

Two hot water tanks in Room B-26 contain insulation comprised of 10 % chrysotile asbestos and 30 % amosite asbestos (see Photo 7).

Insulation on the condensate return tank in Room N. SB-1 was sampled and found to be non-ACM.

4.2 THERMAL FIREPROOFING / INSULATION

No blown-in insulation was observed in the ceiling space or exterior walls of the Building. AMEC accessed the ceiling space above Room No. 1-4, through a ceiling hatch, and observed fiberglass insulation. Forty (40) mm styrofoam was observed on the inside of the exterior concrete walls of Room Nos. 1-4 and 1-10, upon removal of the metal heating covers.

4.3 DECORATIVE MATERIALS

No decorative materials, suspected of containing asbestos, were observed in the Building.

4.4 FLOORING

Nine different colours of 23 x 23 sq. cm (9 inch) floor tiles were observed throughout the Building and all were sampled. Analysis showed that all 23 x 23 sq. cm floor tiles sampled within the Building are ACM (3 - 12 % chrysotile asbestos). Photo 1 shows a typical ACM floor tile (photos of other ACM floor tiles having different colours are not provided). The locations of these floor tiles are shown on the Figures in Appendix A. The total quantity of 23 x 23 sq. cm ACM floor tiles within the Building has been estimated at 570 m².

It is noted that the previous sampling work, performed by PLEL, showed that 23 x 23 sq. cm floor tiles in Room No. B-5 contained 1 - 5 % chrysotile asbestos.

All 30 x 30 sq. cm (12 inch) floor tile that was sampled by AMEC (3 types) was found to be non-ACM.

Terrazzo flooring in the hallways and corridors was sampled and found to contain only a trace (< 1 %) of asbestos fibres.

4.5 CEILING TILES

Three types of 0.6 m x 1.2 m, suspended ceiling tiles were observed in the Building. Two of these types were reported by the Site Representative to be installed within the past 10 years. A sample of the third, older type of ceiling tile was analyzed and found to contain no asbestos fibres.

4.6 PLASTER FINISHES

Plaster walls and ceilings were observed in the majority of the Building and were also reported by the Site Representative to be located behind recently installed gypsum board (within the past 10 years). Nine samples of wall and ceiling plaster were collected by AMEC throughout the Building. Four of nine samples of wall/ceiling plaster were found to contain 2 - 5 % chrysotile asbestos (see Photos 12, 13, 14 & 19).

AMEC's review of the previous sampling work, performed by PLEL, showed that three of eight plaster samples, collected from Room Nos. 1-18, 1-20 and a former kitchen (believed to be Room No. B-4), were ACM.

Due to the non-homogeneous nature of this material, all ceiling and wall plaster within the Building should be treated as ACM. Based on the quantity of plaster walls and ceilings directly observed, with an added 20 % as a margin of error, AMEC has estimated that there is 4000 m² of ACM wall and ceiling plaster within the Building.

Some areas of wall/ceiling plaster, located in Room Nos. 1-16, 1-20, B-21 and SB-1, were also observed to be damaged. Note that although analysis of ceiling plaster in Room No. B-21 (freezer room) and wall plaster in Room No. 1-20 showed no asbestos was detected, this material should be treated as asbestos based on positive results of similar samples and non-homogeneous nature of material.

It is noted that both the AMEC and previous PLEL plaster samples showed that the thin (3 - 4 mm thick) white, topcoat layer of plaster was, in all seven cases, found to be non-ACM. The underlying 25 mm thick layer of hard, grey, granular plaster was, in most cases, found to be asbestos-containing (see Photo 13). As it would be impractical to separate these two layers in a major renovation or demolition, the entire thickness of both plaster layers should be treated as an asbestos containing material.

4.7 ASBESTOS CEMENT PRODUCTS

A wallboard material was observed on the interior surfaces of a laboratory fume hood located in Room No. 1-17 (see Photo 16). A sample of this wallboard was analyzed and found to contain 25 % chrysotile asbestos. This type of wall board was also reported to exist below stainless steel sheeting in two other fume hoods. A fourth fume hood was reported by the Site Representative to be constructed only of stainless steel. The total quantity of ACM wallboard (3 fume hoods) has been estimated at 15 m².



It is noted that asbestos-containing, fume hood ductwork materials (i.e. tar, insulating cement and pipe), previously sampled by PLEL (1995 and 1996), was reported by the Site Representative to be removed from all fume hoods in 1996 and replaced with steel.

4.8 OTHER ASBESTOS CONTAINING MATERIALS

A sample of fabric located (0.03 m²) on a ceiling light fixture in Room No. SB-7 (former photography dark room) was analyzed and found to contain 80 % chrysotile asbestos (see Photo 2).

A sample of tar paper located below insulation on a duct in Room No. B-25 was analyzed and found to contain 8 - 10 % chrysotile asbestos (see Photo 10). There are two such ducts in this room (total quantity estimated at 6.25 m²).

4.9 QUALITY CONTROL DISCUSSION

As part of the quality control (QC) program for this Survey, four random duplicate samples of bulk building materials were collected and submitted to the laboratory for the purpose of data comparison as a measure of gauging the quality of the data set. Table 1-2 provides a summary of the duplicate sample results.

TABLE 1-2
Comparison of Asbestos Duplicate Sample Results
Agriculture and Agri-Foods Canada Building 25, Mount Pearl, NL

Sample #	Material Description	Location Room #	Asbestos Result (% & Type)	Relative Percent Difference (RPD)
ACM 9	Floor tile, 23x23 cm, light brown with dark brown and white	B-2	5 % Chrysotile	50 %
ACM D1			3 % Chrysotile	
ACM 37	Tar paper, duct	B-25	8 % Chrysotile	22 %
ACM D2			10 % Chrysotile	
ACM 39	Ceiling plaster, grey granular, with wire mesh	1-16	2 % Chrysotile	NE
ACM D3			Trace Chrysotile	
ACM 40	Ceiling plaster, white cementitious (thin top coat)	1-16	ND	NE
ACM D4			ND	

Notes:
 ND denotes "Not detected".
 NE denotes "Not Evaluated".

Upon review of the duplicate results, two of the four duplicate sample results were found to be equal to or within 50% relative percent difference (RPD), which is considered acceptable precision criteria for the bulk samples. These evaluations are only applicable when both results are at least three to five times the reporting limit. The other duplicate sample results were either non-detectable or slightly above detection limits, therefore these have not been evaluated. Data quality for this ACM Survey is therefore considered valid and results may be used with confidence for decision making purposes.

5.0 SUMMARY OF FINDINGS

Conclusions regarding ACMs at Agriculture and Agri-Foods Canada Building 25 in Mount Pearl, NL, correspond to the professional judgment of AMEC, which is based on results from the Survey as described in this report.

Based upon the results of fifty-two (52) samples of bulk materials and visual comparison of similar materials, ACMs were identified in the subject Building. A summary of all suspected ACM samples is provided in Table C-1 (Appendix C). Table 1-3 lists the estimated quantities of confirmed ACMs found within the Building.

TABLE 1-3
Estimated Quantities of ACMs
Agriculture and Agri-Foods Canada Building 25, Mount Pearl, NL

Material Description	Friable Y/N	Asbestos Result Percent & Type	Estimated Quantity	Comment
Piping				
Pipe wrap insulation, white, fibrous	Y	20 % Amosite	40 linear meters	Room No. SB-1 - Located on overhead, 300 mm dia. steam header pipe. Small damaged portion.
Pipe wrap insulation, corrugated, paper-type	Y	10 % Chrysotile	15 linear metres	Room No. SB-7 and sub-basement hallways - 10 cm dia. drain water pipe.
Pipe Fittings				
Insulating pipe cement, elbows, joints, pipe wrap ends white, cementitious	Y	70 - 80 % Chrysotile	560 total	Located throughout building (except Room No. B-26). Room No. SB-1 - 240 fittings. Room No. B-25 - 110 fittings. Sub-basement Halls - 60 fittings. Various locations, i.e. behind metal heater covers, below stairwells, in hallways - 150 fittings.
Hot Water Tanks				
Tank insulation, white, cementitious	Y	10 % Chrysotile, 30 % Amosite	13.6 m ² total	Room No. B-26 - Two tanks (same material) measuring 2.2 m x 0.8 m dia.
Flooring				
Floor tile, 23x23 cm, various colours	N	3 - 12 % Chrysotile	570 m ² total	Located throughout building (See figures in appendix A). Nine colours include: green with white, white with black, light green with white and dark green, light green with white, red with white, light brown with dark brown and white, brown with dark brown, beige with green, and white with brown.
Plaster				
Ceiling and wall plaster, grey granular.	Y (1)	2 - 5 % Chrysotile	4000 m ² total	Located throughout building (See figures in appendix A). Some plaster locations contain a wire mesh backing.
Wallboard				
Wallboard, interior of fume hood	N	25 % Chrysotile	15 m ² total	Room Nos. 1-16, 1-17 & 1-18 each contain an ACM wallboard-lined fume hood - 5 m ² each.
Other Asbestos materials				
Fabric, ceiling light fixture	N	80 % Chrysotile	0.03 m ²	Room No. SB-7 - 20 cm dia.
Tar paper, duct	N	8 - 10 % Chrysotile	6.25 m ² total	Room No. B-25. Two ducts 3.12 m ² each.

NOTES:

- Although wall and ceiling plaster are considered non-friable in-situ, these plasters become friable during demolition, cutting or abrasion. As a result, wall and ceiling plasters should be treated as friable materials.

The Survey has confirmed that asbestos-containing materials exist at the subject property. The PWGSC DP:057 *Asbestos Management*, requires damaged ACMs be repaired or removed using specific procedures. It also requires the removal of all ACMs that have a potential of being disturbed during planned renovations, and that an Asbestos Management Plan be implemented and kept in place until such time that all ACMs have been removed from the buildings. A certified contractor must complete asbestos repairs or removals.

6.0 CLOSURE

This report presents the methodology and findings of an ACM Survey of Agriculture and Agri-Foods Canada Building 25, located in Mount Pearl, NL, reflecting AMEC's best judgment using information reasonably available at the Site at the time of AMEC's Site visit. AMEC has prepared this report using information understood to be factual and correct and shall not be responsible for conditions arising from information or facts that were concealed or not fully disclosed to AMEC at the time of the Site visit.

The limitations of the ACM Survey are specified in Appendix 7.

This report has been prepared for the exclusive use of Public Works and Government Services Canada. The work described herein was conducted in accordance with the generally accepted assessment practices, with the conclusions based on the Site information readily available at the time of completing the work. No other warranty, expressed or implied is made. AMEC will not be responsible for the use of this report by any third party, or reliance on or any decision to be made based on it without the prior written consent of AMEC. AMEC accepts no responsibility for damages, if any, by any third party as a result of decisions or actions based on this report.

We trust the above information is satisfactory. If you have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,

AMEC Earth & Environmental

Prepared by:



John Krilow, CET
Senior Environmental Technologist

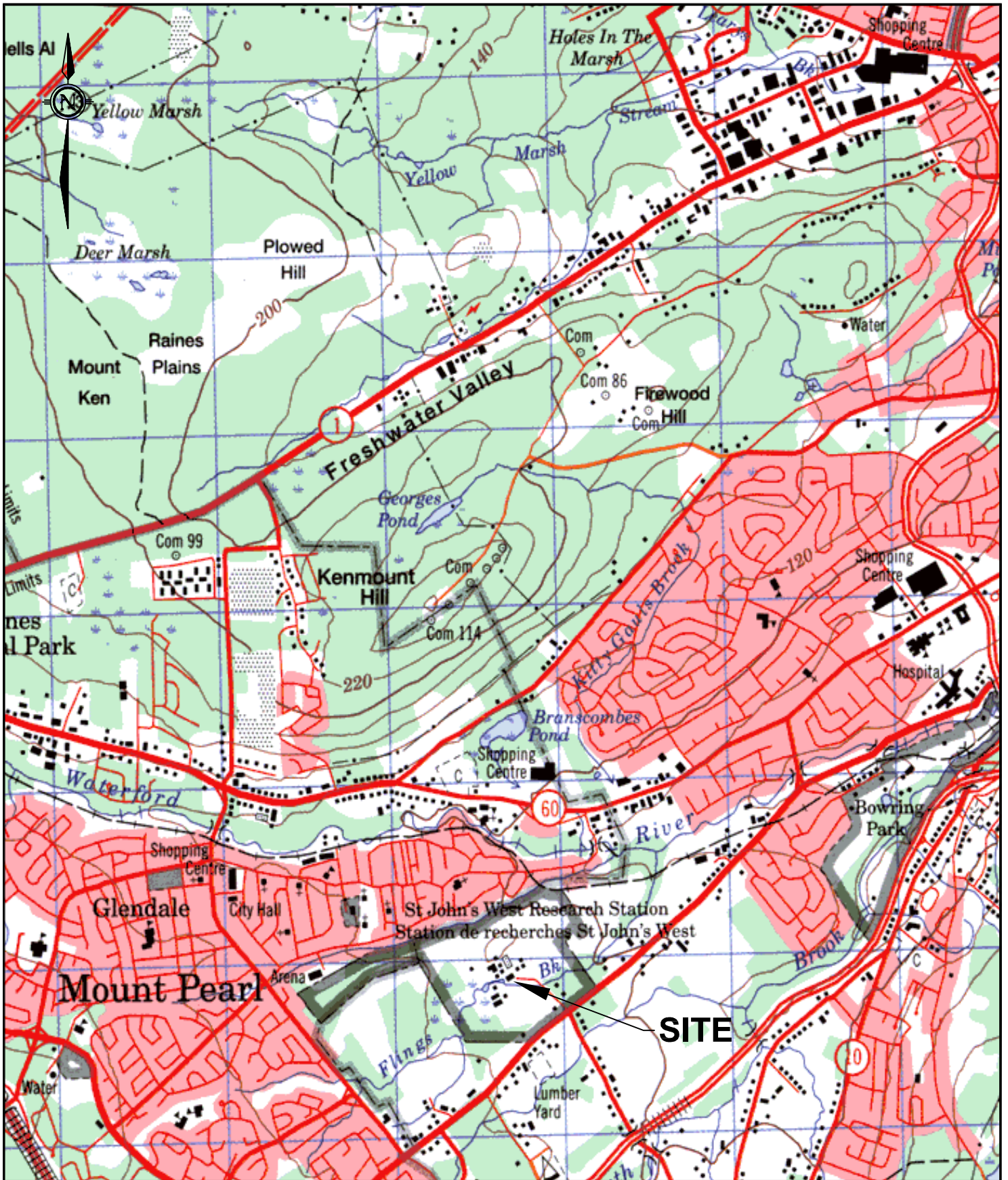
Reviewed by:





Rod Winsor, MSc., P.Eng
Manager Newfoundland & Labrador

APPENDIX A

FIGURES



	Date:		Project:		
	January 16, 2007		GENERAL SITE LOCATION		
 Public Works and Government Services Canada Travaux publics et Services gouvernementaux Canada	Drawn by:		AGRICULTURE AND AGRI-FOODS CANADA BUILDING 25		
	K. Curtis				
	Approved by:		Scale:	Project No.:	Figure No.:
J. Krilow		NTS	TF61076144	1	

NOTE: ALL WALLS ON BASEMENT LEVEL
CONSIST OF PLASTER CONTAINING
ASBESTOS.

SEE PHOTO No.8 (APPENDIX 5) ASSUME 2 INSULATION ACM PIPE
FITTINGS FOR EACH HEATER ON EXTERIOR BUILDING WALLS.

NOTE: CEILINGS IN THIS
HALF OF FIRST FLOOR
CONSIST OF SUSPENDED
(LAY-IN) TILES EXCEPT
STAIRWELLS & ROOM Nos.
1-11 & 1-22 ARE
PLASTER CONTAINING
ASBESTOS AND ROOM No.
1-4 IS GYPSUM BOARD

NOTE: CEILINGS IN THIS
HALF OF FIRST FLOOR
CONSIST OF PLASTER
CONTAINING ASBESTOS
EXCEPT ROOM No. 1-21 IS
SUSPENDED (LAY-IN) TILES



LEGEND

- ACM1 ▲ SUSPECTED ACM SAMPLE LOCATION - CONFIRMED NON-ACM
- ACM1 ▲ SUSPECTED ACM SAMPLE LOCATION - CONFIRMED ACM
- LP1 ● PAINT CHIP SAMPLING LOCATION - CONFIRMED NON-LBP
- LP1 ● PAINT CHIP SAMPLING LOCATION - CONFIRMED LBP
- DENOTES AREA OF CONFIRMED ACM FLOOR TILE
- DENOTES ACM WALBOARD - LINED FUME HOOD
- ACM - DENOTES ASBESTOS CONTAINING MATERIAL
- LBP - DENOTES LEAD BASED PAINT
- MBP - DENOTES MERCURY BASED PAINT

FIRST FLOOR PLAN

SCALE: 1:125



FIGURE 2
SUSPECTED ACM AND LBP/MBP
SAMPLING LOCATIONS

FIRST FLOOR PLAN
AGRICULTURE AND AGRI-FOODS CANADA BUILDING 25
MOUNT PEARL, NL

NOTE: DIGITAL DRAWINGS PROVIDED BY PWGSC.
ORIGINAL DRAWINGS WERE EDITED FOR PURPOSES
OF BUILDING SURVEY AND ARE FOR REFERENCE ONLY

NOTE: ALL WALLS ON BASEMENT LEVEL
CONSIST OF PLASTER CONTAINING
ASBESTOS. MOST OFFICE WALLS CONTAIN
GYPSUM BOARD OVER PLASTER

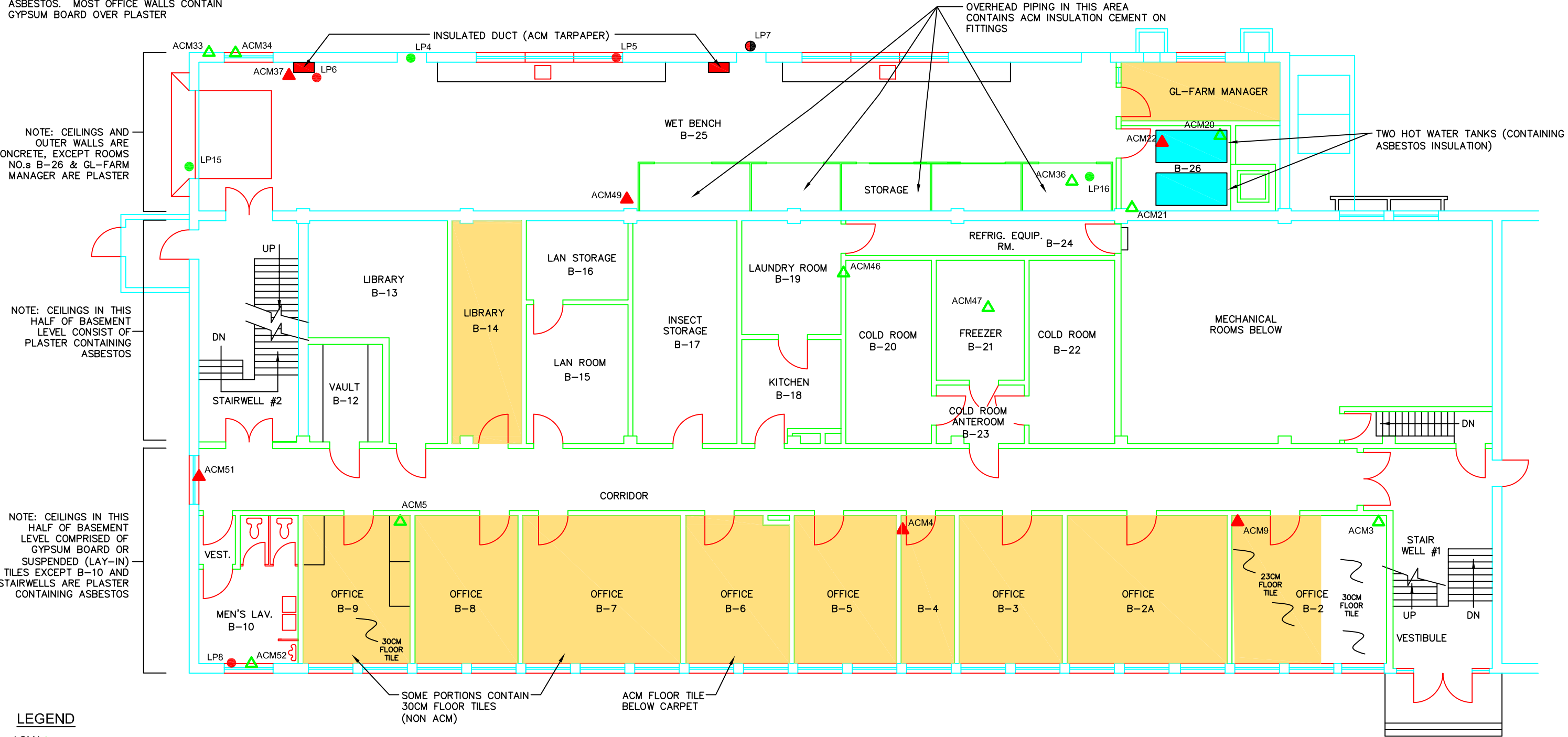
NOTE: CEILINGS AND
OUTER WALLS ARE
CONCRETE, EXCEPT ROOMS
NO.s B-26 & GL-FARM
MANAGER ARE PLASTER

NOTE: CEILINGS IN THIS
HALF OF BASEMENT
LEVEL CONSIST OF
PLASTER CONTAINING
ASBESTOS

NOTE: CEILINGS IN THIS
HALF OF BASEMENT
LEVEL COMPRISED OF
GYPSUM BOARD OR
SUSPENDED (LAY-IN)
TILES EXCEPT B-10 AND
STAIRWELLS ARE PLASTER
CONTAINING ASBESTOS

OVERHEAD PIPING IN THIS AREA
CONTAINS ACM INSULATION CEMENT ON
FITTINGS

TWO HOT WATER TANKS (CONTAINING
ASBESTOS INSULATION)



LEGEND

- ACM1 ▲ SUSPECTED ACM SAMPLE LOCATION - CONFIRMED NON-ACM
- ACM1 ▲ SUSPECTED ACM SAMPLE LOCATION - CONFIRMED ACM
- LP1 ● PAINT CHIP SAMPLING LOCATION - CONFIRMED NON-LBP
- LP1 ● PAINT CHIP SAMPLING LOCATION - CONFIRMED LBP
- LP1 ● PAINT CHIP SAMPLING LOCATION - CONFIRMED LPB/MBP
- DENOTES AREA OF CONFIRMED ACM FLOOR TILE
- DENOTES ACM TAR PAPER OVER DUCT
- DENOTES ACM TANK INSULATION
- DENOTES ASBESTOS CONTAINING MATERIAL
- DENOTES LEAD BASED PAINT
- DENOTES MERCURY BASED PAINT

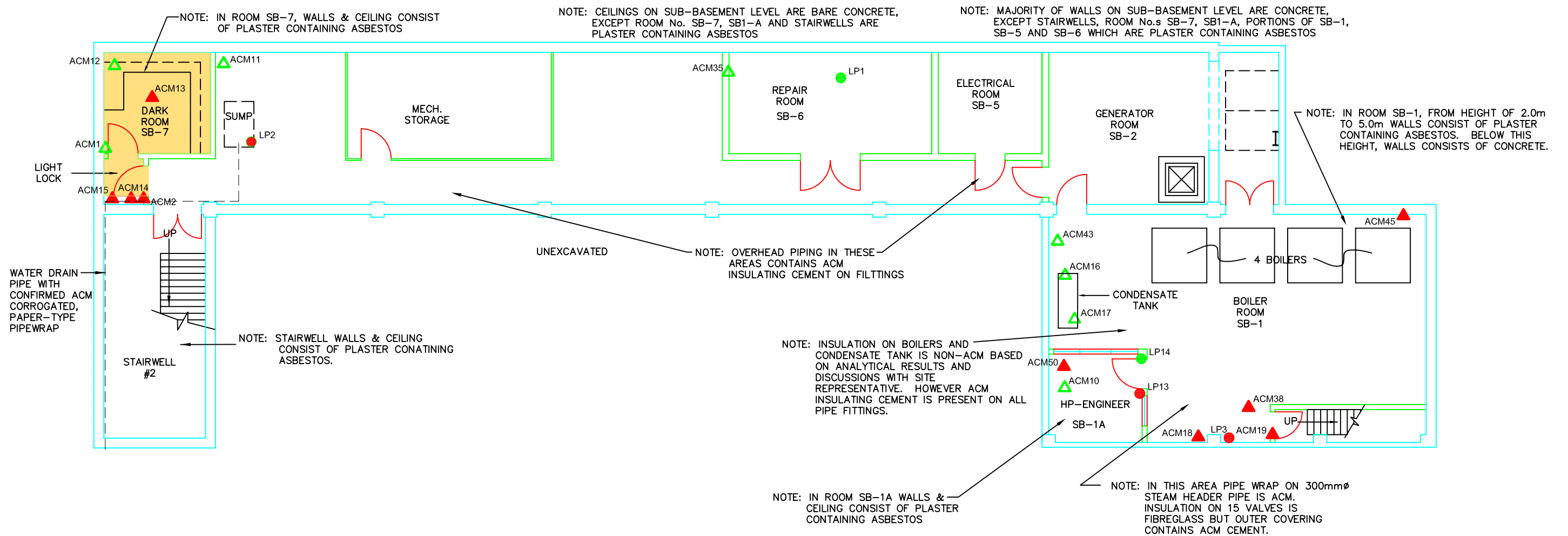
BASEMENT PLAN

SCALE: 1:125



FIGURE 3
SUSPECTED ACM AND LBP/MBP
SAMPLING LOCATIONS
BASEMENT PLAN
AGRICULTURE AND AGRI-FOODS CANADA BUILDING 25
MOUNT PEARL, NL

NOTE: DIGITAL DRAWINGS PROVIDED BY PWGSC.
ORIGINAL DRAWINGS WERE EDITED FOR PURPOSES
OF BUILDING SURVEY AND ARE FOR REFERENCE ONLY



LEGEND

- ACM1 SUSPECTED ACM SAMPLE LOCATION - CONFIRMED NON-ACM
- ACM1 SUSPECTED ACM SAMPLE LOCATION - CONFIRMED ACM
- LP1 PAINT CHIP SAMPLING LOCATION - CONFIRMED NON-LBP
- LP1 PAINT CHIP SAMPLING LOCATION - CONFIRMED LBP
- DENOTES AREA OF CONFIRMED ACM FLOOR TILE

SUB-BASEMENT PLAN

SCALE: 1:125



FIGURE 4
SUSPECTED ACM AND LBP/MBP
SAMPLING LOCATIONS

SUB-BASEMENT PLAN
 AGRICULTURE AND AGRI-FOODS CANADA BUILDING 25
 MOUNT PEARL, NL

NOTE: DIGITAL DRAWINGS PROVIDED BY PWGSC.
 ORIGINAL DRAWINGS WERE EDITED FOR PURPOSES
 OF BUILDING SURVEY AND ARE FOR REFERENCE ONLY

APPENDIX B

**LABORATORY CERTIFICATES
FOR PREVIOUS PLEL
ASBESTOS SAMPLING 1995 - 2004**

Pinchin LeBlanc
ENVIRONMENTAL LTD.

682 9812
Paul's document
754 4490

**ANALYSIS OF BULK SAMPLES FOR ASBESTOS CONTENT
BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING**

PROJECT NAME: Agriculture Canada
PROJECT NO.: 02-151
LAB REFERENCE NO.: Db0574-1995
DATE: April 7, 1995

Two bulk samples were submitted for determination of their asbestos content by Polarized Light Microscopy and Dispersion Staining.

Sample preparation and analytical procedures are in compliance with the Code for the Determination of Asbestos from Bulk Insulation Samples, dated the 23rd of August, 1985 and issued by the Occupational Health and Safety Division of the Ontario Ministry of Labour, and U.S. EPA Method 600/R-93/116 dated July, 1993. Asbestos fibres are identified by a combination of morphology, colour, refractive index, extinction, sign of elongation, birefringence and dispersion staining colours. A visual estimate is made of the volume percentage of asbestos present. The lower limit of reliable quantitation is estimated to be 0.1%. A reported concentration of <0.1% indicates the presence of confirmed asbestos in trace quantities limited to only a few fibres or fibre bundles in an entire sample. Multiple phases within a sample are analyzed separately. A total of two analyses were performed.

All bulk samples submitted to this laboratory for asbestos analysis are retained for a minimum of three years. Samples may be retrieved, upon request, for re-examination at any time during that period.

Pinchin LeBlanc Environmental Ltd. is accredited by the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for the identification of asbestos in bulk samples.

This test report relates only to the items tested.

The results are presented in the attached table.

lkc

PINCHIN LEBLANC
ENVIRONMENTAL LTD.

PAROULIER COURT
 500 PRINCE ALBERT ROAD
 SUITE 110
 BARTHAMOUNT, N.A.
 R2V 4T2

BULK SAMPLE ANALYSIS

PROJECT NAME: Agriculture Canada

LAB REFERENCE NO: Db0574-1895

PREPARED FOR: Frank Ralph

DATE: April 7, 1995

Agriculture Canada

PAGE: 1 of 1

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
02-151-001AC Lab Fume Hood, Elbow Cement	Homogeneous, grey, soft cementitious material.	Chrysotile 50-75%	Non-fibrous Material 25-50%		
02-151-002AC Lab Fume Hood, Cement Pipe, Straight	Homogeneous, grey, hard, cementitious material.	Chrysotile Crocidolite 10-25% 5-10%	Non-fibrous Material 50-75%		

ANALYST: *Harry Cough*

**ANALYSIS OF BULK SAMPLES FOR ASBESTOS CONTENT
BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING**

PROJECT NAME: Agriculture Canada Building
Brookfield Road, St. John's, Newfoundland

PROJECT NO.: 02-512

LAB REFERENCE NO.: Db0764-1996

DATE: January 12, 1996

One bulk sample was submitted for determination of asbestos content by Polarized Light Microscopy and Dispersion Staining.

Sample preparation and analytical procedures are in compliance with the Code for the Determination of Asbestos from Bulk Insulation Samples, dated the 23rd of August, 1985 and issued by the Occupational Health and Safety Division of the Ontario Ministry of Labour, and U.S. EPA Method 800/R-03/118 dated July, 1983. Asbestos fibres are identified by a combination of morphology, colour, refractive index, extinction, sign of elongation, birefringence and dispersion staining colours. A visual estimate is made of the volume percentage of asbestos present. The lower limit of reliable quantitation is estimated to be 0.1%. A reported concentration of <0.1% indicates the presence of confirmed asbestos in trace quantities limited to only a few fibres or fibre bundles in an entire sample. Multiple phases within a sample are analyzed separately. A total of one analysis was performed.

All bulk samples submitted to this laboratory for asbestos analysis are retained for a minimum of three years. Samples may be retrieved, upon request, for re-examination at any time during that period.

Pinchin LeBlanc Environmental Ltd. is accredited by the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for the identification of asbestos in bulk samples.

This test report relates only to the items tested.

The results are presented in the attached table.

NOTE:

This report may not be reproduced, except in full, without the written approval of the laboratory. The client may not use this report to state product endorsement by NVLAP.

PINCHIN LEBLANC
ENVIRONMENTAL LTD.

PARADISE DRIVE
 280 PRINCE ALBERT ROAD
 SUITE 100
 WILLOWDALE, ONT.
 M2B 1S6

BULK SAMPLE ANALYSIS
PROJECT NAME: Agriculture Canada Building 02-512
 Brookfield Road, St. John's, NF.
PREPARED FOR: P. Staben
 Pinchin LeBlanc Environmental Ltd.

LAB REFERENCE NO: D60754-1996

DATE: January 12, 1998

PAGE: 1 of 1

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
02-512-003 Contents of Vacuum Bag	Brown Dust	None Detected	Cellulose 25-50% Hair 5-10% Synthetic Fibres 1-5% Glass Fibres 0.1-1% Non-fibrous Material 50-75%	

ANALYST: *Sally Crayle*

Pinchin LeBlanc

ENVIRONMENTAL LTD.

ANALYSIS OF BULK SAMPLES FOR ASBESTOS CONTENT BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

PROJECT NAME: Agriculture Canada Building
Brookfield Road

PROJECT NO.: 02-812

LAB REFERENCE NO.: D50740-1996

DATE: March 12, 1996

One bulk sample was submitted for determination of asbestos content by Polarized Light Microscopy and Dispersion Staining.

Sample preparation and analytical procedures are in compliance with the Code for the Determination of Asbestos from Bulk Insulation Samples, dated the 23rd of August, 1985 and issued by the Occupational Health and Safety Division of the Ontario Ministry of Labour, and U.S. EPA Method 600/R-93/116 dated July, 1993. Asbestos fibres are identified by a combination of morphology, colour, refractive index, extinction, sign of elongation, birefringence and dispersion staining colours. A visual estimate is made of the volume percentage of asbestos present. The lower limit of reliable quantitation is estimated to be 0.1%. A reported concentration of <0.1% indicates the presence of confirmed asbestos in trace quantities limited to only a few fibres or fibre bundles in an entire sample. Multiple phases within a sample are analyzed separately. A total of three analyses were performed.

All bulk samples submitted to this laboratory for asbestos analysis are retained for a minimum of three years. Samples may be retrieved, upon request, for re-examination at any time during that period.

Pinchin LeBlanc Environmental Ltd. is accredited by the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for the identification of asbestos in bulk samples.

This test report relates only to the items tested.

The results are presented in the attached table.

NOTE:

This report may not be reproduced, except in full, without the written approval of the laboratory. The client may not use this report to claim product endorsement by NVLAP.

BULK SAMPLE ANALYSIS

**PINSHIN LEBLANC
ENVIRONMENTAL LTD.**

FAIRBANKS COURT
200 STANISLAUS AVENUE
SUITE 100
BOSTON, MA
02118

PROJECT NAME: Agriculture Canada Building 02-512
Brookfield Road
PREPARED FOR: P. Staebert
Pinchin LeBlanc Environmental Ltd.

LAB REFERENCE NO: DR0760-1986

DATE: March 12, 1986

PAGE: 1 of 1

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
02612-100 Fume Hood Exhaust Insulation, Elevator of Building	3 Phases: a) Homogeneous, black tar. b) Homogeneous, brown, fibrous material. c) Homogeneous, gold, fibrous material.	Chrysotile None Detected None Detected	5-10% Tar and Other Non- fibrous Material >75% Fiberglass >75% Non-fibrous Material 1-5% Glass Fibres >75%	This sample also contains a layer of cellulose fabric reinforcement.

ANALYST: *Debbie Coughlin*

Pinchin LeBlanc

ENVIRONMENTAL LTD.

ANALYSIS OF BULK SAMPLES FOR ASBESTOS CONTENT BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

PROJECT NAME: Agriculture and Agri Food Canada
PROJECT NO.: 02-630
LAB REFERENCE NO.: Db0970-1996
DATE: December 20, 1996

One bulk sample was submitted for determination of asbestos content by Polarized Light Microscopy and Dispersion Staining.

Sample preparation and analytical procedures are in compliance with the Code for the Determination of Asbestos from Bulk Insulation Samples, dated the 23rd of August, 1985 and issued by the Occupational Health and Safety Division of the Ontario Ministry of Labour, and U.S. EPA Method 600/R-93/116 dated July, 1993. Asbestos fibres are identified by a combination of morphology, colour, refractive index, extinction, sign of elongation, birefringence and dispersion staining colours. A visual estimate is made of the volume percentage of asbestos present. The lower limit of reliable quantitation is estimated to be 0.1%. A reported concentration of <0.1% indicates the presence of confirmed asbestos in trace quantities limited to only a few fibres or fibre bundles in an entire sample. Multiple phases within a sample are analyzed separately. A total of one analysis was performed.

All bulk samples submitted to this laboratory for asbestos analysis are retained for a minimum of three years. Samples may be retrieved, upon request, for re-examination at any time during that period.

Pinchin LeBlanc Environmental Ltd. is accredited by the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for the identification of asbestos in bulk samples.

This test report relates only to the items tested.

The results are presented in the attached table.

NOTE:

This report may not be reproduced, except in full, without the written approval of the laboratory. The client may not use this report to claim product endorsement by NVLAP.

BULK SAMPLE ANALYSIS

PROJECT NAME: Agriculture and Agri Food Canada 02-630

LAB REFERENCE NO: Db0970-1996

PREPARED FOR: Frank Ralph
Agriculture and Agri Food Canada

DATE: December 20, 1996

PAGE: 1 of 1

PINCHIN LEBLANC
ENVIRONMENTAL LTD.

PADDLER'S COVE
300 PRINCE ALBERT ROAD
SUITE 120
DAKEMOUTH, N.S.
B3B 1M2

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
Sample #1 Plaster Finish Coat	Homogeneous, white, hard, cementitious material.	None Detected	Non-fibrous Material > 75%	

ANALYST: *Jacky Cougulas*

PINCHIN LEBLANC
ENVIRONMENTAL LTD.

PADRELABS COVE
 240 PRINCE ALBERT ROAD
 SOUTH 126
 BARTHOLOMEW, N.S.
 B3B 0M2

PROJECT NAME: Agriculture and Agri Food Canada 02-630

LAB REFERENCE NO: Db0970-1996

PREPARED FOR: Frank Ralph
 Agriculture and Agri Food Canada

DATE: December 20, 1996

PAGE: 1 of 1

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
Sample #1 Plaster Finish Coat	Homogeneous, white, hard, cementitious material.	None Detected	Non-fibrous Material > 75%	

ANALYST: *Harby Couplars*

PINCHIN LEBLANC
ENVIRONMENTAL LTD.

FADLER'S COVE
260 FRANK ALBERT ROAD
SUITE 128
DARTMOUTH, N.S.
B3B 1M3

BULK SAMPLE ANALYSIS

PROJECT NAME: Agriculture Canada 02-832

PREPARED FOR: P. Staeben
Pinchin LeBlanc Environmental Ltd.

LAB REFERENCE NO: Db1040-1997

DATE: March 21, 1997

PAGE: 1 of 2

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
02-832-001 Heating Line Elbow Cement, Room B7	Homogeneous, grey, soft, cementitious material.	Chrysotile 50-75%	Non-fibrous Material 25-50%	Vinyl floor tiles may contain very fine asbestos fibres which are not visible using the PLM method, therefore the estimated percentage of asbestos in this sample should be treated as a minimum value only. A more reliable estimate of asbestos content may be obtained by analysis by Transmission Electron Microscopy (TEM).
02-832-002 9"x9", Floor Tile, Room B5	Homogeneous, green, consolidated material.	Chrysotile 1-5%	Non-fibrous Material >75%	
02-832-003 Wall Finish, Kitchen	Homogeneous, grey, hard, cementitious material.	Chrysotile 1-5%	Non-fibrous Material >75%	

ANALYST: *Hobby*

BULK SAMPLE ANALYSIS

PROJECT NAME: Agriculture Canada 02-832

LAB REFERENCE NO: Db1040-1997

PREPARED FOR: P. Staeben
Pinchin LeBlanc Environmental Ltd.

DATE: March 21, 1997

PAGE: 2 of 2

**PINCHIN LEBLANC
ENVIRONMENTAL LTD.**

7 ADDLER'S COWS
390 PRINCE ALBERT ROAD
SUITE 129
DARTMOUTH, N.S.
B3B 1J6

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
02-832-004 Wall Finish, Room B7	2 Phases: a) Homogeneous, white, hard, cementitious material.	None Detected	Non-fibrous Material > 75%	
	b) Homogeneous, light beige, hard, cementitious material.	Chrysotile < 0.1%	Non-fibrous Material > 75%	
	Homogeneous, beige, hard, cementitious material.	Chrysotile < 0.1%	Non-fibrous Material > 75%	
02-832-005 Wall Finish, Room B5				

ANALYST: *Patrick Long*



**ANALYSIS OF BULK SAMPLES FOR ASBESTOS CONTENT
BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING**

PROJECT NAME: Agriculture Canada
Bulk Asbestos

PROJECT NO.: 02-4230

LAB REFERENCE NO.: Db3612 - 2004

DATE: March 18, 2004

One sample was submitted for determination of its asbestos content by Polarized Light Microscopy and Dispersion Staining.

Sample preparation and analytical procedures are in compliance with the Code for the Determination of Asbestos from Bulk Insulation Samples, dated the 23rd of August, 1985 and issued by the Occupational Health and Safety Division of the Ontario Ministry of Labour, and U.S. EPA Method 600/R-93/116 dated July, 1993. Asbestos fibres are identified by a combination of morphology, colour, refractive index, extinction, sign of elongation, birefringence and dispersion staining colours. A visual estimate is made of the volume percentage of asbestos present. The lower limit of reliable quantitation is estimated to be 0.1%. A reported concentration of <0.1% indicates the presence of confirmed asbestos in trace quantities limited to only a few fibres or fibre bundles in an entire sample. Multiple phases within a sample are analyzed separately. A total of two analyses were performed.

All bulk samples submitted to this laboratory for asbestos analysis are retained for a minimum of three months. Samples may be retrieved, upon request, for re-examination at any time during that period.

This test relates only to the items tested. The results are presented in the attached table.

BULK SAMPLE ANALYSIS

LAB REFERENCE No: Db3612 - 2004
 DATE: March 18, 2004
 PAGE: 1 of 1

PROJECT NAME: Agriculture Canada
 Bulk Asbestos
 02-4230
 Quantin Cribb
 Pinchin LeBlanc Env.

PREPARED FOR:

PINCHIN LEBLANC ENVIRONMENTAL LTD.

BURNSIDE INDUSTRIAL PARK
 40 JOHN SAVAGE AVENUE
 DARTMOUTH, N.S.
 B3B 2E6

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
001 Lab 1-18, plaster on wall around column	2 phases: a) Homogenous, white, soft, cementitious material b) Homogenous, tan, granular, cementitious material	None detected Chrysotile	Non-fibrous material >75% Non-fibrous material >75%	

ANALYST: 



**ANALYSIS OF BULK SAMPLES FOR ASBESTOS CONTENT
BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING**

PROJECT NAME: Agriculture Canada
Bulk Asbestos

PROJECT NO.: 02-4230

LAB REFERENCE NO.: Db3591 - 2004

DATE: March 23, 2004

Three samples were submitted for determination of their asbestos content by Polarized Light Microscopy and Dispersion Staining.

Sample preparation and analytical procedures are in compliance with the Code for the Determination of Asbestos from Bulk Insulation Samples, dated the 23rd of August, 1985 and issued by the Occupational Health and Safety Division of the Ontario Ministry of Labour, and U.S. EPA Method 600/R-93/116 dated July, 1993. Asbestos fibres are identified by a combination of morphology, colour, refractive index, extinction, sign of elongation, birefringence and dispersion staining colours. A visual estimate is made of the volume percentage of asbestos present. The lower limit of reliable quantitation is estimated to be 0.1%. A reported concentration of <0.1% indicates the presence of confirmed asbestos in trace quantities limited to only a few fibres or fibre bundles in an entire sample. Multiple phases within a sample are analyzed separately. A total of six analyses were performed.

All bulk samples submitted to this laboratory for asbestos analysis are retained for a minimum of three months. Samples may be retrieved, upon request, for re-examination at any time during that period.

This test relates only to the items tested. The results are presented in the attached table.

PINCHIN LEBLANC ENVIRONMENTAL LTD.

BURNSIDE INDUSTRIAL PARK
40 JOHN SAVAGE AVENUE
DARTMOUTH, N.S.
B3B 2E6

PROJECT NAME:

Agriculture Canada
Bulk Asbestos
02-4230
Quentin Cribb
Pinchin LeBlanc Env.

PREPARED FOR:

Quentin Cribb
Pinchin LeBlanc Env.

LAB REFERENCE No: Db3591 - 2004

DATE: March 23, 2004

PAGE: 1 of 1

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
001 Agriculture Canada soils lab 119, plaster ceiling	2 phases: a) Homogenous, white, soft, cementitious material b) Homogenous, tan, granular, cementitious material	None detected Chrysotile	Non-fibrous material >75% Non-fibrous material >75%	
002 Agriculture Canada lab 116, plaster on ceiling	2 phases: a) Homogenous, white, soft, cementitious material b) Homogenous, tan, granular, cementitious material	None detected Chrysotile	Non-fibrous material >75% Non-fibrous material >75%	
003 Agriculture Canada analytical lab 1-20, plaster ceiling	2 phases: a) Homogenous, white, soft, cementitious material b) Homogenous, tan, granular, cementitious material	None detected Chrysotile	Non-fibrous material >75% Non-fibrous material >75%	



ANALYST:

APPENDIX C

RESULT TABLES
AND
LABORATORY CERTIFICATES

TABLE C-1
Summary of ACM Survey
Agriculture and Agri-Foods Canada Building 25, Mount Pearl, NL

Sample #	Material Description	Location Room #	Photo #	Friable Y/N	Condition Good/Fair/poor/damaged	Asbestos Result Percent & Type	Estimated Quantity	Comment
ACM1	Cement, rubber baseboard molding	SB-7	--	N	Fair	ND	--	
ACM 2	Floor tile, 23x23 cm, green with white	SB-7	1	N	Good	5 % Chrysotile	See note (2)	
ACM 3	Floor tile, 30x30 cm, beige	B-2	--	N	Good	Trace Chrysotile	--	Present only in a portion of room.
ACM 4	Floor tile, 23x23 cm, white with black	B-4	--	N	Good	8 % Chrysotile	See note (2)	
ACM 5	Floor tile, 30x30 cm, green with white	B-9	--	N	Good	ND	--	Present only in a portion of room.
ACM 6	Floor tile, 23x23 cm, light green with white and dark green	1-19	--	N	Good	3 % Chrysotile	See note (2)	
ACM 7	Floor tile, 23x23 cm, light green with white	1-18	--	N	Good	8 % Chrysotile	See note (2)	
ACM 8	Floor tile, 23x23 cm, red with white	1-6	--	N	Good	12 % Chrysotile	See note (2)	
ACM 9	Floor tile, 23x23 cm, light brown with dark brown and white	B-2	--	N	Good	5 % Chrysotile 3 % Chrysotile (Duplicate)	See note (2)	Present only in a portion of room. Duplicate D1 collected.
ACM 10	Floor tile, 30x30 cm, green	SB-1A	--	N	Good	ND	--	
ACM 11	Pipe insulation, brown, wool-like	SB Hall	--	Y	Damaged	ND	--	Similar material observed at numerous wall cavities throughout building.
ACM 12	Ceiling plaster, white, cementitious, thin topcoat only	SB-7	--	Y	Damaged	ND	--	Small damaged area.
ACM 13	Fabric, ceiling light fixture	SB-7	2	N	Good	80 % Chrysotile	0.03 m ²	20 cm dia.
ACM 14	Pipe wrap insulation, corrugated, paper-type	SB-7	3	Y	Good	10 % Chrysotile	15 linear metres	10 cm dia. drain water pipe.
ACM 15	Insulating pipe cement, joint, white, cementitious	SB-7	4	Y	Good	70 % Chrysotile	See note (3)	
ACM 16	Tank insulation, white cementitious	SB-1	--	Y	Damaged	ND	--	Condensate tank. Measures 1.8 m x 0.9 m dia.
ACM 17	Pipe wrap insulation	SB-1	--	Y	Good	ND	--	
ACM 18	Insulating pipe cement elbow, white, cementitious	SB-1	5	Y	Good	75 % Chrysotile	See note (3)	
ACM 19	Pipe wrap insulation, white, fibrous	SB-1	6	Y	Poor	20 % Amosite	40 linear meters	Located on overhead, 300 mm dia. steam header pipe. Small damaged portion.
ACM 20	Pipe wrap insulation	B-26	--	Y	Good	ND	--	
ACM 21	Insulating pipe cement elbow, white cementitious	B-26	--	Y	Good	ND	--	
ACM 22	Tank insulation, white, cementitious	B-26	7	Y	Good	10 % Chrysotile, 30 % Amosite	13.6 m ² total	Two tanks (same material) measuring 2.2 m x 0.8 m dia.
ACM 23	Floor tile, 23x23 cm, brown with dark brown	1-4	--	N	Good	12 % Chrysotile	See note (2)	
ACM 24	Insulating pipe wrap	1-4	--	Y	Good	ND	--	Located behind metal heater cover
ACM 25	Insulating pipe cement elbow, white cementitious	1-4	8	Y	Good	75 % Chrysotile	See note (3)	Qty: 2 per heater

TABLE C-1 Cont'd
Summary of ACM Survey
Agriculture and Agri-Foods Canada Building 25, Mount Pearl, NL

Sample #	Material Description	Location Room #	Photo #	Friable Y/N	Condition Good/Fair/poor/damaged	Asbestos Result Percent & Type	Estimated Quantity	Comment
ACM 26	Concrete, underside of roof	1-4	--	N	Poor	ND	--	Somewhat damaged and chipped.
ACM 27	Floor tile, 23x23 cm, beige with green	1-7	--	N	Good	8 % Chrysotile	See note (2)	
ACM 28	Floor tile, 23x23 cm, white with brown	1-5	--	N	Good	3 % Chrysotile	See note (2)	
ACM 29	Ceiling tile, suspended, grey	1-5	--	Y	Good	ND	--	
ACM 30	Insulating pipe cement, paste on ends of wrap	1-10	9	Y	Good	80 % Chrysotile	See note (3)	Located behind metal heater cover. Elbow cement was removed here.
ACM 31	Tarry material, black	1-10	--	N	Good	ND	--	Located around piping and styrofoam of exterior wall.
ACM 32	Wall plaster, 2 layers white cementitious and grey granular	1-17	--	Y	Good	Trace Chrysotile	--	30 cm thick. Red brick behind plaster.
ACM 33	Brick mortar, exterior	Exterior	--	N	Good	ND	--	
ACM 34	Concrete, exterior, with white aggregate	Exterior	--	N	Good	ND	--	Exterior window sills and columns.
ACM 35	Concrete, wall	SB-6	--	N	Poor	ND	--	Small damaged portion
ACM 36	Dust, white, storage room floor	B-25	--	Y	Poor	Trace Actinolite	--	Likely originated from overhead pipe insulation
ACM 37	Tar paper, duct	B-25	10	N	Good	8 % Chrysotile 10 % Chrysotile (Duplicate)	6.25 m ² total	Two similar ducts Duplicate D-2 collected.
ACM 38	Insulating pipe cement, paste on ends of wrap	SB-1	11	Y	Good	75 % Chrysotile	See note (3)	Cement paste on ends of valve insulation which appears to be fiberglass.
ACM 39	Ceiling plaster, grey granular, with wire mesh	1-16	12,13	Y (1)	Damaged	2 % Chrysotile Trace Chrysotile (duplicate)	See note (4)	Duplicate D-3 collected.
ACM 40	Ceiling plaster, white cementitious (thin top coat)	1-16	--	Y	Damaged	ND ND (Duplicate)	--	Duplicate D-4 collected.
ACM 41	Gypsum board, white	1-16	--	N	Damaged	ND	--	
ACM 42	Wall plaster, white cementitious and grey granular	1-20	--	Y	Poor	ND	--	Small damaged area near pencil sharpener.
ACM 43	Insulation on overhead duct work	SB-1	--	Y	Good	ND	--	
ACM 44	Terrazzo flooring	Stairwell #2	--	N	Good	Trace Chrysotile	--	
ACM 45	Wall plaster, with wire mesh	SB-1	14	Y (1)	Damaged	2 % Chrysotile	See note (4)	
ACM 46	Cement, ceramic wall tile	B-19	--	N	Good	ND	--	
ACM 47	Ceiling plaster, walk-in freezer, with wire mesh	B-21	15	Y	Damaged	ND	--	

TABLE C-1 Cont'd
Summary of ACM Survey
Agriculture and Agri-Foods Canada Building 25, Mount Pearl, NL

Sample #	Material Description	Location Room #	Photo #	Friable Y/N	Condition Good/Fair/poor/damaged	Asbestos Result Percent & Type	Estimated Quantity	Comment
ACM 48	Wallboard, interior of fume hood	1-17	16	N	Good	25 % Chrysotile	15 m ² total	Three fume hoods on first floor contain asbestos wallboard.
ACM 49	Insulating pipe cement elbow, white cementitious	B-25	17	Y	Good	75 % Chrysotile	See note (3)	
ACM 50	Wall plaster, grey granular	SB-1A	18	Y (1)	Good	3 % Chrysotile	See note (4)	
ACM 51	Wall plaster, white cementitious and grey granular	B Level Hall	19	Y (1)	Fair	5 % Chrysotile	See note (4)	
ACM 52	Window caulking, white	B-10	--	N	Good	ND	--	

NOTES:

2. Although wall and ceiling plaster are considered non-friable in-situ, these plasters become friable during demolition, cutting or abrasion. As a result, wall and ceiling plasters should be treated as friable materials.
3. Total estimated quantity of 23 x 23 cm ACM floor tile throughout building is 570 m² (See Figures 2, 3 & 4 in Appendix A for locations).
4. Total number of insulating ACM cement pipe fittings (elbows, joints, pipe wrap ends) throughout building has been estimated at 560 (See Figures 2, 3 & 4 in Appendix A for general locations).
5. Total estimated quantity of ACM plaster walls and ceilings throughout building is 4000 m² (See Figures 2, 3 & 4 in Appendix A for general locations).

"ND" denotes no asbestos fibres detected.

"Trace" denotes asbestos fibre(s) detected, however below 1%.

Shaded cells denote "asbestos containing material".



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 Project: AC Bldg 25 Hazmat
 Fax #: 709-722-7353
 Page: 1 of 10

Re: Polarized Light Microscopy Results

Lab Sample Number/Type	Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %					%	
			Chrysotile	Amosite	Other Asbestos Fibres	Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	Nonfibrous Material			
2006B-Homogeneous	01127 ACM-01		---	---	---	2	---	---	---	1	---	---	---	97
2006B-Homogeneous	01128 ACM-02		5	---	---	1	---	---	---	3	---	---	---	91
2006B-Homogeneous	01129 ACM-03		trace	---	---	2	---	---	---	3	---	---	---	95
2006B-Homogeneous	01130 ACM-04		8	---	---	1	---	---	---	2	---	---	---	89
2006B-Homogeneous	01131 ACM-05		---	---	---	2	---	---	---	3	---	---	---	95

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Lab Sample Number/Type	Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %					%	
			Chrysotile	Amosite	Other Asbestos Fibres	Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	Nonfibrous Material			
2006B-Homogeneous	01132 ACM-06		3	---	---	---	2	---	---	---	5	---	---	90
2006B-Homogeneous	01133 ACM-07		8	---	---	---	1	---	---	---	5	---	---	86
2006B-Homogeneous	01134 ACM-08		12	---	---	---	1	---	---	---	2	---	---	85
2006B-Homogeneous	01135 ACM-09		5	---	---	---	2	---	---	---	2	---	---	91
2006B-Homogeneous	01136 ACM-10		---	---	---	---	1	---	---	---	3	---	---	96

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Lab Sample Number/Type	Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %					%
			Chrysotile	Amosite	Other Asbestos Fibres	Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	Nonfibrous Material		
2006B- Homogeneous 01137	ACM-11		---	---	---	8	---	---	---	---	90	---	2
2006B- Homogeneous 01138	ACM-12		---	---	---	1	---	---	---	---	1	---	98
2006B- 2 Layer 01139	ACM-13		80	---	---	5	---	---	---	---	---	---	15
2006B- M.Layer 01140	ACM-14		10	---	---	75	---	---	---	---	10	---	5
2006B- 2 Layer 01141	ACM-15		70	---	---	5	---	---	---	---	15	---	10

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	Lab Sample Number/Type	Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %					%
				Chrysotile	Amosite	Other Asbestos Fibres	Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	Nonfibrous Material		
2006B- Homogeneous	01142	ACM-16		---	---	---	15	25	---	---	5	5	55	
2006B- 3 Layer	01143	ACM-17		---	---	---	10	75	---	---	10	5	5	
2006B- 2 Layer	01144	ACM-18		75	---	---	5	---	---	---	10	10	10	
2006B- 3 Layer	01145	ACM-19		---	20	---	30	---	---	---	10	40	40	
2006B- 3 Layer	01146	ACM-20		---	---	---	10	70	---	---	15	5	5	

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Lab Sample Number/Type	Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %					%
			Chrysotile	Amosite	Other Asbestos Fibres	Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	Nonfibrous Material		
2006B- Homogeneous 01147	ACM-21		---	---	---	15	25	---	---	5	5	55	
2006B- 2 Layer 01148	ACM-22		10	30	---	25	5	---	---	5	5	25	
2006B- Homogeneous 01149	ACM-23		12	---	---	1	---	---	---	1	86		
2006B- 3 Layer 01150	ACM-24		---	---	---	5	75	---	---	15	5		
2006B- 2 Layer 01151	ACM-25		75	---	---	3	---	---	---	10	12		

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Re: Polarized Light Microscopy Results

Lab Sample Number/Type	Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %					%	
			Chrysotile	Amosite	Other Asbestos Fibres	Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	Nonfibrous Material			
2006B-Homogeneous	01152 ACM-26		---	---	---	1	---	---	---	---	2	---	---	97
2006B-Homogeneous	01153 ACM-27		8	---	---	1	---	---	---	---	1	---	---	90
2006B-Homogeneous	01154 ACM-28		3	---	---	1	---	---	---	---	1	---	---	95
2006B-Homogeneous	01155 ACM-29		---	---	---	---	95	---	---	---	---	---	---	5
2006B-Homogeneous	01156 ACM-30		80	---	---	3	2	---	---	---	---	---	---	15

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Re: Polarized Light Microscopy Results

	Lab		Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %					%	
	Sample Number/Type	Sample			Chrysotile	Amosite	Other Asbestos Fibres	Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	Nonfibrous Material			
2006B-Homogeneous	01157	ACM-31			---	---	---	---	---	---	---	---	---	---	1	99
2006B-Homogeneous	01158	ACM-32			trace	---	---	---	---	---	1	---	---	---	2	97
2006B-Homogeneous	01159	ACM-33			---	---	---	---	---	---	2	---	---	---	3	95
2006B-Homogeneous	01160	ACM-34			---	---	---	---	---	---	1	---	---	---	2	97
2006B-Homogeneous	01161	ACM-35			---	---	---	---	---	---	1	---	---	---	1	98

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Re: Polarized Light Microscopy Results

Lab Sample Number/Type	Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %						
			Chrysotile	Amosite	Other Asbestos Fibres	actinolite trace		Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	Nonfibrous Material	
2006B-Homogeneous	01162 ACM-36		---	---	---	---	25	5	---	5	---	5	---	65
2006B-Homogeneous	01163 ACM-37		8	---	---	---	10	---	25	5	---	5	---	52
2006B-Homogeneous	01164 ACM-38		75	---	---	---	5	---	---	10	---	10	---	10
2006B-Homogeneous	01165 ACM-39		2	---	---	---	1	---	---	2	---	2	---	95
2006B-Homogeneous	01166 ACM-40		---	---	---	---	---	---	---	1	---	1	---	99

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Re: Polarized Light Microscopy Results

Lab Sample Number/Type	Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %					Nonfibrous Material	
			Chrysotile	Amosite	Other Asbestos Fibres	Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	%			
2006B-Homogeneous 01167	ACM-41		---	---	---	---	25	---	---	---	5	---	---	70
2006B-Homogeneous 01168	ACM-42		---	---	---	---	20	---	---	---	8	---	---	72
2006B-Homogeneous 01169	ACM-D1		3	---	---	---	1	---	---	---	1	---	---	95
2006B-Homogeneous 01170	ACM-D2		10	---	---	---	5	---	25	---	5	---	---	55
2006B-Homogeneous 01171	ACM-D3		trace	---	---	---	3	1	---	---	2	---	---	94
2006B-Homogeneous 01172	ACM-D4		---	---	---	---	1	---	---	---	2	---	---	97

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Page: 10 of 10

Re: Polarized Light Microscopy Results:

Bulk samples were analyzed using Polarized Light Microscopy and dispersion staining techniques. The analytical procedures are in accordance with NIOSH Method 9002.

The % composition of the asbestos forms and other materials identified are the subjective visual judgement of the analyst based on specialized training, experience and comparison to standard area projections. The limit of detection is <1% asbestos and the sample range is from 1 to 100% asbestos. Due to the subjectivity of the Method, the quoted % of asbestos detected is an estimate and no responsibility is assumed to the manner in which the results are used or interpreted.

Separate components (eg. layers) are described separately and are combined in proportion to their abundance with a single analysis provided for the sample.

Analyst _____
Authorized Signature _____

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 File#: JB06-207
 W.O.#: TF61076144
 Project: PWGSC, Bldg 25 Hazmat
 Fax #: 709-722-7353
 Page: 1 of 3

Re: Polarized Light Microscopy Results

	Lab		Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %					
	Sample Number/Type	Sample Number			Chrysotile	Amosite	Other Asbestos Fibres	Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	Nonfibrous Material		
2006B- 2 Layer	01174	ACM 43			---	---	---	---	85	---	---	---	10	---	5
2006B- Homogeneous	01175	ACM 44			trace	---	---	---	3	---	---	---	2	---	95
2006B- 2 Layer	01176	ACM 45			2	---	---	---	1	---	---	---	2	---	95
2006B- 2 Layer	01177	ACM 46			---	---	---	---	2	---	---	---	8	---	90
2006B- Homogeneous	01178	ACM 47			---	---	---	---	2	---	---	---	3	---	95

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Re: Polarized Light Microscopy Results

Lab Sample Number/Type	Client Sample Number/Description	Sample Location	ASBESTOS FIBRES %					NON-ASBESTOS FIBRES %						
			Chrysotile	Amosite	Other Asbestos Fibres	Cellulose	Mineral Wool	Fibrous Glass	Non-Asbestos Fibres	Other	Nonfibrous Material			
2006B-Homogeneous 01179	ACM 48		25	---	---	1	---	---	---	---	1	---	---	73
2006B-Homogeneous 01180	ACM 49		75	---	---	3	---	---	---	---	15	---	---	7
2006B-Homogeneous 01181	ACM 50		3	---	---	1	---	---	---	---	1	---	---	95
2006B-Homogeneous 01182	ACM 51		5	---	---	2	---	---	---	---	3	---	---	90
2006B-Homogeneous 01183	ACM 52		---	---	---	2	---	---	---	---	1	---	---	97

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Attn.: John Kirilow

Date: December 15, 2006
File#: JB06-207
W.O.#: TF61076144
Project: PWGSC, Bldg 25 Hazmat
Fax #: 709-722-7353
Page: 3 of 3

Re: Polarized Light Microscopy Results:

Bulk samples were analyzed using Polarized Light Microscopy and dispersion staining techniques. The analytical procedures are in accordance with NIOSH Method 9002.

The % composition of the asbestos forms and other materials identified are the subjective visual judgement of the analyst based on specialized training, experience and comparison to standard area projections. The limit of detection is <1% asbestos and the sample range is from 1 to 100% asbestos. Due to the subjectivity of the Method, the quoted % of asbestos detected is an estimate and no responsibility is assumed to the manner in which the results are used or interpreted.

Separate components (eg. layers) are described separately and are combined in proportion to their abundance with a single analysis provided for the sample.

Analyst _____

Authorized Signature _____

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APPENDIX D

ASBESTOS BACKGROUND INFORMATION

Asbestos

The disturbance of ACMs is governed by guidelines and codes of practice contained in the Newfoundland and Labrador *Asbestos Abatement Regulations* (Nfld. Reg. 111/98) and the federal Public Works and Government Services Canada (PWGSC) Departmental Policy (i.e. DP:057). ACMs must be removed prior to any demolition or renovation that may potentially disturb the asbestos materials.

Asbestos is a family of naturally occurring fibrous silicates from two mineralogical groups:

- Serpentine, which include chrysotile (white asbestos). These fibres are pliable, curly and made of tiny individual fibrils. They are spiral in shape.
- Amphiboles, which include amosite (brown asbestos) and crocidolite (blue asbestos). These fibres are straight and needle like.

The qualities of asbestos that promoted its use in construction are as follows:

- Fire
- Tensile strength
- Durability
- Flexibility
- Resistance to heat, wear, corrosion

Asbestos is typically found in plaster, mechanical insulation, gaskets, thermal insulation on pipes, refractory material, roofing felts, floor tiles, ceiling tiles and parging, heat resistant panels, incandescent light fixture reflector plates, and any other material requiring a high degree of durability or thermal resistance. The common use of potential friable (breakable by hand) ACMs in construction ceased voluntarily in the mid 1970s; however, the spray application of asbestos-containing fireproofing was not prohibited until 1986.

Asbestos has many building applications, which include:

- Effective insulator against heat, cold, electricity and noise.
- Used as sprayed insulation and fireproofing materials in the period following the Second World War until the mid 1970s.
- Used as a thermal insulator in pipes, boilers and incandescent light reflectors.
- Structural steelwork fireproofing of high-rise buildings.
- Acoustical and decorative purposes in ceiling tiles and building walls.
- Durability in floor tiles, wall board, roof shingles and felts, gaskets, caulking, wall and ceiling plasters.

Asbestos is a health hazard only if it can get into the body through:

- Inhalation.
- Ingestion.
- Absorption.

The primary health related concern of the above list is asbestos inhalation. Respiratory diseases such as asbestosis (lung scarring) and cancers have been clinically linked to prolonged and heavy occupational exposure to airborne asbestos.

Health related concerns prompted the Ontario Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario (1981) to study and report on health effects of asbestos in buildings in the early 1980's. The conclusions of the Royal Commission report (Chapter 9) were that (Bold added to section to emphasize critical conclusions of the Royal Commission Report):

“The exposure of building occupants to asbestos fibres during normal building use is insignificant, whether as compared to the exposure of insulation workers in the past or as compared to the much lower exposures permitted by the Ontario workplace control limits. Studies of asbestos concentrations in building air have shown that many buildings containing asbestos insulation do not exhibit fibre levels exceeding those in the outdoor air or in buildings not insulated with asbestos. Even when building exhibits elevated asbestos fibre levels, these are still very low compared to current workplace control limits and are orders of magnitude below the levels to which workers were exposed in the past.”

“We will conclude that it is rarely necessary to take corrective action in buildings containing asbestos insulation in order to protect the general occupants of the buildings. **On the other hand, construction, demolition, renovation, maintenance and custodial workers in asbestos-containing buildings may be exposed to significant asbestos fibre levels and may, during their work, cause elevated fibre levels for nearby occupants. THE PROBLEM OF PROTECTING THESE WORKERS, AND OF PROTECTING OCCUPANTS FROM POSSIBLE FIBRE RELEASE AS A RESULT OF BUILDING WORK, IS THE REAL CHALLENGE THAT ASBESTOS INSULATION IN BUILDING PRESENTS.**”

Asbestos waste should be disposed of in a double sealed container, properly labeled and free of cuts, tears or punctures. The waste must be disposed of in a licensed waste facility, which has been properly notified of the presence of asbestos waste.

The transport of asbestos waste to the disposal site is covered by the federal “Transportation of Dangerous Goods Act”. Asbestos waste is to be handled by a licensed waste hauler.

APPENDIX 2

**CONTRACTOR NOTIFICATION, ACKNOWLEDGEMENT FORM
AND
ASBESTOS WORK RECORD**



CONTRACTOR NOTIFICATION AND ACKNOWLEDGEMENT NOTIFICATION ET CONSENTEMENT DE L'ENTREPRENEUR

Working with asbestos can be dangerous unless appropriate work practices and personal protective equipment are utilized. Inhaling asbestos fibres can cause various types of lung disease including cancer. Smoking increases the risk of lung cancer from asbestos exposure.

Le travail de l'amiante présente des dangers pour la santé des travailleurs, à moins que ceux-ci utilisent des méthodes de travail et un équipement de protection individuelle appropriés. L'inhalation de fibres d'amiante peut causer diverses maladies pulmonaires, dont le cancer du poumon. Le tabagisme aggrave le risque d'être atteint d'un cancer du poumon par suite d'une exposition à l'amiante.

PWGSC has identified the presence of various friable and nonfriable asbestos containing materials at:

TPSGC a décelé la présence de divers matériaux friables et non friables contenant de l'amiante à l'endroit suivant :

Address - Adresse

An asbestos inventory report showing the locations and amounts of these materials is available for viewing from:

On peut prendre connaissance d'un relevé indiquant les emplacements et les quantités de matériaux contenant de l'amiante auprès de :

Name - Nom	Location - Lieu	Telephone no. N° du téléphone

The PWGSC Asbestos Management Code of Practice applies to all maintenance and renovation work that may disturb asbestos materials. The disturbance of asbestos building materials may only be undertaken by contractors who have received training in asbestos-related precautions.

Le code de pratique de gestion de l'amiante de TPSGC s'applique à tous les travaux d'entretien ou de rénovation susceptibles d'exposer les travailleurs à des matériaux contenant de l'amiante. Seuls les entrepreneurs qui ont reçu une formation sur les précautions à prendre face à l'amiante peuvent être autorisés à entreprendre des travaux comportant une exposition à des matériaux contenant de l'amiante.

As a condition of our contract to provide services and materials to PWGSC, this company will not disturb asbestos-containing materials without prior notification to:

Aux termes du contrat de fourniture de services et de matériaux conclu entre TPSGC et l'entreprise soussignée, cette dernière s'est engagée à ne pas entreprendre de travaux entraînant une exposition à l'amiante sans en informer d'abord :

Name - Nom	Location - Lieu	Telephone no. N° du téléphone

This firm and the employees of this firm will follow all procedures as specified by the PWGSC Asbestos Management Code of Practice, while working in:

L'entreprise et son personnel sont tenus de respecter toutes les procédures prescrites par le Code de pratique de gestion de l'amiante de TPSGC, pendant toute la durée des travaux effectués à l'endroit suivant :

Address - Adresse

Company name - Nom de la compagnie		
Name - Nom	Title - Titre	
Signature	Date	



ASBESTOS-RELATED WORK RECORD FICHE DE TRAVAIL - TRAVAUX COMPORTANT UNE EXPOSITION À L'AMIANTE

Room - Pièce	Description of work - Description du travail	
Date work requested Date de la demande d'exécution des travaux		
Manager in Charge of Worksite or Supervisor Chef de chantier ou surveillant		
Classification of work - Type de travaux <input type="checkbox"/> Type 2 Ceiling Entry Type 2 - Accès au vide de plafond		
<input type="checkbox"/> Type 2 Asbestos Clean-up Type 2 - Nettoyage d'amiante		
<input type="checkbox"/> Type 2 Repair Type 2 - Réparation		
<input type="checkbox"/> Type 2 Insulation Removal Type 2 - Enlèvement de matériaux isolants		
<input type="checkbox"/> Type 3 Removal Type 3 - Enlèvement d'amiante		
Start (date and time) - Début (date et heure)	Completion (date and time) - Fin (date et heure)	
Department (indicate PWGSC or if a Contractor indicate Company Name) Ministère (TPSGC ou, dans le cas de travaux confiés à un entrepreneur, raison sociale de l'entreprise)		Person in Charge - Personne responsable
Asbestos workers (Indicate all names in full. Please print) Travailleurs affectés au travail de l'amiante (inscrire leur nom au long en lettres moulées)		

Asbestos work record to be initiated by Manager in Charge of the Worksite or Supervisor.

Il incombe au chef du chantier ou au surveillant de voir à faire remplir la fiche de travail concernant des travaux comportant une exposition à l'amiante.

To be completed by the Person in Charge and submitted to the Manager in Charge of the Worksite or Supervisor, upon completion of the work.

Le contremaître remplit la fiche de travail et la remet au chef de chantier ou au surveillant à la fin des travaux.

A copy of this record shall be placed on each employee's employment file and a copy shall be forwarded to the Regional Asbestos Co-ordinator.

Un exemplaire de la fiche est versé au dossier de chaque employé et un exemplaire est transmis au coordonnateur régional des travaux d'amiante.

A separate record must be prepared for each Type 2 or Type 3 Work Order or Project.

Une fiche distincte doit être établie pour chaque demande d'exécution de travaux ou chaque projet de type 2 et de type 3.

APPENDIX 3

EXCERPTS FROM PWGSC AMP

**NOTE: Excerpts taken from the Public Works Government Services Canada document
DP 057 - Asbestos Management, 1997-12-03**

Annex C - Appendix 1 - Evaluation of Asbestos Containing Materials (ACM) and Recommendations for Control

1. Assessment of Condition

Spray Applied Fireproofing, Insulation and Texture Finishes

In evaluating the condition of ACM spray applied as fireproofing, thermal insulation or texture, decorative or acoustic finishes, the following criteria apply:

GOOD	Surface of material shows no significant signs of damage, deterioration or delamination. Up to one percent visible damage to surface is allowed within range of GOOD. Evaluation of sprayed fireproofing requires the surveyor to be familiar with the irregular surface texture typical of sprayed asbestos products. GOOD condition includes unencapsulated or unpainted fireproofing or texture finishes, where no delamination or damage is observed, and encapsulated fireproofing or texture finishes where the encapsulation has been applied after the damage or fallout occurred.
POOR	Sprayed materials show signs of damage, delamination or deterioration. More than one percent damage to surface of ACM spray.

In observation areas, where damage exists in isolated locations, both GOOD and POOR condition may be reported. The extent or percentage of each condition will be recorded on the survey or reassessment form.

NOTE: FAIR condition is not utilized or considered as a valid criterion in the evaluation of sprayed fireproofing, sprayed insulation, or texture coat finishes.

The evaluation of ACM spray applied as fireproofing, non-mechanical thermal insulation, or texture, decorative or acoustic finishes which are present above ceilings, may be limited by the number of observations made, and by building components such as ducts or full height walls that obstruct the above ceiling observations. Persons entering the ceiling area are advised to be watchful for ACM DEBRIS prior to accessing or working above ceilings in areas of buildings with ACM, regardless of the reported condition.

Mechanical Insulation

In evaluating the condition of mechanical insulation (on boilers, breeching, ductwork, piping, tanks, equipment etc.) the following criteria are used:

GOOD	Insulation is completely covered in jacketing and exhibits no evidence of damage or deterioration. No insulation is exposed. Includes conditions where the jacketing has minor surface damage (i.e., scuffs or stains), but the jacketing is not penetrated.
FAIR	Minor penetration damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination) or undamaged insulation that has never been jacketed. Insulation is exposed but not showing surface disintegration. The extent of missing insulation ranges should be minor to none.
POOR	Original insulation jacket is missing, damaged, deteriorated or delaminated. Insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired.

The evaluation of mechanical insulation may be limited by the number of observations made and building components such as ducts or full height walls that obstruct observations. In these circumstances, it is not possible to observe each foot of mechanical insulation from all angles.

Non-Friable and Potentially Friable Materials

Non-friable materials generally have little potential to release airborne fibres, even when damaged by mechanical breakage. However, some non-friable materials, i.e., exterior asbestos cement products, may have deteriorated so that the binder no longer effectively contains the asbestos fibres. In such cases of significantly deteriorated non-friable material, the material will be treated as a friable product.

2. Evaluation of Accessibility

The accessibility of building materials known or suspected of being ACM is rated according to the following criteria:

ACCESS (A)	Areas of the building within reach (from floor level) of all building users. Includes areas such as gymnasiums, workshops, and storage areas where activities of the building users may result in disturbance of ACM not normally within reach from floor level.
ACCESS (B)	Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder. Includes: frequently entered pipe chases, tunnels and service areas or areas within reach from a fixed ladder or catwalk, i.e., tops of equipment, mezzanines.
ACCESS (C) EXPOSED	Areas of the building above 8'0" where use of a ladder is required to reach the ACM. Only refers to ACM materials that are exposed to view, from the floor or ladder, without removing or opening other building components such as ceiling tiles, or service access doors or hatches. Does not include infrequently accessed service areas of the building.
ACCESS (C) CONCEALED	Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems. Includes rarely entered crawl spaces, attic spaces, etc. Observations are limited to the extent visible from the access points.
ACCESS (D)	Areas of the building behind inaccessible solid ceiling systems, walls, or mechanical equipment, etc., where demolition of the ceiling, wall or equipment, etc., is required to reach the ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the surveyor's ability to visually examine the materials in Access D.

3. ACM Debris

Debris from Friable ACM

The presence of fallen ACM is noted separately from the presumed friable ACM source (sprayed fireproofing, thermal insulation, texture, decorative or acoustic finishes or mechanical insulation) and is referred to as DEBRIS.

Debris from Damaged Non-Friable ACM

The presence of fallen ACM, from damaged non-friable ACM, is reported separately from the non-friable ACM source. Only fallen non-friable ACM, that has become friable, is reported as DEBRIS.

The identification of the exact location or presence of DEBRIS on the top of ceiling tiles is limited by the number of observations made and the presence of building components such as ducts or full height walls that obstruct observations. Workers are advised to be watchful for the presence of DEBRIS prior to accessing, or working in proximity to, mechanical insulation or above ceiling areas of buildings with ACM, regardless of the reported presence or absence of DEBRIS.

4. Action Matrix and Action Descriptions

The Asbestos Management Program requires the following responses:

- Immediate clean-up of DEBRIS that is likely to be disturbed;
- The removal, repair or enclosure of friable ACM in POOR or FAIR condition where continued deterioration will result in DEBRIS that is likely to be disturbed.

The following factors shall be considered in making site-specific recommendations for compliance with the regulation, and for the practical implementation of asbestos management:

3. ACM in POOR condition is not routinely repairable.

If an abatement action is necessary, removal is the recommended action (enclosure is a viable option in unusual circumstances).

4. Mechanical insulation in FAIR condition will be repaired or removed based on the following general recommendations, applied on a case by case basis.

Repair ACM mechanical insulation found in FAIR condition in ACCESS (B) or ACCESS (C) EXPOSED areas.

Remove ACM mechanical insulation found in FAIR condition in ACCESS (B) and ACCESS (C) EXPOSED areas, where future damage to the ACM is likely to occur.

5. ACM in GOOD condition present in ACCESS (A) can be managed by surveillance, as long as it is not disturbed by future renovation, maintenance or demolition. Proactive removal of the ACM in ACCESS (A) will be considered where damage is possible by ongoing occupant activity (accidental or intentional).
6. Non-friable or manufactured products are considered in the action matrix as follows:
 - Non-friable and manufactured products reported in POOR condition, or friable DEBRIS resulting from the deterioration of non-friable ACM, are treated as friable materials and the appropriate Action, depending on accessibility, is determined from the Action Matrix for friable ACM.
 - For non-friable or manufactured products reported in GOOD condition, Action 7 (surveillance) is recommended regardless of Accessibility.
7. Remove all ACM from a particular area where small quantities of asbestos are present and removal will negate the need for the use of the Asbestos Management Program in that area.

The Action Matrix provided below establishes the recommended asbestos control action. The ACTIONS are described in full following the matrix.

ACTION MATRIX TABLE				
FRIABLE ACM				
ACCESS	CONDITION			DEBRIS
	GOOD	FAIR	POOR	
(A)	ACTION 5/7 ¹	ACTION 5/6 ²	ACTION 3	ACTION 1
(B)	ACTION 7	ACTION 6/5 ³	ACTION 3	ACTION 1
(C) exposed	ACTION 7	ACTION 6	ACTION 4	ACTION 2
(C) concealed	ACTION 7	ACTION 7	ACTION 4	ACTION 2
(D)	ACTION 7	ACTION 7	ACTION 7	ACTION 7

¹If material in **ACCESS (A)/GOOD** condition is not removed **ACTION 7** is required.

²If material in **ACCESS (A)/FAIR** condition is not removed **ACTION 6** is required.

³Remove **ACM** in **ACCESS (B)/FAIR** condition if **ACM** is likely to be disturbed.

ACTION 1	Immediate Clean-up of Debris That is Likely to be Disturbed
	Restrict access that is likely to cause a disturbance of the ACM DEBRIS and clean up ACM DEBRIS immediately. Utilize correct asbestos procedures. This action is required for compliance with regulatory requirements. The surveyor should immediately notify the Regional Asbestos Coordinator of this condition.
ACTION 2	Entry Into Areas With ACM Debris - Type 2 Precautions
	At locations where ACM DEBRIS can be isolated in lieu of removal or cleaned up, use appropriate means to limit entry to the area. Restrict access to the area to persons utilizing Type 2 asbestos-work precautions. The precautions will be required until the ACM DEBRIS has been cleaned up, and the source of the DEBRIS has been stabilized or removed.
ACTION 3	ACM Removal Required for Compliance
	Remove ACM for compliance with regulatory requirements. Utilize asbestos procedures appropriate to the scope of the removal work.
ACTION 4	Access into Areas Where ACM is Present and Likely to be Disturbed by Access - Type 2 Precautions
	Use Type 2 asbestos precautions when entry or access into an area is likely to disturb the ACM. ACTION 4 must be used until the ACM is removed (Use ACTION 1 or 2 if DEBRIS is present).
ACTION 5	Proactive ACM Removal
	Remove ACM in lieu of repair, or at locations where the presence of asbestos in GOOD condition is not desirable.
ACTION 6	ACM Repair

Repair ACM found in FAIR condition, and not likely to be damaged again or disturbed by normal use of the area or room. Upon completion of the repair work, treat ACM as material in GOOD condition and implement ACTION 7. If ACM is likely to be damaged or disturbed, during normal use of the area or room, implement ACTION 5.

ACTION 7 Routine Surveillance

Institute routine surveillance of the ACM. Trained workers or contractors must use appropriate asbestos precautions (Type 1, Type 2 or Type 3) during disturbance of the remaining ACM.

5. Assessment of Condition

Spray Applied Fireproofing, Insulation and Texture Finishes

In evaluating the condition of ACM spray applied as fireproofing, thermal insulation or texture, decorative or acoustic finishes, the following criteria apply:

GOOD Surface of material shows no significant signs of damage, deterioration or delamination. Up to one percent visible damage to surface is allowed within range of GOOD. Evaluation of sprayed fireproofing requires the surveyor to be familiar with the irregular surface texture typical of sprayed asbestos products. GOOD condition includes unencapsulated or unpainted fireproofing or texture finishes, where no delamination or damage is observed, and encapsulated fireproofing or texture finishes where the encapsulation has been applied after the damage or fallout occurred.

POOR Sprayed materials show signs of damage, delamination or deterioration. More than one percent damage to surface of ACM spray.

In observation areas, where damage exists in isolated locations, both GOOD and POOR condition may be reported. The extent or percentage of each condition will be recorded on the survey or reassessment form.

NOTE: FAIR condition is not utilized or considered as a valid criterion in the evaluation of sprayed fireproofing, sprayed insulation, or texture coat finishes.

The evaluation of ACM spray applied as fireproofing, non-mechanical thermal insulation, or texture, decorative or acoustic finishes which are present above ceilings, may be limited by the number of observations made, and by building components such as ducts or full height walls that obstruct the above ceiling observations. Persons entering the ceiling area are advised to be watchful for ACM DEBRIS prior to accessing or working above ceilings in areas of buildings with ACM, regardless of the reported condition.

Mechanical Insulation

In evaluating the condition of mechanical insulation (on boilers, breeching, ductwork, piping, tanks, equipment etc.) the following criteria are used:

GOOD	Insulation is completely covered in jacketing and exhibits no evidence of damage or deterioration. No insulation is exposed. Includes conditions where the jacketing has minor surface damage (i.e., scuffs or stains), but the jacketing is not penetrated.
FAIR	Minor penetration damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination) or undamaged insulation that has never been jacketed. Insulation is exposed but not showing surface disintegration. The extent of missing insulation ranges should be minor to none.
POOR	Original insulation jacket is missing, damaged, deteriorated or delaminated. Insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired.

The evaluation of mechanical insulation may be limited by the number of observations made and building components such as ducts or full height walls that obstruct observations. In these circumstances, it is not possible to observe each foot of mechanical insulation from all angles.

Non-Friable and Potentially Friable Materials

Non-friable materials generally have little potential to release airborne fibres, even when damaged by mechanical breakage. However, some non-friable materials, i.e., exterior asbestos cement products, may have deteriorated so that the binder no longer effectively contains the asbestos fibres. In such cases of significantly deteriorated non-friable material, the material will be treated as a friable product.

6. Evaluation of Accessibility

The accessibility of building materials known or suspected of being ACM is rated according to the following criteria:

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ACCESS (B)	Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder. Includes: frequently entered pipe chases, tunnels and service areas or areas within reach from a fixed ladder or catwalk, i.e., tops of equipment, mezzanines.
ACCESS (C) EXPOSED	Areas of the building above 8'0" where use of a ladder is required to reach the ACM. Only refers to ACM materials that are exposed to view, from the floor or ladder, without removing or opening other building components such as ceiling tiles, or service access doors or hatches. Does not include infrequently accessed service areas of the building.
ACCESS (C) CONCEALED	Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems. Includes rarely entered crawl spaces, attic spaces, etc. Observations are limited to the extent visible from the access points.

ACCESS (D)

Areas of the building behind inaccessible solid ceiling systems, walls, or mechanical equipment, etc., where demolition of the ceiling, wall or equipment, etc., is required to reach the ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the surveyor's ability to visually examine the materials in Access D.

7. ACM Debris

Debris from Friable ACM

The presence of fallen ACM is noted separately from the presumed friable ACM source (sprayed fireproofing, thermal insulation, texture, decorative or acoustic finishes or mechanical insulation) and is referred to as DEBRIS.

Debris from Damaged Non-Friable ACM

The presence of fallen ACM, from damaged non-friable ACM, is reported separately from the non-friable ACM source. Only fallen non-friable ACM, that has become friable, is reported as DEBRIS.

The identification of the exact location or presence of DEBRIS on the top of ceiling tiles is limited by the number of observations made and the presence of building components such as ducts or full height walls that obstruct observations. Workers are advised to be watchful for the presence of DEBRIS prior to accessing, or working in proximity to, mechanical insulation or above ceiling areas of buildings with ACM, regardless of the reported presence or absence of DEBRIS.

8. Action Matrix and Action Descriptions

The Asbestos Management Program requires the following responses:

- Immediate clean-up of DEBRIS that is likely to be disturbed;
- The removal, repair or enclosure of friable ACM in POOR or FAIR condition where continued deterioration will result in DEBRIS that is likely to be disturbed.

The following factors shall be considered in making site-specific recommendations for compliance with the regulation, and for the practical implementation of asbestos management:

3. ACM in POOR condition is not routinely repairable.

If an abatement action is necessary, removal is the recommended action (enclosure is a viable option in unusual circumstances).

4. Mechanical insulation in FAIR condition will be repaired or removed based on the following general recommendations, applied on a case by case basis.

Repair ACM mechanical insulation found in FAIR condition in ACCESS (B) or ACCESS (C) EXPOSED areas.

Remove ACM mechanical insulation found in FAIR condition in ACCESS (B) and

ACCESS (C) EXPOSED areas, where future damage to the ACM is likely to occur.

5. ACM in GOOD condition present in ACCESS (A) can be managed by surveillance, as long as it is not disturbed by future renovation, maintenance or demolition. Proactive removal of the ACM in ACCESS (A) will be considered where damage is possible by ongoing occupant activity (accidental or intentional).
6. Non-friable or manufactured products are considered in the action matrix as follows:
 - Non-friable and manufactured products reported in POOR condition, or friable DEBRIS resulting from the deterioration of non-friable ACM, are treated as friable materials and the appropriate Action, depending on accessibility, is determined from the Action Matrix for friable ACM.
 - For non-friable or manufactured products reported in GOOD condition, Action 7 (surveillance) is recommended regardless of Accessibility.
7. Remove all ACM from a particular area where small quantities of asbestos are present and removal will negate the need for the use of the Asbestos Management Program in that area.

The Action Matrix provided below establishes the recommended asbestos control action. The ACTIONS are described in full following the matrix.

ACTION MATRIX TABLE				
FRIABLE ACM				
ACCESS	CONDITION			DEBRIS
	GOOD	FAIR	POOR	
(A)	ACTION 5/7 ¹	ACTION 5/6 ²	ACTION 3	ACTION 1
(B)	ACTION 7	ACTION 6/5 ³	ACTION 3	ACTION 1
(C) exposed	ACTION 7	ACTION 6	ACTION 4	ACTION 2
(C) concealed	ACTION 7	ACTION 7	ACTION 4	ACTION 2
(D)	ACTION 7	ACTION 7	ACTION 7	ACTION 7

¹If material in **ACCESS (A)/GOOD** condition is not removed **ACTION 7** is required.

²If material in **ACCESS (A)/FAIR** condition is not removed **ACTION 6** is required.

³Remove **ACM** in **ACCESS (B)/FAIR** condition if **ACM** is likely to be disturbed.

ACTION 1 Immediate Clean-up of Debris That is Likely to be Disturbed

Restrict access that is likely to cause a disturbance of the ACM DEBRIS and clean up ACM DEBRIS immediately. Utilize correct asbestos

procedures. This action is required for compliance with regulatory requirements. The surveyor should immediately notify the Regional Asbestos Coordinator of this condition.

ACTION 2 Entry Into Areas With ACM Debris - Type 2 Precautions

At locations where ACM DEBRIS can be isolated in lieu of removal or cleaned up, use appropriate means to limit entry to the area. Restrict access to the area to persons utilizing Type 2 asbestos-work precautions. The precautions will be required until the ACM DEBRIS has been cleaned up, and the source of the DEBRIS has been stabilized or removed.

ACTION 3 ACM Removal Required for Compliance

Remove ACM for compliance with regulatory requirements. Utilize asbestos procedures appropriate to the scope of the removal work.

ACTION 4 Access into Areas Where ACM is Present and Likely to be Disturbed by Access - Type 2 Precautions

Use Type 2 asbestos precautions when entry or access into an area is likely to disturb the ACM. ACTION 4 must be used until the ACM is removed (Use ACTION 1 or 2 if DEBRIS is present).

ACTION 5 Proactive ACM Removal

Remove ACM in lieu of repair, or at locations where the presence of asbestos in GOOD condition is not desirable.

ACTION 6 ACM Repair

Repair ACM found in FAIR condition, and not likely to be damaged again or disturbed by normal use of the area or room. Upon completion of the repair work, treat ACM as material in GOOD condition and implement ACTION 7. If ACM is likely to be damaged or disturbed, during normal use of the area or room, implement ACTION 5.

ACTION 7 Routine Surveillance

Institute routine surveillance of the ACM. Trained workers or contractors must use appropriate asbestos precautions (Type 1, Type 2 or Type 3) during disturbance of the remaining ACM.

9. Detection Limit of Bulk Analysis

Asbestos containing material, (ACM), is defined as any material found to contain asbestos at or above the limit for an asbestos containing material, (ACM), set provincially, as determined by the standard Polarized Light Microscopy method for the analysis of bulk samples. The provincially regulated limits, or generally accepted guidelines, to consider a material as an asbestos containing material, (ACM), subject to asbestos in buildings regulation, is provided as follows:

MINIMUM CONCENTRATION TO CONSIDER AS AN ASBESTOS CONTAINING MATERIAL (BY PROVINCE)	
PROVINCE/REGION	
NEWFOUNDLAND	1.0%
NOVA SCOTIA	
PRINCE EDWARD ISLAND	
NEW BRUNSWICK	
ALBERTA	
BRITISH COLUMBIA	
ONTARIO (includes part of National Capital Region)	0.5%
SASKATCHEWAN (no published concentration)	
QUEBEC (includes part of National Capital Region)	0.1%
MANITOBA	

Annex C - Appendix 5 - Classification of Asbestos-Related Work

The following criteria shall be utilized in determining the classification of asbestos work.

TYPE 1 WORK

- Installation or removal of a non-friable ACM with a hand tool.
- Disturbance of a non-friable ACM with a powered tool equipped with a HEPA dust collection device.
- Removal of drywall materials where joint filling materials contain asbestos.
- Removal or replacement of ten or less asbestos-containing compressed mineral fibre type ceiling tiles.
- Collecting samples of asbestos-suspect friable materials.
- Working close to friable sprayed asbestos, where the material may be affected by the work activities.

TYPE 2 WORK

- Removal or replacement of more than ten asbestos-containing compressed mineral fibre type ceiling tiles.
- Entry into ceiling spaces, crawlspaces, pipe tunnels, etc., where friable asbestos debris is present.
- In British Columbia, removal of drywall installed before 1980.
- Minor removal of friable ACM. Type 2 removal is limited to a maximum per work period of:
 - In British Columbia - 0.1 m² surface area, or 3 lineal metres of pipe insulation;
 - In Quebec - 0.03 m² of Debris;
 - All Others - 1 m² of surface area.
- Repair of asbestos mechanical insulation. (No limit is imposed as to the amount of repair permitted under Type 2 conditions.)

TYPE 3 WORK

- More than minor removal or disturbance of friable ACM.
- Use of a power tool on non-friable ACM without HEPA exhausted dust collection.
- The spray application of an encapsulant or sealer to friable asbestos surfacing materials.

- Disturbance of the ductwork and air handling equipment serving or passing through areas of buildings with sprayed asbestos fireproofing or insulation.
- Repair, alteration or demolition of a boiler, furnace, kiln, or similar equipment with asbestos-containing refractory.



Annex C - Appendix 6 - Work Procedures

TYPE 1 - Work Procedures

For locations of non-friable ACM, refer to the current version of the Asbestos Inventory and Assessment Report.

NOTE: These Type 1 procedures assume the non-friable material can be removed with relatively little loose dry dust released. Generation of debris is permissible as long as the debris can be well wetted before being removed. If the work will release more than a trivial amount of dry loose dust, do not proceed. The Regional Asbestos Coordinator will determine which of Type 1, 2 or 3 procedures are appropriate.

1. Equipment

All equipment must be on site before proceeding.

1. *Vacuum*

Use of a vacuum is optional. Wet cleaning methods may be used in place of a vacuum. If a vacuum is used it must be equipped with a high efficiency particulate (HEPA) filter and all brushes, fittings, etc. The vacuum must only be opened in an enclosure, following Type 2 procedures, or in a laboratory exhaust hood. The vacuum exterior should be carefully wet cleaned after emptying. A HEPA filter is at least 99.97% efficient in collecting a 0.3 micrometre particle.

2. *Respirators*

Use of a respirator is optional for Type 1 work. However, a respirator is strongly advised for work on sheet flooring, any type of ceiling tile, any other work performed overhead. Respirators shall be supplied by the employer upon request. The type of respirator supplied shall be a half-face respirator with HEPA filter. Training in the proper use of the respirator and qualitative fit testing shall also be provided. Respirators must be NIOSH approved and acceptable to the Provincial Authorities having jurisdiction. Respirators shall be used according to the written procedures for use, provided to the worker during training sessions. Filters must be changed after 24 hours of wear, or sooner if breathing resistance increases.

NOTE: Employees are required to undertake a medical evaluation as specified by DP 059 - Health Evaluations - Safety and Health, PWGSC prior to being trained in the proper use of respirators.

3. *Protective Clothing*

Reusable or disposable clothing may be used. Non-disposable clothing with visible asbestos contamination shall be cleaned with a HEPA vacuum and laundered as asbestos contaminated. Disposable clothing and respirator filters will be disposed of as asbestos

waste.

4. *Other Equipment*

- plastic sheet (0.15 mm (6 mil) polyethylene) - to serve as a drop sheet;
- pump sprayer with mister nozzle, or alternate method to wet material;
- labelled, yellow asbestos waste bags, 0.15 mm (6 mil) - for all asbestos waste, disposable equipment, plastic, etc.;
- small tools and cleaning supplies - e.g., scouring pads, sponges, brushes, buckets, etc.

2. **Other Protective Measures**

1. Do not eat, drink or smoke in the work area.
2. On leaving work area, proceed to washroom and wash all exposed skin on hands and face.

3. **Preparation**

1. Before disturbing non-friable asbestos materials, (wherever practical) cover floor and surfaces below work with polyethylene sheeting to catch debris.
2. Wherever dust on a surface is likely to be disturbed, remove with HEPA vacuum or damp cloth.

4. **Execution**

1. Removal of Vinyl Asbestos Floor Tile
 1. Do not use electric powered scrapers.
 2. Start removal by wedging a heavy duty scraper in seam of two adjoining tiles and gradually force edge of one tile up and away from floor. Do not break off pieces of tile, but continue to force balance of tile up.
 3. Continue removal of tiles using hand tools, removing tiles intact wherever possible. When adhesive is spread heavily or is quite hard, it may prove easier to force scraper through tightly adhered areas by striking scraper handle with a hammer using blows of moderate force while maintaining scraper at 25° to 30° angle to floor. When this technique does not loosen tile, removal can be simplified by heating tile thoroughly with a hot air gun until heat penetrates through tile and softens the adhesive.
 4. As each tile is removed, place into asbestos waste receptor. Do not break into smaller pieces.
 5. After removal of a small area, scrape up adhesive remaining on floor with a hand scraper until only a thin smooth film remains. Where deposits are heavy or difficult to scrape, a hot air gun may be used. Deposit scrapings in the asbestos waste disposal bag. Do not dry scrape surface pieces of tile that remain adhered. Do not use powered electric scrapers.
 6. On completion of the area, vacuum clean floor with HEPA vacuum or wet mop. Dispose of the mop head as contaminated waste.
2. Removal of Asbestos-Containing Sheet Flooring
 1. Remove binding strips or other restrictive mouldings. Workers shall wear air purifying respirator fitted with high efficiency filter, and coveralls, at all times.
 2. Make series of cuts 100 mm to 200 mm (4" to 8") apart through top layers and

about halfway through felt backing, parallel to wall.

3. Start at end of room furthest from door and pry up corner of strip, separating top sheet from backing layer. Pull top layer back upon itself slowly and evenly, and half backing and top layers should pull free. After it is removed, roll up strip face out into tight roll, tape or tie securely, and place into asbestos waste receptor. Wet the asbestos felt underlay remaining on floor as soon as exposed.
4. Continue with successive strips. Avoid walking on exposed asbestos felt. Seal asbestos waste receptors when filled. Remove maximum of three strips before wet scraping exposed felt underlay.
5. Remove remaining adhered underlay by wet scraping. Soak area with water applied by sprayer. Allow water to penetrate felt. Scrape off remaining material. Maintain material wet by applying more water. Place scrapings in asbestos waste receptor.
6. Continue this procedure alternately removing top sheets and then wet scraping felt, three strips at a time. Be careful not to walk on stripped floor.
7. When whole floor has been cleaned of asbestos felt, allow it to dry and vacuum up any dirt with a HEPA vacuum or wet mop. Do *not* dry sweep. Dispose of the mop head as contaminated waste.
8. Thoroughly clean tools and equipment with a damp cloth before returning to regular service. Dispose of cloth as contaminated waste.

3. Installing, Cutting or Drilling Non-Friable Asbestos Materials

1. Work using power tools not fitted with HEPA filter dust collectors, must not be performed as Type 1 work.
2. Where possible wet all materials to be disturbed.
3. Immediately place waste in asbestos waste receptor. Clean area frequently during work with HEPA vacuum or by wet methods.
4. At completion of work, drop sheets that will be reused must be cleaned with HEPA vacuum or by wet methods.
5. Drop sheets that will not be reused must be disposed of as asbestos waste.

4. Removal of Other Non-Friable Asbestos Materials

1. Type 1 procedures apply only to materials which can be removed intact, or in sections, without producing a pulverized or powdered waste. This method is most applicable to asbestos-cement board products, acoustic ceiling tiles, gaskets, etc.
2. Where possible wet all material to be disturbed.
3. Undo fasteners necessary to remove material. Whenever possible remove asbestos cement panels intact. Break only if unavoidable. If broken, wet freshly exposed edges.
4. Where sections are adhered to the substrate, wet material and use hand scraping to remove adhering material.
5. Place removed material into asbestos waste receptor. Clean surrounding surfaces and asbestos work area frequently with HEPA vacuum or with wet methods (i.e., damp cloth that is disposed of as asbestos waste after cleaning).
6. Drop sheets shall be disposed of as asbestos waste.

5. Waste Transport and Disposal

1. Place waste into asbestos labelled disposal bag, seal with tape, clean the exterior of the bag with a clean cloth, and place into a second clean bag, also to be sealed with tape. Use a barrel, fibre drum, or cardboard or wooden box in place of the second bag when the asbestos waste material is likely to tear the inner bag. Seal the outer container.

2. Place waste containers in storage area for holding asbestos waste. Containers shall be labelled and assigned exclusively for asbestos waste.
3. Prepare waste for disposal in compliance with provincial regulations. The Property Manager will arrange for disposal.

TYPE 2 - Work Procedures

For locations of asbestos materials, refer to the current version of the Asbestos Inventory and Assessment Report.

1. Equipment

Equipment required for the work must be on-site before proceeding.

1. Vacuum

An asbestos-approved vacuum (HEPA filtered), equipped with brushes, fittings, etc. Vacuum must not be opened except by a fully protected worker within a Type 2 enclosure. The vacuum exterior shall be carefully wet cleaned after emptying. A HEPA filter is at least 99.97% efficient in collecting a 0.3 micrometre particle.

2. Respirators

Workers within the work area shall wear approved respirator. Respirators and filters will be provided by the employer, and individually assigned to workers. Respirator shall be a half-facepiece respirator with high efficiency filters. Respirators must be NIOSH approved and acceptable to the Provincial Authorities having jurisdiction. Respirators shall be kept in position throughout the entire time the worker is in the area of the work, from first disturbance of a ceiling tile or asbestos material, until the final cleaning of the area and bagging of waste is complete. Change filters after 24 hours of wear or sooner if breathing resistance increases.

3. Protective Clothing

All workers shall wear disposable coveralls with attached elasticized hood. Coveralls should be worn with the hood in place at all times. Coveralls may be vacuumed or wet wiped clean for reuse, for a maximum of 8 hours cumulative wear. Suit and head cover shall remain in place until worker leaves work area or the enclosure is dismantled. Boot covers or dedicated boots are recommended.

4. Other Equipment

- plastic sheet (0.15 mm (6 mil) polyethylene) - to erect a total enclosure or to serve as drop sheet;
- wood framing or clips to support polyethylene sheeting, as appropriate to work area;
- tape - to fasten plastic enclosure to ceiling or to tape drop sheet to floor; ¾" double-sided tape recommended for attaching polyethylene to T-bar ceiling;
- labelled asbestos waste bag 0.15 mm (6 mil) - for all asbestos waste, disposable suit, plastic for disposal, etc.;
- pump sprayer containing water with wetting agent to wet asbestos as necessary (dilute wetting agent as per manufacturer's recommendations);
- asbestos warning signs;
- cleaning supplies - e.g., scouring pads, sponges, brushes, buckets, etc.;
- insulation repair supplies (lagging compound, cloth, PVC covers);
- encapsulating sealer, for brush or airless spray application.

2. Other Protective Measures

1. Do not eat, drink or smoke in the work area.
2. On leaving work area, proceed to washroom and wash all exposed skin on hands and face.

3. Scheduling of Work

1. Schedule work when occupants are absent. If persons are present, do not start work.
2. If work above ceiling is required on an emergency basis, and the area is occupied, ensure that client department(s) advise occupants to vacate area until work is complete and clearance is given to return.

4. Preparation

1. Shut down ventilation systems to and from the work area. Seal over all ventilation openings, diffusers, grilles, etc., with plastic and tape.
2. Where practical, clear areas of movable furnishings or equipment. This should include anything that occupants may wish to use during work period. Any furnishings or equipment not removed shall be adequately covered and sealed using 0.15 mm (6 mil) polyethylene and tape. The intent of the protection is to provide an airtight envelope to protect the articles from airborne dust or splashed debris.
3. Post signs or barrier tape, appropriate to the work area, to indicate asbestos hazard and requirement for protective clothing for anyone entering the space.
4. For small rooms, cover walls with plastic such that the complete room becomes the work area. For larger rooms, erect enclosure of 0.15 mm (6 mil) polyethylene, of suitable dimensions to enclose the work area, and scaffolds and ladders required to gain access. If a suspended ceiling is present, the enclosure shall extend to the ceiling line. The enclosure shall be as airtight as conditions permit, and will include the provision of a double overlapping flap at the entrance. The floor of the work area shall be a layer of 0.15 mm (6 mil) polyethylene sealed to the plastic walls of the enclosure.
5. Don protective clothing and respirator prior to removing ceiling tile or disturbing pipe jacketing or sprayed fireproofing.

5. Execution

1. To remove fireproofing or texture plaster, saturate with amended water solution, using a pump sprayer. Do not remove the asbestos material until the material is thoroughly wetted to the substrate. Do not use water where electrical hazard exists.
2. To remove pipe insulation, first wet any area of damage, then carefully cut jacket. Keep insulation surface wetted by mist of water with wetting agent. Remove insulation in large sections and place immediately in disposal bag. After large pieces have been removed, saturate debris on mechanical equipment and clean all exposed surfaces with abrasive pads, sponges, cloths, etc.
3. To repair pipe insulation, use drop sheet under area of work to aid clean-up of any dislodged material. Plastic enclosure is not required. Mist any exposed insulation to wet surface and apply lagging paint and canvas or PVC jacketing as required.
4. For removal of suspended ceiling tiles (where asbestos debris is present on top of tiles or equipment to be accessed), remove the first tile carefully and vacuum all surfaces. Vacuum the upper surface of each subsequent tile prior to removal. Store tiles in the work area.
5. Remove dust and loose friable material likely to be disturbed in the process of doing the work, with a HEPA vacuum or by damp wiping.
6. When asbestos material is removed, all pieces should be placed directly into 0.15 mm (6 mil) polyethylene bags as they are removed. Avoid dropping material to floor wherever

- possible. After bulk removal is complete, wet wash the exposed surface.
7. Frequently, and at regular intervals during the work, clean up dust and waste in the work area by wet mopping, placing in disposal bags, or by HEPA vacuuming.
 8. After completion of removal, seal exposed ends of fireproofing, texture plaster, or mechanical insulation with heavy layer of encapsulating sealer. Apply sealer coat to surfaces from which asbestos material was removed.
 9. At completion of work, decontaminate equipment, tools and materials used in the work area by wet cleaning or HEPA vacuum.
 10. Dispose of drop sheets and enclosures by wetting the polyethylene, then folding into disposal bags. Do not reuse drop sheets or enclosures.
 11. Before leaving work area, decontaminate shoes and protective clothing by using HEPA vacuum or damp wiping. When protective clothing is to be disposed of, it shall be decontaminated as above and placed in labelled disposal bags. Workers shall vacuum all exposed skin, suit and respirator, and proceed to nearest washroom to wash hands and face.

6. Waste Transport and Disposal

1. Place waste into asbestos labelled disposal bag, seal with tape, clean the bag, and place into a second clean bag, also to be sealed with tape. Use a barrel, fibre drum, or cardboard or wooden box in place of the second bag when the asbestos waste material is likely to tear the inner bag. Seal the rigid outer container.
2. Place waste containers in storage area for holding asbestos waste. Containers shall be labelled and assigned exclusively for asbestos waste.
3. Prepare for waste disposal in compliance with provincial regulations. The Property Manager will arrange for disposal.

TYPE 3 - Work Procedures

Type 3 procedures are not included in the standard work procedures due to the requirement for the development of specific procedures for the site and for the particular circumstances.

Glove Bag Work Procedures

1. Equipment

All equipment must be on site before proceeding with the work. Note that these procedures are primarily based on the use of Safe-T-Strip polyvinyl chloride movable glove bags. (Only the Safe-T-Strip glove bag is permitted for use in Ontario.) If the single use polyethylene glove bags permitted in some other jurisdictions are used, it should be understood that they are for use at one location only, and cannot be moved or used elsewhere.

NOTE: If single use polyethelene glove bag is used Section 5 - Execution, shall be replaced by manufacturer's recommended procedures.

1. *Glove Bag*

Prefabricated, 0.25 mm (10 mil) minimum thickness polyvinyl-chloride bag with integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elasticized port. Bag shall be equipped with reversible double-pull double throw zipper on top. Bag must incorporate internal closure strip if it is to be removed from pipe for reuse elsewhere. Provide size and configuration appropriate for insulation to be removed. The bag must be disposed of once filled. Bag shall not be emptied and reused.

2. *Securing Straps*

Reusable nylon straps at least 25 mm (1") wide with metal buckle for sealing ends of bags

around pipe and/or insulation.

3. *Water Sprayer*

Garden reservoir type, low velocity, capable of producing mist or fine spray with water-containing wetting agent. Wetting agent shall be diluted as per manufacturer's recommendations.

4. *Respirators*

Workers using glove bag must wear approved respiratory protection. Respirators and filters must be provided by the employer, and individually assigned to workers. Respiratory protection must be equal to, or exceed, protection of half-face respirator with high efficiency filters. Respirators must be NIOSH approved and acceptable to the Provincial Authorities having jurisdiction. Respirators shall be kept in position from the time the worker is attaching bag to pipe until final cleaning of the pipe and bagging of waste is completed. Filters shall be changed after 24 hours of wear or sooner if breathing resistance increases.

5. *Protective Clothing*

Workers shall wear disposable coveralls with attached elasticized hood. Coveralls and hood shall remain in place until worker completes cleaning of pipe. Suit may be cleaned for reuse or disposed of as asbestos waste.

6. *Other Equipment*

- labelled asbestos waste bags 0.15 mm (6 mil) - for all asbestos waste in glove bag, disposable suit, cleaning materials, etc.;
- asbestos warning signs;
- wire saw - saw with flexible serrated wire blade and handles to allow use inside glove bag;
- knife with fully retractable blade for use inside glove bag;
- plastic sheet (4 mil polyethylene) to cover exposed or damaged section of pipe prior to attaching glove bag;
- tape-to fasten plastic to pipe if required;
- cleaning supplies e.g., scouring pads, sponges, brushes, buckets, etc.;
- HEPA vacuum, for evacuating air from bag prior to removing bag from pipe. A HEPA filter is at least 99.97% efficient in collecting a 0.3 micrometre particle.

2. **Other Protective Measures**

1. Do not eat, drink or smoke in the work area.
2. On completing clean-up of work area, use HEPA vacuum or wet cloth to clean hands, face, respirator and boots. Remove protective equipment and proceed to nearest washroom to wash all exposed skin on hands and face.

3. **Scheduling of Work**

1. Schedule work when occupants are absent. If persons are present, do not start work.

4. **Preparation**

1. Where practical, clear area below pipe of moveable furnishings or equipment. Provide scaffold as required to reach pipe.
2. Post an asbestos warning sign at all entrances to room in which the procedure is being used. If necessary use rope or tape barriers to separate work area.
3. Segregate the area of asbestos work, from other parts of the building required to remain in use by using polyethylene walls or barrier tape.
4. Shut off and seal all diffusers, vents and other openings to ventilation and exhaust systems in the room with polyethylene secured with tape.
5. Cover all items or equipment located in the designated work area with polyethylene when items or equipment cannot be cleaned in the case of a spill. Tape the polyethylene in place. The polyethylene should cover a width equal to the height of the pipe from the floor, with a minimum width of 3.6 m (12 feet), where required.
6. Seal all openings and voids in the vicinity of the glove bag operation with one layer of polyethylene secured with tape.
7. Check condition of pipe insulation where work will be performed. If the pipe insulation has minor isolated damage, mist surface and patch with tape. If damage is more extensive, wrap pipe with plastic and "candy stripe" it with duct tape first. If pipe insulation is severely damaged and cannot be simply repaired, glove bag is not appropriate. (Use Type 2 Procedures.)
8. Pre-clean with HEPA vacuum or wet methods any loose material on surface of pipe or any material on the floor. If significant amount of material is on floor, Type 2 procedures may be required for clean-up. (See Type 2 Procedures.)
9. Place necessary tools in bottom of glove bag.

5. Execution

1. Zip the bag onto the pipe and seal each end to the pipe with the securing straps. Do not pull the bag tightly to the ends - a small amount of slack allows better room to work within the bag. If a vertical bag is in use, ensure lower strap passes through plastic grommet and cloth tab on zipper.
2. Place hands into gloves and use necessary tools (wire saw, utility knife, wire cutters) to remove insulation from pipe. Arrange insulation in bottom of bag to obtain full capacity of bag. Roll metal jacketing carefully to minimize ripping or puncturing of the bag.
3. Insert nozzle of spray pump into bag through valve and wash pipe and interior of upper section of bag thoroughly. Use one hand to aid washing process. Wet surface of insulation in lower section of bag and any exposed ends of asbestos insulation remaining on pipe.
4. Prior to removing bag from the pipe, wash the top section of the bag and tools thoroughly. Insert nozzle of HEPA filtered vacuum into bag through the elasticized valve and evacuate air from bag. Seal the closure strip, remove the vacuum nozzle and straps, and remove the bag. Re-install and seal in new location before reopening closure.
5. If bag is to be moved along the same pipe, loosen securing straps, move bag, re-seal to pipe using double-pull zipper to pass hangers. Repeat insulation removal operation.
6. If during use the glove bag is ripped, cut or opened in any way, cease work and repair opening before continuing work. All spilled material must be cleaned up and removed with a HEPA vacuum or wet cleaning.
7. To remove bag after completion of insulation removal, thoroughly wash top section of bag and tools and seal internal zip-lock closure. Place tools in one glove, pull hand out inverted, twist to create a separate pouch, tape inside-out glove at two separate locations 1" apart to seal pouch. Remove inside-out glove and tools by cutting between the tape seals.
8. Place glove pouch and tools into the next clean glove bag to be used. Alternately, place the tool pouch into water bucket, open pouch underwater and clean tools, then allow to dry.
9. Prior to disposal of bag, evacuate the bag with a HEPA vacuum. Pull a 0.15 mm (6 mil) polyethylene bag over glove bag before removing from pipe. Remove securing straps. Unfasten zipper. Seal glove bag and seal 0.15 mm (6 mil) polyethylene bag.
10. After removal of bag ensure pipe is clean of all residue. If necessary, after removal of each section of asbestos, vacuum all surfaces of pipe, using HEPA filtered vacuum equipment,

- or wipe with wet cloth.
11. Seal all surfaces of freshly-exposed pipe with encapsulating sealer to tack-down any residual dust. Cover exposed ends of any remaining asbestos insulation with lagging cloth or tape.
 12. Before leaving work area, a worker shall decontaminate shoes and protective clothing by using HEPA vacuum or damp wiping. When protective clothing is to be disposed of, it shall be decontaminated as above and placed in labelled disposal bags. Workers shall vacuum all exposed skin, suit, respirator and hair (after removing hood) and proceed to nearest washroom to wash hands and face.

6. Waste Transport and Disposal

1. **Place waste containers in storage area for holding asbestos waste. Containers shall be labelled and assigned exclusively for asbestos waste.**
2. **Prepare waste for disposal in compliance with provincial regulations. The Property Manager will arrange for disposal.**

Asbestos Work Procedures

Emergency Asbestos Work Procedures

Emergency asbestos procedures shall be implemented when required in order to protect those undertaking the work, as well as to protect all others from, or limit exposure to, airborne asbestos. Procedures indicated shall be followed as closely as possible, in the event of an emergency situation. Procedures for asbestos work, required as an immediate response to floods, pipe breaks, ceiling collapses, or other emergencies that affect asbestos materials, are as follows:

1. Clear area of all occupants.
2. Construct enclosure around area if time permits.
3. Shut down ventilation system serving area.
4. Worker performing repair shall wear protective respirator and disposable suit. If normal work clothes are worn they must be disposed of if visibly contaminated.
5. Use drop sheet under work, if possible, to minimize clean-up.
6. Perform emergency repair with minimum disturbance of asbestos.
7. Obtain asbestos equipment and perform clean-up of visible material. Use HEPA filtered vacuum or wet cleaning. Dispose of all cleaning supplies as contaminated waste.
8. The worker should wipe off or vacuum disposable clothing and footwear. Proceed to washroom to wash face and hands.
9. Notify the Property Manager regarding the asbestos disturbance, before allowing unprotected persons to enter the area. The Property Manager will contact the Regional Asbestos Coordinator to determine if additional precautionary measures are to be implemented. The Regional Asbestos Coordinator will arrange for removal, clean-up or repair of the asbestos material.
10. The Regional Asbestos Coordinator shall investigate the extent of asbestos disturbance, will determine additional actions to be undertaken and will determine if a hazard investigation under the *Canada Occupational Safety and Health Regulation* is appropriate.

Bulk Sample Collection Procedures

1. Sample the material when the area is not in use. Only those persons needed for sampling should be present in the immediate area.
2. Spray the material with a light mist of water to prevent fibre release during sampling. Do not disturb the material any more than necessary.
3. Materials of different appearance should be sampled separately. Mechanical insulation must be sampled separately on all systems, tanks, vessels, etc. Sample both the straight sections of pre-formed insulation and the insulating cement typically present at elbows, fittings, etc. (unless

visually identified as fibreglass).

4. Collect the sample by penetrating the entire depth of the material, as the insulation may have been applied in more than one layer or covered with paint or other protective coating.
5. The use of a respirator is recommended for all sampling. Depending on the condition of the material, significant amounts of airborne fibres can be generated during sampling.
6. If pieces of material break off during sampling, the contaminated area must be cleaned up with a HEPA vacuum cleaner or by wet cleaning. Any debris generated must be placed in plastic bags, labelled, sealed and disposed of as asbestos waste.
7. Place samples in labelled plastic bags with a zip-lock closure or in sealed plastic vials. Samples shall be identified with the following information:
 - Sample Number;
 - Building;
 - Room Number;
 - Date of Sampling;
 - Name of Sampler;
 - Source of sample, e.g., Cold Water Pipe, Cold Water Fitting, etc.

8. Temporarily seal any openings created to collect the sample, (for example, with tape, paint or metal foil tape wrapped completely around the pipe). Advise the Property Manager or Regional Asbestos Coordinator.
9. Analysis must be performed by the Health Canada Laboratory or by a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Contact the Regional Asbestos Coordinator for a list of acceptable laboratories.

Respirator Fitting, Inspection, Cleaning and Disinfecting

Notes for Air Purifying Half-Facepiece Respirators

WARNING: This respirator does not supply oxygen. It must not be used in or for: oxygen deficient atmospheres (less than 19.5%); poorly ventilated areas or enclosed spaces such as tanks or small rooms; abrasive blasting or firefighting; or for protection against contaminants excluded or not covered by the applicable Approval Label.

Respirators must be approved for protection against asbestos. Check for NIOSH certification.

1. Respirator Fitting

Persons required to wear respirators must first pass a qualitative fit-test administered according to the current version of CSA standard Z-94.4. The fit-test should be repeated yearly.

2. Inspection Items Prior to Each Use

1. Examine facepiece for:

- dirt;
- cracks, tears or holes;
- distortion and inflexibility;
- cracks or breaks in filter holders, worn threads and missing gaskets.

2. Examine head straps for:

- breaks or tears;
- loss of elasticity;
- broken or malfunctioning buckles and attachments.

3. Examine valves for:
 - detergent residue, dust or other material on valves or valve seats;
 - cracks, tears or distortion in the valve material;
 - missing or defective valves or valve covers.

4. Examine filter for:
 - proper filter for protection against asbestos (High Efficiency Particulate);
 - incorrect installation, loose connections, missing or worn gaskets or cross threading;
 - cracks or dents in filter housing.

5. Leak-checks:

Perform the following tests on each donning:

- *negative pressure test*: cover inlets to filters, breathe in and hold breath; respirator should be drawn to face for minimum of ten seconds (if not, check exhalation valve and fit);
- *positive pressure test*: cover exhalation valve cover and puff out slightly and hold breath; respirator should slightly pressurize and still hold seal (if not, check inhalation valves and fit).

3. Respirator Cleaning and Disinfecting

1. Remove filters and disassemble facepiece. Discard or repair defective parts.
2. Wash components in warm water (50°C - 60°C) with mild detergent, using a brush. Cleaning and disinfectant solutions are available from respirator manufacturers.
3. Thoroughly rinse components in clean, warm water.
4. Air dry or hand dry components with a clean, lint-free cloth.
5. Reassemble respirator and test to ensure that all components are working properly (see above). Be careful to check that valves are not lost in the cleaning.

4. Filter Cartridge Handling and Replacement

1. Filters can be reused until an increase in breathing resistance is noted. Under typical Type 2 conditions, filter cartridges should last a minimum of 24 hours. Inlet side of filter cartridge to be reused shall be sealed on the inlet side with tape for storage.
2. When no longer usable, filter cartridges will be sealed on the inlet side with tape, and disposed of as contaminated waste.

APPENDIX 4

ASBESTOS CONTAINING MATERIAL INSPECTION CHECKLIST

**ASBESTOS CONTAINING MATERIAL
INSPECTION CHECKLIST
AGRICULTURE and AGRI-FOODS CANADA BUILDING 25**

Date	Asbestos Contractor or Consultant, if retained (include name & address)	Facility Representative in Attendance	Location of ACMs	Friable or Non-Friable	Recommended Action

This table must be maintained on site.

APPENDIX 5

EXAMPLE FORMS FOR MAINTAINING LIST OF TRAINED EMPLOYEES

LIST OF TRAINED EMPLOYEES
Asbestos Awareness

AGRICULTURE and AGRI-FOODS CANADA BUILDING 25

Employee Name	Date of Training

APPENDIX 6

SITE PHOTOGRAPHS



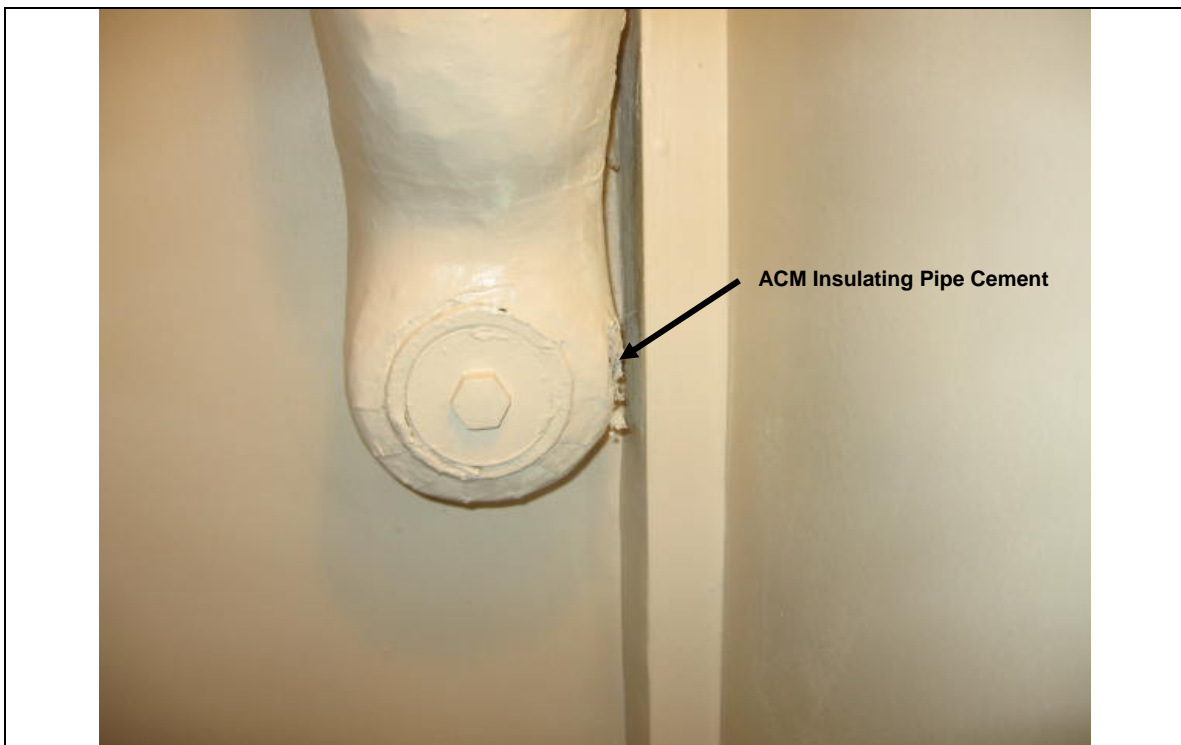
Photograph 1: Asbestos containing material (ACM), 23 x 23 cm, vinyl floor tile, Room No. SB-7 (Sample No. ACM 2). Note that eight other colours of ACM floor tile are also present in the building (no photos provided).



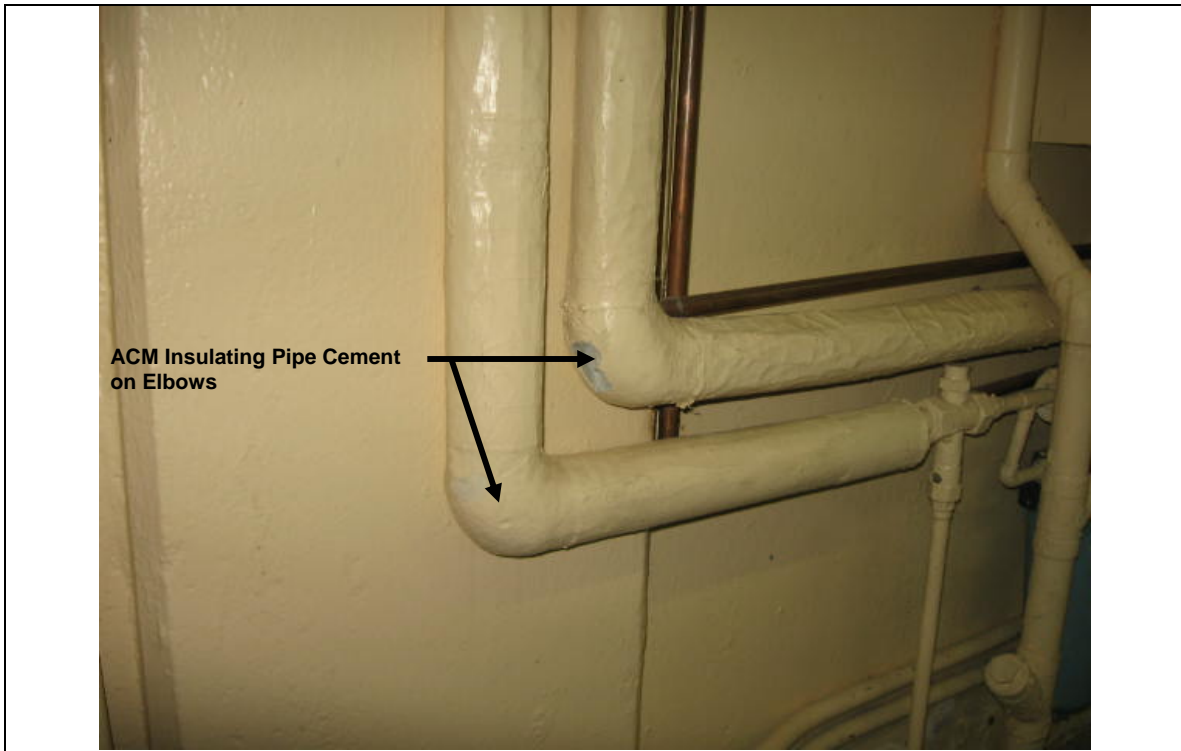
Photograph 2: ACM fabric on ceiling light fixture, Room No. SB-7. (Sample No. ACM 13)



Photograph 3: ACM pipe wrap insulation, corrugated paper-type, Room No. SB-7. (Sample No. ACM 14)



Photograph 4: ACM insulating pipe cement, Room No. SB-7. (Sample No. ACM 15)



Photograph 5: ACM insulating pipe cement (elbows), Room No. SB-1. (Sample No. ACM 18)



Photograph 6: ACM pipe insulation on overhead 300 mm dia. steam header piping. Room No. SB-1. (Sample No. ACM 19).



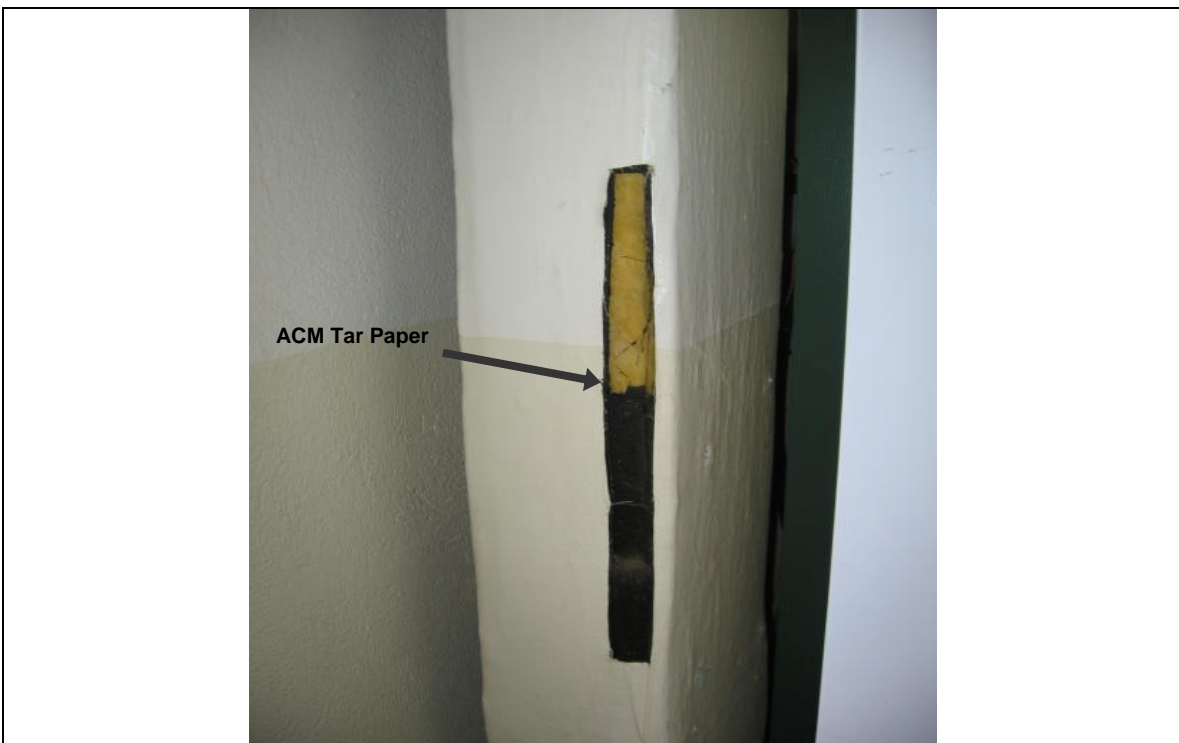
Photograph 7: ACM hot water tank insulation (2 tanks), Room No. B-2 (Sample No. ACM 22).



Photograph 8: ACM insulating pipe cement (elbow), located behind metal heater cover in Room No. 1-4. (Sample No. ACM 25).



Photograph 9: ACM cement on end of fiberglass pipe wrap in Room No. 1-10 (Sample No. ACM 30).



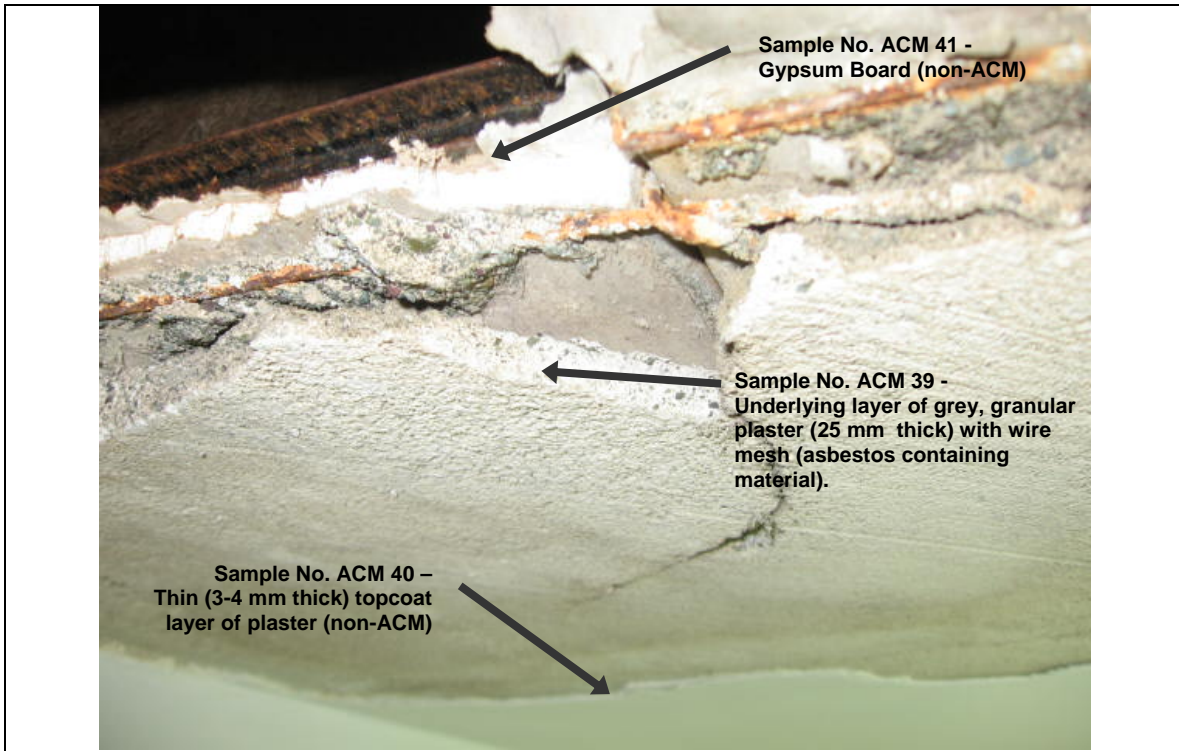
Photograph 10: ACM tar paper on duct (two) located in Room No. B-25. (Sample No. ACM 37)



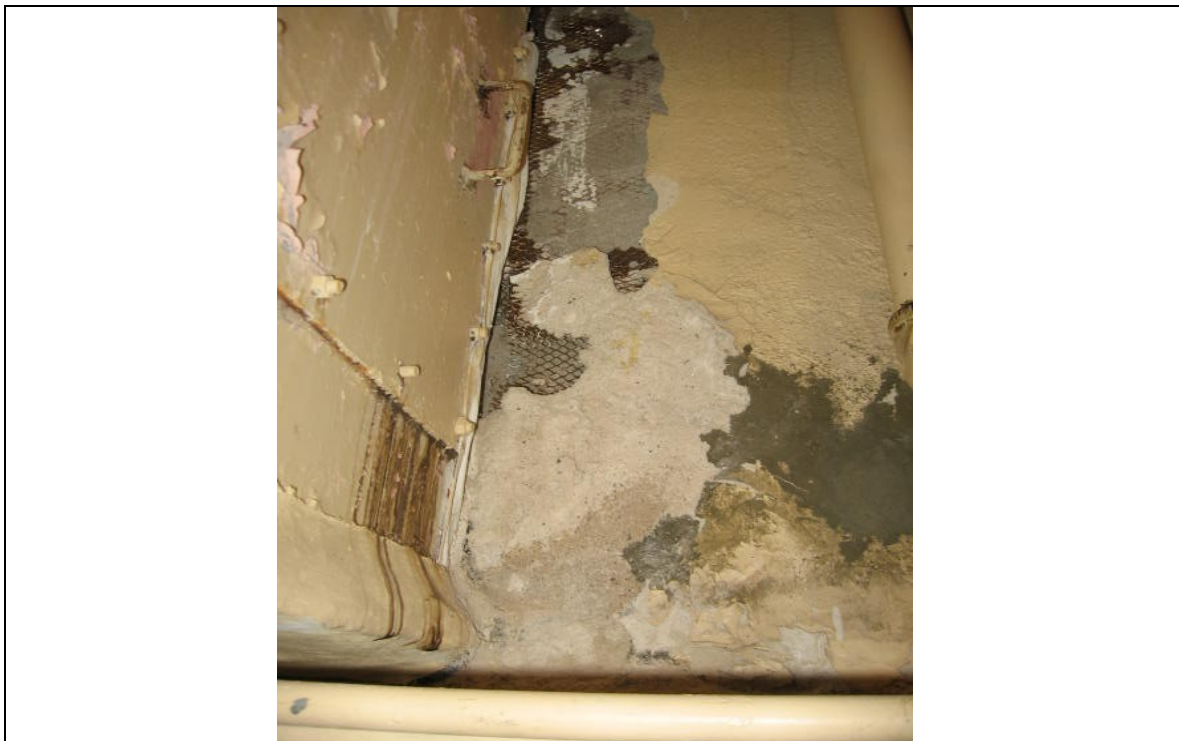
Photograph 11: ACM cement on end of fiberglass-insulated pipe valve. Room No. SB-1 (Sample No. ACM 38)



Photograph 12: Damaged ACM plaster ceiling, Room No. 1-16.



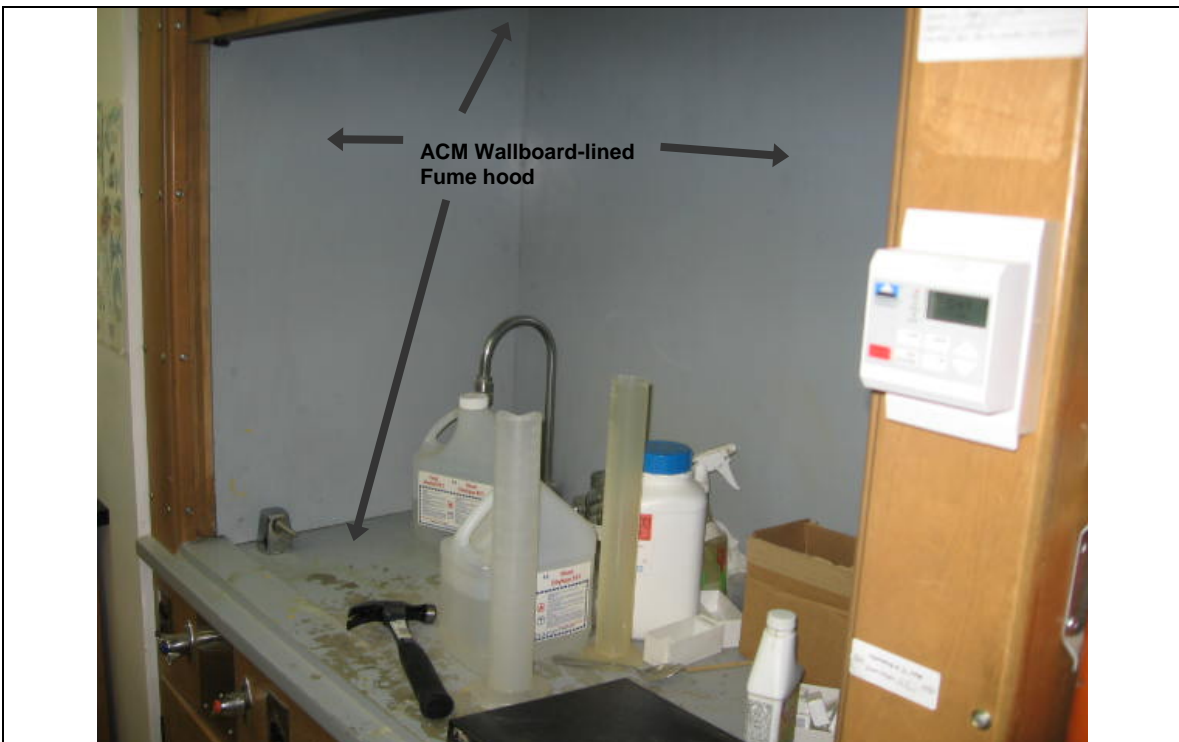
Photograph 13: Close-up of damaged ACM plaster ceiling in Room No. 1-16.



Photograph 14: Damaged ACM wall plaster, Room No. SB-1 (Sample No. 45)



Photograph 15: Damaged plaster ceiling in Room No. B-21 (Freezer Room). (Sample No. ACM 47). Note that although analysis of this material showed no asbestos was detected, material should be treated as asbestos based on positive results of similar samples and non-homogeneous nature of material.



Photograph 16: ACM wallboard-lined fume hood in Room No. 1-17. (Sample No. ACM 48). Note it was reported that there are two other fume hoods containing this wallboard material, however they are covered with stainless steel sheeting.



Photograph 17: ACM insulating pipe cement (elbow). Room No. B-25 (sample No. ACM 49)



Photograph 18: ACM wall plaster, Room No. SB-1A (Sample No. ACM 50).



Photograph 19: ACM wall plaster, end of B-level hall (Sample No. ACM 51)

APPENDIX 7

LIMITATIONS

LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
 - (a) The Standard Terms and Conditions which form a part of our Contract;
 - (b) The Scope of Services;
 - (c) Time and Budgetary limitations as described in our Contract; and,
 - (d) The Limitations stated herein.
2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.
3. The conclusions presented in this report were based, in part, on visual observations of the site and attendant structures. Our conclusions cannot and are not extended to include those portions of the site or structures which were not reasonably available, in AMEC's opinion, for direct observation.
4. The environmental conditions at the site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the site with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.
5. Where testing was performed it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, might be present on site and be revealed by different or other testing not provided for in our contract.
6. It should be noted that AMEC did not gain access to one room within the Building during the course of the Survey; namely, Room No. B-12 (locked vault).
7. The findings within this report do not reflect potential ACMs in areas not accessed, such as remote space areas, wall cavities and ceilings spaces. During future renovations or demolition activities and subsequent removal of interior wall and ceiling materials, the actual quantities of asbestos containing materials can be verified. Also at this time, analysis of suspect ACM materials may be required if the appearance differs from that of materials previously confirmed to contain asbestos in adjacent rooms.
8. Because of the limitations referred to above, different environmental conditions from those stated in our report might exist. Should such different conditions be encountered, AMEC must be notified in order that it may determine if modifications to the conclusions in the report are necessary.
9. The utilization of AMEC's services during the implementation of any remedial measures will allow AMEC to observe compliance with the conclusions and recommendations contained in the report. AMEC's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.

10. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or the part, or any reliance thereon or decisions made based on any information or conclusions in the report, is the sole responsibility of such third party. AMEC accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.
11. This report is not to be given over to any third party for any purpose whatsoever without the written permission of AMEC.

Asbestos Report

AAFC, Building 25

Dooley, Cherri

From: Dooley, Cherri
Sent: Thursday, April 02, 2009 11:50 PM
To: NL-StJohn-All Staff; Murphy, Peter
Cc: McKendry, Jim; Vallée, Louis
Subject: Asbestos
Importance: High

Good Evening,

Just an update following our asbestos information session presented by Sean Casey, Certified Industrial Hygienist which was held on Monday, March 30, 2009.

We are in the final stages of implementation of additional safety protocols established by Sean, these additions will be added to the report previously prepared by AMEC Earth & Environmental shortly. The report will be available for review to all staff upon request on Wednesday April 8, 2009. I will have several copies available for review.

The following website is a good resource for some background information relating to asbestos for those of you who had missed the information session.

<http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/asbestos-amiante-eng.php>

PLEASE NOTE:

- **Asbestos has been found and reported at the Atlantic Cool Climate Crop Research Centre, Building 25** and is located in the following areas:
 - mechanical insulation (piping, pipe fittings)
 - hot water tanks
 - flooring
 - ceilings (not to include ceiling tiles)
 - wall plaster finishing (not gyproc)
 - tar paper (duct insulation – located in sub basement)
- Although, asbestos was not present in all of the 52 samples taken from the areas above, as per the report any renovations or disturbances that may damage building material to include areas identified will be treated as Asbestos Containing Material (ACM) and the proper steps will be enforced to ensure the health of employees, contractors and visitors.
- Most ACMs in the Atlantic Cool Climate Research Facility – Building 25 are in good condition and do not pose a risk to human health.
- Asbestos only presents a health hazard when fibres become air borne and inhaled. The mere presence of ACMs does not represent a health hazard.

- Do not disturb the Asbestos Containing Materials. Activities that may disturb ACMs include cutting, drilling, sanding or removing the above mentioned building materials. Contact the Facility Asbestos Coordinator to make the necessary arrangements if you wish to undertake an activity that may disturb ACM.
- Report any evidence of disturbance or damage of ACMs to:
Frank Ralph, Facility Asbestos Coordinator
Telephone: 772-8863
Cell: 765-3760
Email: ralphf@agr.gc.ca
- Facility staff are taking special precautions during their work to guard against disturbing ACMs.
- Report any improper action (relative to ACMs) to the Facility Asbestos Coordinator, Frank Ralph.
- All ACMs and suspect ACMs are inspected periodically and additional measures will be taken if needed to protect the health of employees, contractors and visitors.

Thank you,

Cherri Dooley

Integrated Services Manager/ Gestionnaire des Services intégrés
Agriculture and Agri-Food Canada/Agriculture et Agroalimentaire Canada
Telephone/Téléphone: 709-772-4677
Facsimile/Télécopieur: 709-772-6064
308 Brookfield Road / 308 Ch Brookfield
P. O. Box 39088 / CP 39088
St. John's, NL A1E 5Y7
Dooleyca@agr.gc.ca

Dooley, Cherri

From: sonyacc@yahoo.com
Sent: Monday, March 23, 2009 4:07 PM
To: Dooley, Cherri
Subject: air sampling results



agcanasbsamples.xls (20 KB)

Please find enclosed the air sampling results for the sampling undertaken on March 11, 2009 at Building 25. (let me know if you can't read Maxxim Analytic's excel report)

2 background samples were taken as well as 1 where the plaster repairs were undertaken as follows:

Sample 1: SC-AG-01 background sample basement level from 5:55 pm to 6:58 pm. sampled at 16 litres per minute. Sample taken in hallway outside of office B-3. Air concentration was 0.018 fibres per cubic centimeter of air (note: provincial airborne limit is 0.1 f/cc & federal limit for chrysotile is 1 f/cc)

Sample 2: SC-AG-02 background sample 2nd level/main floor hallway outside M.P. Hannaford's office. Taken from 5:58 pm to 7:00 pm at 10 litres per minute. Air concentration was 0.011 f/cc.

Sample 3: SC-AG-03 taken during bubble repair from 6:58 pm to 7:58 pm. Flow rate of 16 litres per minute. Work vacininty was outside of B-3 and 6 plaster bubbles were repaired during the sampling period which took up about 3/4 of the sampling period. The sampling filter was approximately 6 feet away from the actual work zone on the boundary of where the poly was positioned and would represent the boundary of the restricted work zone. Air concentration was 0.020 f/cc.

The highest fibre count was 1/5th of the provincial permissible limit and 50 times less than the federal limit. Keep in mind as well that this fibre counting method counts all detectable fibres and not just those which are asbestos.

In any event, results are acceptable from a regulatory perspective. I can provide a more indepth report at a later date.

Sean

Maxxam Job #: A929002
Report Date: 2009/03/23

Sean Casey
Client Project #: SC-09-02
Project name: ST. JOHN'S
Sampler Initials:

RESULTS OF ANALYSES OF FILTER

Maxxam ID		BY6149		BY6150		BY6151		
Sampling Date		03-11-2009		03-11-2009		03-11-2009		
COC Number		23200		23200		23200		
	Units	SC-AG-01	RDL	SC-AG-02	RDL	SC-AG-03	RDL	QC Batch
Inorganics								
Asbestos	fibers/cc	0.018	0.003	0.011	0.004	0.020	0.003	1768928

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Date: March 26, 2009

Draft Procedure Submitted by: Sean Casey, CIH

Prepared for: Ms. Cherri Dooley,
Integrated Services Manager, Agriculture and Agri-Food Canada

Procedure Title: Cleanup dust from disturbance of ACM.

Cleanup debris and dust on surfaces after a small area of surfacing ACM has fallen from a ceiling, pipe insulation or other source

Summary:

This work practice is limited to the cleanup of a small quantity of relatively intact debris which has fallen from a plaster finish, or thermal insulation on pipes, boilers or other equipment.

Worker Recommendations:

This work activity can usually be carried out by one person trained as per the asbestos management plan.

Air monitoring:

Sampling may be required after cleanup depending on the situation. The worker shall consult with the Facility Asbestos coordinator to determine if follow-up clearance sampling is required prior to re-occupying the space.

Pre-Work Activities:

1. Review work procedure
2. Review any associated documentation as required in the asbestos management plan (ie. Completed Maintenance Work Authorization Form)
3. Obtain recommended tools, equipment and materials (see list at end of procedure)
4. Obtain ½ face, as a minimum, HEPA filtered respirator (worker must be fit tested and properly trained) and disposable tyvek coveralls, wet wipes
5. Barricade area using barrier tape or restrict access as stipulated by supervisor (ie. vacate area, lock doors) and conduct work at times designated by employer to reduce building occupant exposure to work zone. If barrier tape is used to denote

- a work area, it should be placed 5-10 ft outside of any poly protection used in the work area. Do not block access to any emergency exits.
6. Verify whether there are any exhaust vents in proximity to the proposed work area. Speak to your supervisor about whether these vents may need to be blocked or whether the ventilation system in the work zone can be effectively isolated as per company protocols.
 7. Put on tyvek and ½ face HEPA respirator and check for proper fit.
 8. Remove asbestos containing debris as follows:
 - a. start HEPA vacuum before entering the area
 - b. use the HEPA vacuum to clean a path at least 6 feet wide from the entry point of the work area to the site of the fallen material,
 - c. remove all small debris with the HEPA vacuum.
 - d. Remove any dust or loose debris from the surface of larger pieces of ACM with a HEPA vacuum. Mist surface of pieces with amended water.
 - e. Pick up such pieces (ie. Using inverted plastic bag) and place in the bottom of a 6 mil poly disposable asbestos bag. Place pieces in the bag without dropping and avoiding unnecessary disturbance and release of material. Thoroughly wet debris in bag with amended water as it is collected.
 - f. Remove all remaining visible debris with HEPA vacuum.
 - g. HEPA vacuum an area 3 feet beyond the location in which any visible debris was found. HEPA vac in 2 directions each at right angles to the other.
 - h. Wet wipes any hard surfaces or objects in the area which may have been contaminated.
 - i. Place a poly drop cloth down on top of the HEPA vacuumed area before performing repair work that may result in more fall out from above. If worker is required to work at heights and feels poly poses an unnecessary safety hazard, its use can be avoided if flooring is smooth and resilient enough to permit adequate cleaning afterwards.
 - j. HEPA vac the site from which material fell removing all loose material.
 - k. Repair or remove the remaining material as previously described.
 - l. HEPA vacuum ladder and/or any tools used and pass out of the work area.
 - m. Decontaminate objects/tools on the drop cloth. (HEPA vacuum followed by wet wiping). Then HEPA vacuum drop cloth before disposing as asbestos waste.
 9. Package and ensure asbestos waste is labelled for disposal.
 10. Barriers shall be discarded as asbestos waste unless they are rigid and easily cleanable.
 11. Workers decontaminate and remove protective clothing and respirators. Dispose of protective clothing as asbestos waste. Use wet wipes for gross cleaning and proceed to nearest washroom to wash up properly.
 12. Complete visual inspection.
 13. Restore normal accessibility to work area
 14. Complete documentation as required in the Asset Control Program.
 15. Transport waste to designated asbestos waste storage area
 16. Notify Asbestos program manager or supervisor that work is completed and return associated documents.

Tools, equipment and Materials:

- utility knife
- temporary work lights as required (GFCI)
- ladder or scaffold for elevated work
- wet wipes or bucket with clean water for wet wiping
- safety glasses and safety boots
- disposable coveralls
- ½ face respirator HEPA filtered as minimum
- Asbestos barrier tape and warning signs
- Polyethylene sheet
- Duct tape
- Asbestos disposal bags with labels
- HEPA vacuum with hose (attachments)
- Water spray with amended water(ie. Garden sprayer)

Date: February 25, 2009

Draft Procedure Submitted by: Sean Casey, CIH

Prepared for: Ms. Cherri Dooley,
Integrated Services Manager, Agriculture and Agri-Food Canada

Procedure Title: Repair Damaged Asbestos Containing Material (ACM) plaster

Summary:

This work practice covers the procedure for repairing small amounts (less than 1 sq metre) of damaged acoustical plaster. The procedure assumes that the damage is in isolated areas not greater in size than what will generate one standard asbestos disposal bag (filled one third full). It is anticipated that this work may disturb ACM, but not able permissible limits, and release of ACM, dust and debris is confined to the immediate location of the disturbance.

Examples:

1. Repair small hole in outer acoustical plaster ceiling or wall layer without intended disturbance of underlying asbestos layer.
2. Repair small area of delaminated acoustical plaster that it otherwise in good condition.

Worker Recommendations:

This work procedure only requires one worker to complete the task. The worker shall be trained as per the asbestos management plan. It is possible that there may be times when an additional worker may be need to hold the HEPA vacuum. In these circumstances the Facility Asbestos Coordinator shall be consulted.

Air monitoring:

Initial air sampling was carried out and it was verified that the safe work procedure can be carried out safely without containment in place. Additionally, there is no requirement for further air sampling also conditions change. The exposure assessment report is available in the asbestos management plan. Additional use of this procedure must conform to the requirements of this procedure. If job conditions vary from the examples and conditions stipulated, the work shall not proceed until workers check with the Facility Asbestos Coordinator.

Pre-Work Activities:

1. Review work procedure
2. Review any associated documentation as required in the asbestos management plan (i.e. Completed Maintenance Work Authorization Form)
3. Obtain recommended tools, equipment and materials (see list at end of procedure)
4. Obtain ½ face, as a minimum, HEPA filtered respirator (worker must be fit tested and properly trained) and disposable tyvek coveralls, wet wipes
5. Barricade area using barrier tape or restrict access as stipulated by supervisor (ie. Vacate area, lock doors) and conduct work at times designated by employer to reduce building occupant exposure to work zone. If barrier tape is used to denote a work area, it should be placed 5-10 ft outside of any poly protection used in the work area. Do not block access to any emergency exits.
6. A check shall be made to determine whether there are any exhaust vents in the area of the work zone, and if so, the worker shall inform their supervisor to determine what if any action is required (ie. block vent, shut down section of unit in question).
7. Ensure proper hygiene practices followed during work: no eating, drinking, chewing or smoking in asbestos work area

Work Practice: Always use wet methods, HEPA vacuums, prompt clean-up and disposal of waste. Prohibited practices include: dry clean-up of dust and debris, or use of compressed air or high speed abrasive saws. Perform work as per steps in work practice as follows:

8. Once personal protective equipment (PPE) in place and pre-work activities in place, pre-clean work area if visible dust or debris is present.
9. Put poly sheet directly below work area and far enough to catch any inadvertent falling debris. A single layer of poly is to be spread on the floor and taped or weighted in place. If work is to be performed at an elevated level, the poly should be placed on the platform and extended at ground level beyond the immediate work location. To catch any debris that might be generated. To reduce the likelihood of slips, non-slip footwear should be used. If worker is required to work at heights and feels poly poses an unnecessary safety hazard, its use can be avoided if flooring is smooth and resilient enough to permit adequate cleaning afterwards.
10. Place necessary tools (see list below) on poly drop sheet.
11. Mist any damaged surfacing using garden sprayer/mist bottle containing amended water and allow water to soak in for several minutes.
12. Within HEPA vacuum within several inches of damaged area, remove any loose material by hand or with scraper. Collect material in disposal (asbestos) bags as it is removed. Remove material around edges of damaged area until well-adhered material is found, but do not remove beyond area protected by drop cloth. Mist removal area during removal of damaged material.
13. Repair damaged area using non-ACM (such that no edges containing asbestos fibres are likely to become airborne) and perform clean-up as follows:

14. package and ensure asbestos waste is labelled for disposal.
15. Apply lockdown encapsulant only if asbestos surfaces remain exposed (however this should not be the case since asbestos is contained within underlying layer)
16. Clean tools, equipment and work area using wet wiping and HEPA vacuuming as appropriate and return tools and equipment to designate area
17. Remove drop cloth and dispose of as asbestos waste. Barriers shall be discarded as asbestos waste unless they are rigid and easily cleanable.
18. Workers decontaminate and remove protective clothing and respirators. Dispose of protective clothing as asbestos waste.
19. Complete visual inspection.
20. Restore normal accessibility to work area
21. Complete documentation as required in the Asset Control Program.
22. transport waste to designated asbestos waste storage area
23. Notify Asbestos program manager or supervisor that work is completed and return associated documents.

Tools, equipment and Materials:

- utility knife
- temporary work lights as required (GFCI)
- ladder or scaffold for elevated work
- wet wipes or bucket with clean water for wet wiping
- safety glasses and safety boots
- disposable coveralls
- ½ face respirator HEPA filtered as minimum
- Asbestos barrier tape and warning signs
- Polyethylene sheet
- Duct tape
- Asbestos disposal bags with labels
- HEPA vacuum with hose (attachments)

Date: February 27, 2009

Draft Procedure Submitted by: Sean Casey, CIH

Prepared for: Ms. Cherri Dooley,
Integrated Services Manager, Agriculture and Agri-Food Canada

Procedure Title: Cut or drill hard cementitious asbestos-containing plaster in isolated areas for routine maintenance purposes

Summary: When drilling plaster most regulatory agencies require going beyond the use of impermeable drop clothes to include some form of isolation method. This work practice will rely on a HEPA exhausted collar on the drill, shaving cream, or a wet sponge as, "another isolation method". This will comply with both provincial and federal asbestos regulatory requirements. The employer must ensure that the work is done such that it effectively isolates the drilling or cutting work.

It is anticipated that this work may disturb ACM, but not above permissible limits, and release of ACM, dust and debris is confined to the immediate location of the disturbance.

Worker Recommendations:

This work activity can usually be carried out by one person trained as per the asbestos management plan.

Air Monitoring:

Air sampling is not considered necessary unless for some reason the use of wet sponges, shaving cream, etc, is unable to form an effective seal to prevent the release of fibres. In such circumstances the worker must check with the Facility Asbestos Coordinator prior to proceeding.

Pre-Work Activities:

1. Review work procedure
2. Review any associated documentation as required in the asbestos management plan (ie. Completed Maintenance Work Authorization Form)

3. Obtain recommended tools, equipment and materials (see list at end of procedure) including drill or hole saw (as needed) equipped with HEPA filtered dust collection
4. Obtain ½ face, as a minimum, HEPA filtered respirator (worker must be fit tested and properly trained) and disposable tyvek coveralls, wet wipes
5. Barricade area using barrier tape or restrict access as stipulated by supervisor (ie. vacate area, lock doors) and conduct work at times designated by employer to reduce building occupant exposure to work zone. If barrier tape is used to denote a work area, it should be placed 5-10 ft outside of any poly protection used in the work area. Do not block access to any emergency exits.
6. Verify whether there are any exhaust vents in proximity to the proposed work area. Speak to your supervisor about whether these vents may need to be blocked or whether the ventilation system in the work zone can be effectively isolated as per company protocols.
7. Ensure proper hygiene practices followed during work: no eating, drinking, chewing or smoking in asbestos work area

Work Practice:

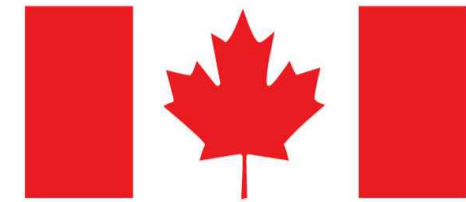
Always use wet methods, HEPA vacuums, prompt clean-up and disposal of waste. Prohibited practices include: dry clean-up of dust and debris, or use of compressed air or high speed abrasive saws. Perform work as per steps in work practice as follows:

8. Once PPE in place and pre-work activities in place, pre-clean work area if visible dust or debris is present.
9. Put poly sheet directly below work area and far enough to catch any inadvertent falling debris. A single layer of poly is to be spread on the floor and taped or weighted in place. If work is to be performed at an elevated level, the poly should be placed on the platform and extended at ground level beyond the immediate work location to catch any debris that might be generated. To reduce the likelihood of slips, non-slip footwear should be used. If worker is required to work at heights and feels poly poses an unnecessary safety hazard, its use can be avoided if flooring is smooth and resilient enough to permit adequate cleaning afterwards.
10. Place necessary tools (see list below) on poly drop sheet.
11. Mist area to be cut or drilled. Holes can be drilled through a wet sponge or shaving cream on both sides or through use of HEPA filtered dust collection.
12. When finished with sponge it should be placed in asbestos disposal bag.
13. HEPA vacuum removal area and areas accessible from hole.
14. HEPA vacuum and wet wipe up any accessible dust or debris generated on back side. Remove drop cloth and place in disposal bags (asbestos type).
15. Perform maintenance work and clean-up as follows:
16. Package and ensure asbestos waste is labelled for disposal.
17. Apply lockdown encapsulant only if drill holes to remain exposed

18. Clean tools, equipment and work area using wet wiping and HEPA vacuuming as appropriate and return tools and equipment to designate area
19. Remove drop cloth and dispose of as asbestos waste. Barriers shall be discarded as asbestos waste unless they are rigid and easily cleanable.
20. Workers decontaminate and remove protective clothing and respirators. Dispose of protective clothing as asbestos waste. Use wet wipes fro gross cleaning and proceed to nearest washroom to wash up properly.
21. Complete visual inspection.
22. Restore normal accessibility to work area
23. Complete documentation as required in the Asset Control Program.
24. Transport waste to designated asbestos waste storage area
25. Notify Asbestos program manager or supervisor that work is completed and return associated documents.

Tools, equipment and Materials:

- utility knife
- temporary work lights as required (GFCI)
- ladder or scaffold for elevated work
- wet wipes or bucket with clean water for wet wiping
- safety glasses and safety boots
- disposable coveralls
- ½ face respirator HEPA filtered as minimum
- Asbestos barrier tape and warning signs
- Polyethylene sheet
- Duct tape
- Asbestos disposal bags with labels
- HEPA vacuum with hose (attachments)
- Shaving cream/wet sponge



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada

**PATHOLOGY LAB RETROFIT
BUILDING #25
BROOKFIELD ROAD
ST. JOHN'S, NL**

DRAWING LIST

ARCHITECTURAL

A1-R0 GENERAL NOTES AND KEY PLAN
A2-R0 EXISTING/DEMOLITION/NEW LEVEL 1 PARTIAL FLOOR PLANS
A3-R0 CASEWORK ELEVATIONS

MECHANICAL

M1-R0 DEMOLITION LEVEL 1 PARTIAL FLOOR PLAN
M2-R0 NEW LEVEL 1 PARTIAL FLOOR PLAN

ELECTRICAL

E1-R0 EXISTING / DEMOLITION / NEW LEVEL 1 PARTIAL FLOOR PLANS

PROJECT NO. 1516-143110-P07

ISSUED FOR TENDER

NOVEMBER 6, 2015

Canada

GENERAL NOTES:

- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND CONDITIONS ON SITE BEFORE PROCEEDING WITH ANY PORTION OF THIS WORK. DO NOT SCALE FROM DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
- CONTRACTOR IS ENCOURAGED TO VISIT THE SITE OF THE WORK PRIOR TO SUBMITTING A TENDER AND BECOME FAMILIAR WITH ALL SCOPE AND CONDITIONS OF THE WORK. DRAWINGS DO NOT NECESSARILY SHOW FULL EXTENT OF DEMOLITION.
- DISCREPANCIES BETWEEN DEMOLITION DRAWINGS AND NEW CONSTRUCTION DRAWINGS OR BETWEEN DRAWINGS AND SITE CONDITIONS TO BE REPORTED TO CONSULTANT PRIOR TO COMMENCING CONSTRUCTION. DRAWINGS DO NOT NECESSARILY SHOW FULL EXTENT OF DEMOLITION.
- FOR MECHANICAL AND ELECTRICAL DEMOLITION SEE MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
- REFER TO ARCH., MECH., & ELEC. DRAWINGS AND SPECIFICATIONS FOR EXTENT OF WORK AND CO-ORDINATE WITH OTHER TRADES PRIOR TO THE COMMENCEMENT OF ANY WORK.
- PROVIDE ALL TEMPORARY FACILITIES AND ENCLOSURES AS SPECIFIED AND AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. PROTECT AND MAINTAIN OPERATIONAL ALL ENTRANCES, EXITS, FIRE & LIFE SAFETY SYSTEMS, CORRIDORS, ETC. AS REQUIRED THROUGHOUT THE PROGRESS OF THE WORK.
- BUILDING WILL BE OPERATIONAL DURING THE WORK. CONTRACTOR TO CO-ORDINATE WORK WITH OWNER, ETC. CARRY OUT CERTAIN WORK AFTER HOURS. SEE SPECIFICATION.
- ALL ITEMS THAT ARE REMOVED AND TO BE REINSTALLED SHOULD BE STORED IN A SAFE AREA OUTSIDE OF BUILDING AS NOT TO BE DAMAGED DURING THE COURSE OF WORK.
- ALL EQUIPMENT REMOVED TO BE TURNED OVER TO OWNER. ALL OTHER WASTE, DEBRIS AND ITEMS REMOVED, UNLESS INDICATED OTHERWISE, BECOMES PROPERTY OF CONTRACTOR FOR REMOVAL OFF-SITE IN AN AREA APPROVED BY THE MUNICIPALITY HAVING JURISDICTION.
- ALL WORK TO CONFORM TO LATEST EDITIONS OF THE FOLLOWING: NATIONAL BUILDING CODE OF CANADA, CANADIAN ELECTRICAL CODE, NATIONAL FIRE COMMISSIONER OF CANADA, ALL PROVINCIAL AND LOCAL CODES AND STANDARDS.
- CONTRACTOR TO PROVIDE ALL CUTTING, FITTING, PATCHING, FRAMING, FURRING, BLOCKING & MISCELLANEOUS RELATED COMPONENTS NECESSARY TO PROVIDE A COMPLETE AND OPERABLE INSTALLATION. CO-ORDINATE WITH SUB-TRADES.
- CONTRACTOR TO PROVIDE ALL CUTTING AND PATCHING OF EXISTING WALLS, CEILINGS AND FLOORS OUTSIDE OF LIMIT OF CONTRACT TO ACCOMMODATE MECH./ELEC. WORK. WHERE CUTTING AND PATCHING AFFECTS EXPOSED WALLS AND CEILINGS, PAINT WALLS AND CEILINGS TO NEAREST INTERSECTION.
- GENERAL CONTRACTOR TO MAKE GOOD ANY DAMAGE TO COMMON AREAS (i.e. CEILINGS, WALLS, FLOORS, etc.) DUE TO INSTALLATION OF NEW WORK. PAINT TO NEAREST CORNER TO MATCH EXISTING WHERE EXISTING SPACES ARE AFFECTED BY WORK OF THIS CONTRACT.
- FURRING SPACES AROUND PIPES, DUCTS, ONE SIDE OF PIPE SPACES, BRACING & COLUMNS SHALL BE CONSTRUCTED OF SAME MATERIAL AS WALL IN WHICH THEY OCCUR & EXTEND 100mm MIN. ABOVE CEILING U/N OTHERWISE. FURRING SPACES TO BE KEPT AS SMALL AS POSSIBLE.
- PATCH, REPAIR AND MAKE GOOD CONCRETE FLOORS LEFT DAMAGED BY DEMOLITION WORK. WHERE NEW FLOORING IS REQUIRED, REMOVE EXISTING FLOORING, BASE, ADHESIVE, SETTING BEDS ETC. AS REQUIRED TO ACCOMMODATE INSTALLATION OF NEW WORK. PREPARE EXISTING CONC. SLAB AS REQUIRED (GRIND, FILL ETC.) TO PROVIDE AN ACCEPTABLE SURFACE FOR INSTALLATION OF NEW FLOORING. COORDINATE EXTENT OF NEW FLOORING WITH EXISTING/NEW FLOOR PLAN.
- CONTRACTOR TO MOVE EXISTING FURNITURE, EQUIPMENT, ETC. TO ACCOMMODATE THE WORK. COORDINATE IN ADVANCE WITH OWNER. WHERE EXISTING EQUIPMENT IS TOO CUMBERSOME TO BE RELOCATED, CONTRACTOR IS TO PROTECT SUCH EQUIPMENT FROM DAMAGE DURING THE WORK. ANY EXISTING EQUIPMENT DAMAGED BY CONTRACTOR IS TO BE REPLACED AT CONTRACTORS EXPENSE.
- CONTRACTOR TO COVER EXISTING FURNITURE AND EQUIPMENT TO PROTECT FROM DUST ETC.
- MAINTAIN THE FOLLOWING CLEARANCES FROM EDGE OF DOOR TO WALL, ETC. ON LATCH SIDE OF ALL DOOR OPENINGS:
 - 300mm (MIN.) ON PUSH SIDE OF DOOR.
 - 600mm (MIN.) ON PULL SIDE OF DOOR.
- INSTALL BITUMINOUS COATING BETWEEN ALL DISSIMILAR METALS.
- ANY REQUIRED SHUT DOWN OF EXISTING MECH./ELEC. EQUIPMENT TO BE COORDINATED IN ADVANCE WITH OWNER.
- CONTRACTOR TO TEMPORARILY SUPPORT ALL MECH./ELEC. ITEMS MOUNTED ON/IN CEILING DURING REMOVAL OF EXISTING AND INSTALLATION OF NEW CEILING. COORDINATE EXTENT WITH MECH./ELEC. DRAWINGS.
- CONTRACTOR TO SUSPEND NEW CEILINGS, CONDUITS, ETC. FROM STRUCTURAL BEAMS AND JOISTS. DO NOT PENETRATE EXISTING DECK.
- MAIN CEILING TEES TO RUN IN SAME DIRECTION AS LIGHT FIXTURES.
- MECHANICAL & ELECTRICAL EQUIPMENT MOUNTED IN CEILING TILES TO BE CENTERED IN NEAREST TILE.
- CONTRACTOR TO COORDINATE CEILING GRID LAYOUT AND LOCATION OF FIXTURES & EQUIPMENT IN CEILING PRIOR TO COMMENCEMENT OF THE WORK.
- ARCHITECT SHALL FINALIZE ACTUAL CEILING GRID LAYOUT AND LOCATION OF FIXTURES & EQUIPMENT IN CEILING PRIOR TO COMMENCEMENT OF THE WORK.
- ALL FLOOR BASE TO BE 100mm HIGH U.N.O.
- REFER TO SPECIFICATION FOR HAZARDOUS MATERIALS ABATEMENT AND REPLACEMENT.

CABINETRY NOTES:

- ALL SHELVES TO BE ADJUSTABLE UNLESS NOTED OTHERWISE.
- UPPER CABINETS TO HAVE GLASS DOORS.
- ALL CABINETS TO BE PAINTED STEEL.
- ALL COUNTERTOPS TO BE ACID RESISTANT.
- ALL BASE CABINET COUNTERTOPS TO BE 762mm DEEP.
- ALL KNEE SPACES TO BE 914mm CLEAR WIDTH WITH KNEE SPACE PANEL AT REAR OF CABINET.
- CABINET HEIGHTS AS SHOWN ON ELEVATIONS.
- CONTRACTOR TO CO-ORDINATE DIMENSIONS OF OPENINGS AND EQUIPMENT WITH CLIENT PRIOR TO CONSTRUCTION.

FINISH NOTES:

CEILING:
610x610mm ACOUSTIC TILE AND METAL GRID (CLEAN ROOM GRADE, WASHABLE). REFER TO SPECIFICATIONS. CEILING HEIGHT: 2740mm AFF.

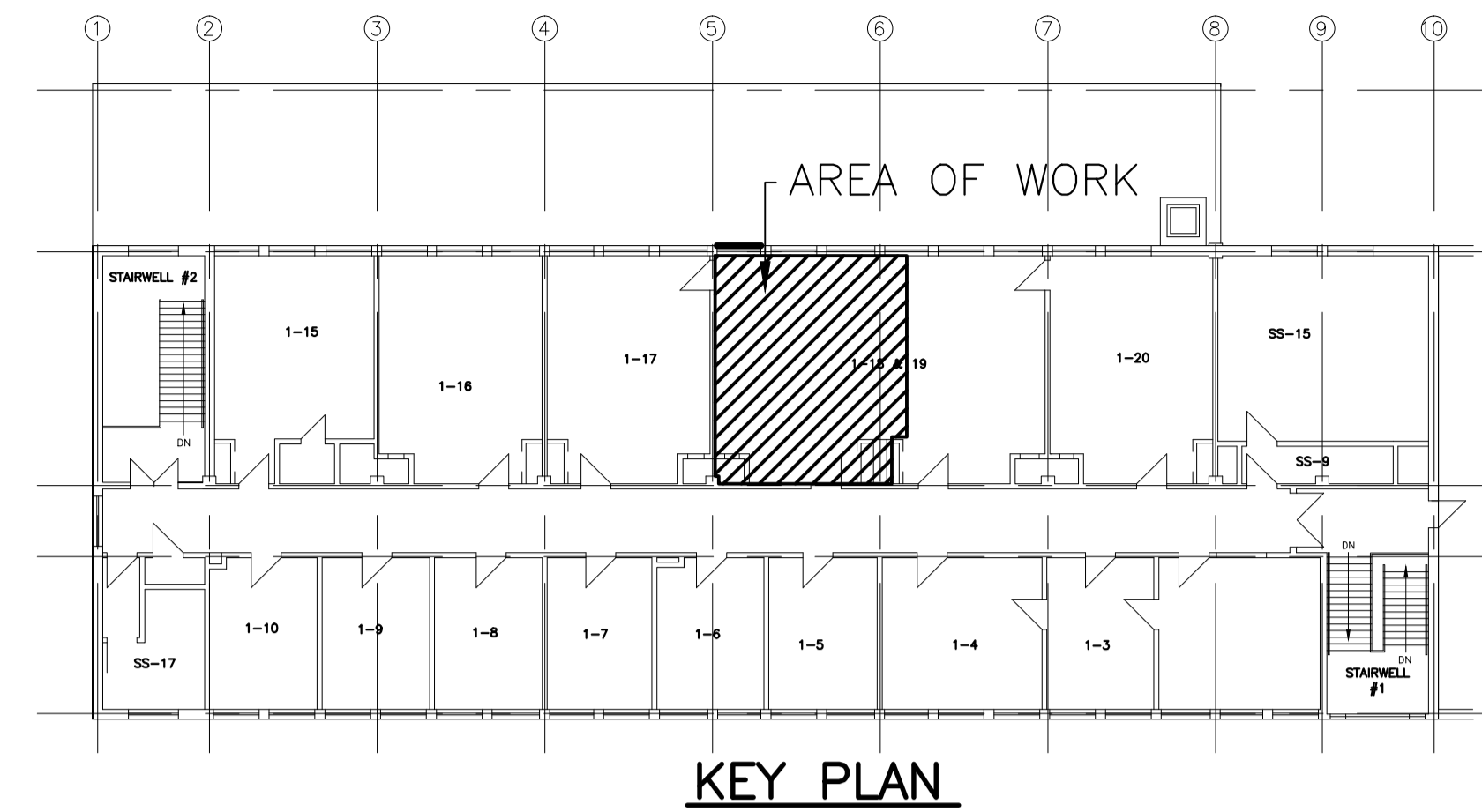
FLOORING:
ARMSTRONG MEDINTECH. HEAT WELD SEAMS. NO EXPOSED SEAMS IN OPEN FLOOR AREA. REFER TO SPECIFICATIONS. COLOR TO BE DETERMINED BY OWNER.

WALLS:
ALL EXISTING/NEW WALLS, FURRINGS AND BULKHEADS FULL EXTENT OF ROOM TO BE PLASTERED AND PAINTED UNLESS NOTED OTHERWISE. COLOR TO BE DETERMINED BY OWNER.

WALL BASE:
NEW RUBBER WALL BASE FULL PERIMETER OF ROOM. COLOR TO BE DETERMINED BY OWNER.

CABINETS:
AIR MASTER SYSTEMS - METAL LABORATORY CASEWORK. COLOR TO BE DETERMINED BY OWNER.

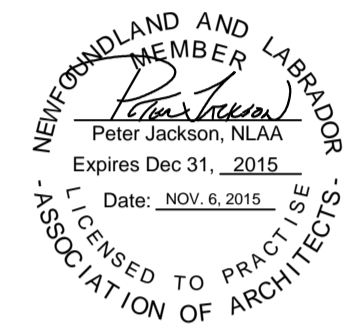
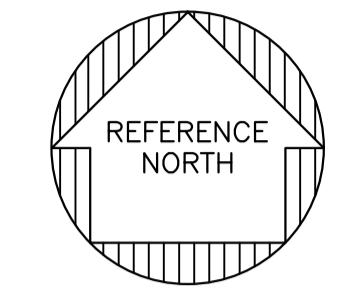
COUNTERTOPS:
EPOXY, BLACK, SEMI GLOSS FINISH.



KEY PLAN

ABBREVIATIONS

COJ	CHECK ON JOB
F	REFRIGERATOR (FULL SIZE)
FIN.	FINISHED
LSD	EXISTING LIQUID SOAP DISPENSER (RELOCATED)
NIC	NOT IN CONTRACT
PTD	EXISTING PAPER TOWEL DISPENSER (RELOCATED)
SIM	SIMILAR
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
U/S	UNDERSIDE
T/O	TOP OF



0	ISSUED FOR TENDER	NOV. 6 2015
revisions		date

project

**PATHOLOGY LAB
RETROFIT
BUILDING #25
BROOKFIELD ROAD
ST. JOHN'S, NL**

drawing / dessin

**GENERAL NOTES
AND KEY PLAN**

designed P. JACKSON / conçu

date NOV. 6, 2015

drawn A. MELVIN / dessiné

date JULY 21, 2015

approved / approuvé

date

Tender / Soumission

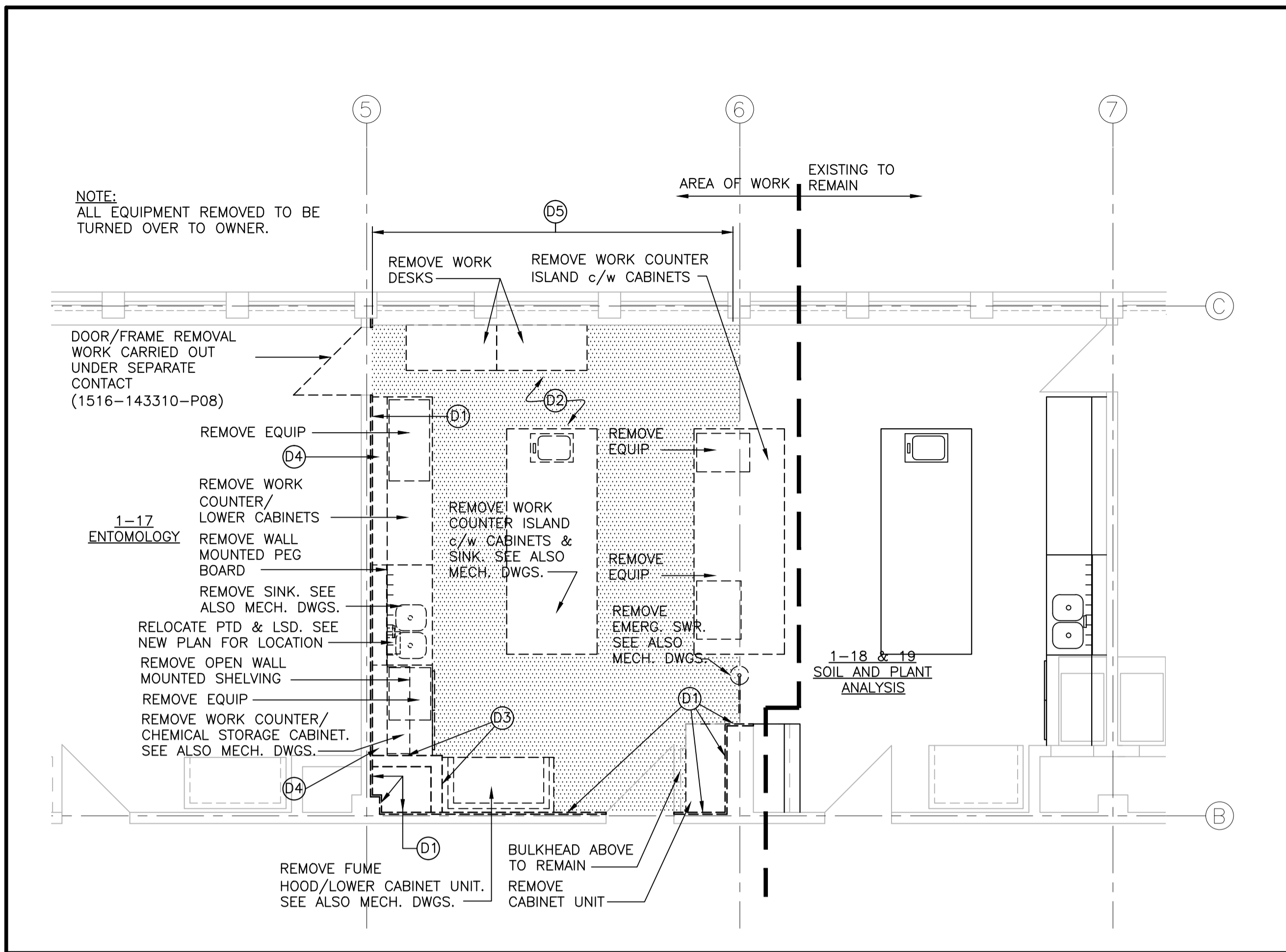
PWGC Project Manager / Administrateur de projets TPSGC

project number / no. du projet

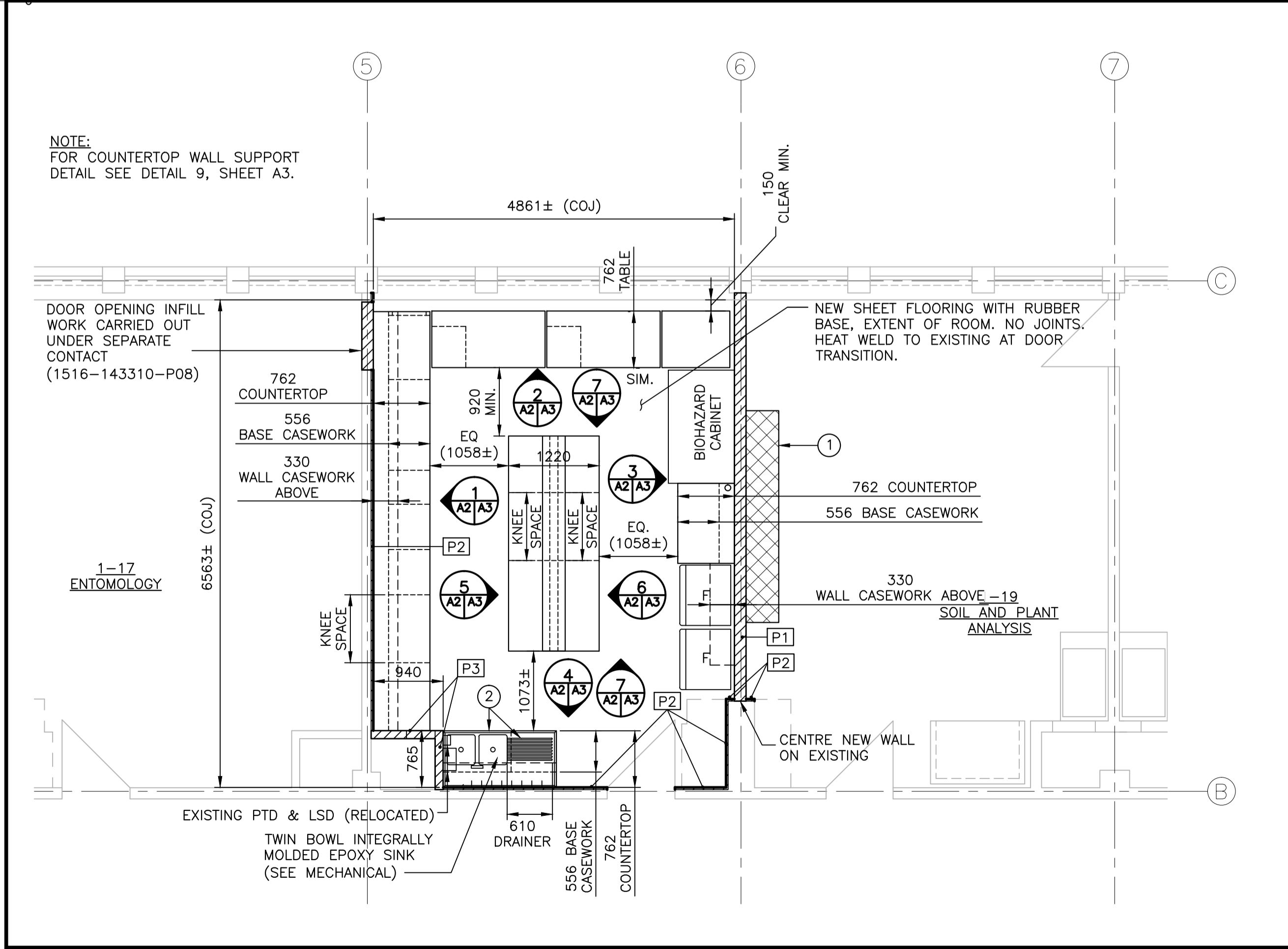
1516-143110-P07

drawing no. / no. du dessin

A1-R0



EXISTING/DEMOLITION LEVEL 1 PARTIAL FLOOR PLAN **1**
A2/A2 SCALE: 1:50



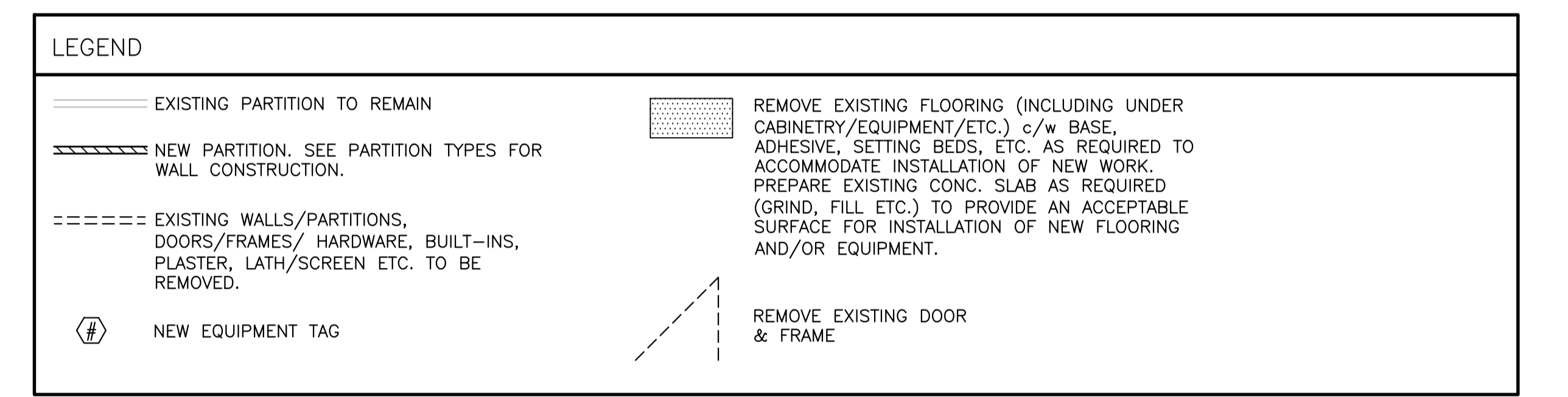
EXISTING/NEW LEVEL 1 PARTIAL FLOOR PLAN **2**
A2/A2 SCALE: 1:50

DEMOLITION KEY NOTES:

- D1 REMOVE ALL HARD WALL PLASTER AND LATH/SCREEN, THIS SIDE OF WALL, FULL LENGTH, TO EXPOSE CLAY TILE MASONRY BACKUP. CLEAN, PATCH AND GRIND CLAY TILE BACKUP TO CREATE SUBSTRATE SUITABLE TO RECEIVE NEW DRYWALL/ DRYWALL FURRINGS.
- D2 REMOVE EXISTING CEILING SYSTEM, INCLUDING PLASTER, LATH/SCREEN AND SUPPORTING STRUCTURE. EXTENT OF DEMOLITION TO INCLUDE FROM GRID B TO C & 5 TO 6 (ALL AREA TO COMPRISE OF NEW ROOM 1-18). EXISTING CEILING SYSTEM IN ROOM 1-19 SOIL AND PLANT ANALYSIS TO REMAIN. MODIFY EXISTING CEILING SUPPORT SYSTEM AS NECESSARY, INCLUDING SUPPLY/INSTALLATION OF ANY ADDITIONAL SUPPORT REQUIRED, DUE TO ADJACENT DEMOLITION WORK.
- D3 REMOVE COMPLETE WALL STRUCTURE (HARD WALL PLASTER, LATH/SCREEN, CLAY TILE). SEE ALSO MECH./ELEC. DWGS.
- D4 REMOVE ENTIRE GYPSUM BOARD WALL CHASE BEHIND MILLWORK, FULL LENGTH OF WALL. SEE MECH./ELEC. DWGS FOR REMOVAL OF MECH./ELEC. ITEMS IN CHASE.
- D5 HAZARDOUS MATERIALS ABATEMENT REMOVAL TO ALSO INCLUDE REMOVAL OF INSULATION AROUND PIPING FULL LENGTH OF WALL IN AREA OF RADIATOR CABINETS. SEE ALSO MECHANICAL DRAWINGS. FOR FULL EXTENT OF HAZARDOUS MATERIALS ABATEMENT REMOVAL (INCLUDING MATERIALS & SYSTEMS) TO BE CARRIED OUT UNDER PROJECT SEE SPECIFICATION.

NEW CONSTRUCTION KEY NOTES:

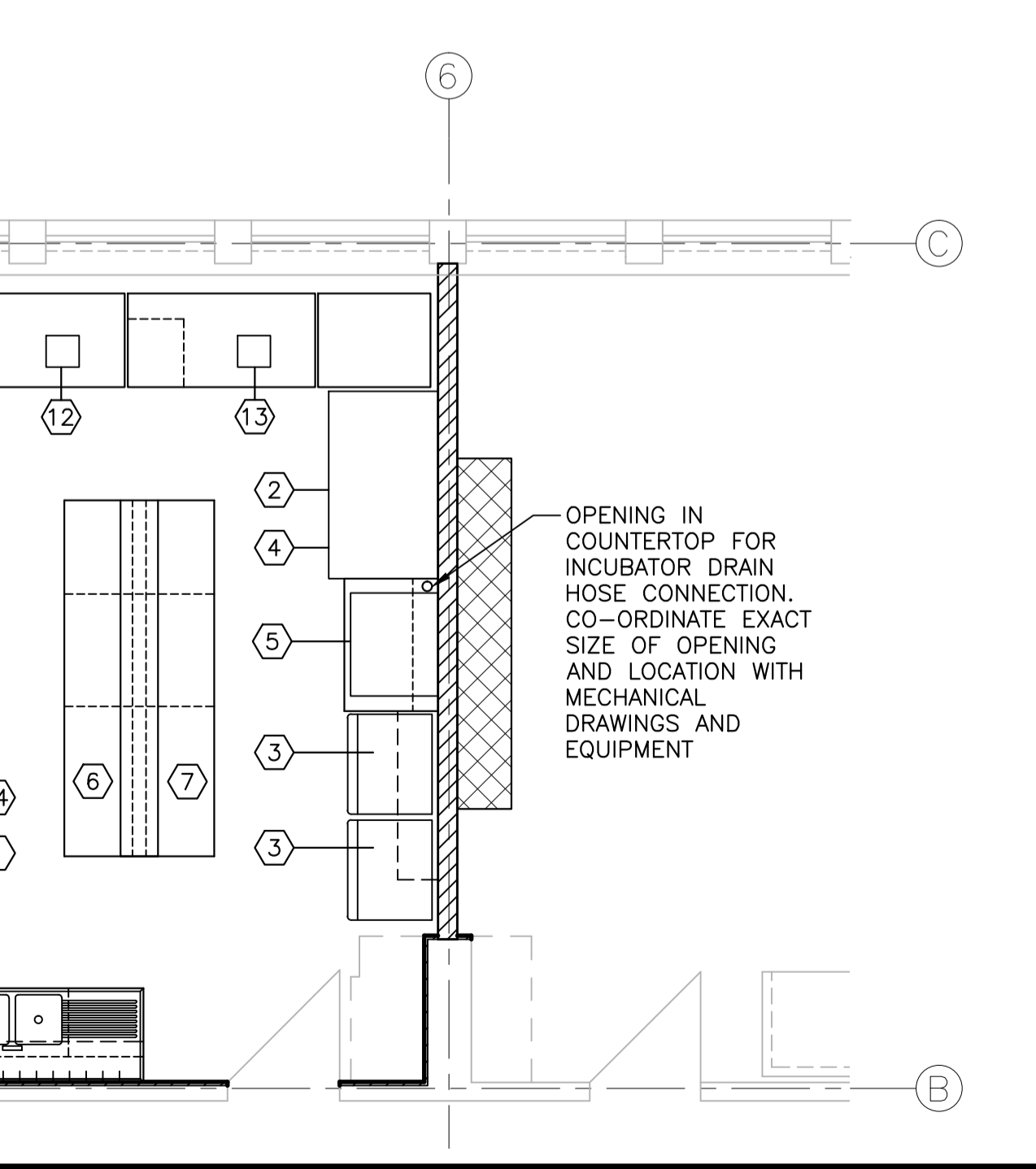
- 1 IN ROOM 1-19 SOIL AND PLANT ANALYSIS, IN AREA WHERE EXISTING MILLWORK ISLAND REMOVED, PATCH, REPAIR AND MAKE GOOD CONCRETE FLOOR LEFT DAMAGED BY DEMOLITION WORK AS REQUIRED. FILL-IN WITH NEW FLOOR COVERING TO MATCH EXISTING FLOORING IN ROOM AS REQUIRED IF EXISTING FLOOR COVERING DAMAGED.
- 2 INTEGRALLY MOLDED CONTAINMENT EDGE PERIMETER OF SINK/DRAINER (4 SIDES). DRAINER SLOPED TO SINK.



PARTITION TYPES LEGEND

Partition Type	Construction Details	Notes
P1	FRR - 16mm TYPE X GYPSUM BOARD, PAINTED (RM 1-18) - 152mm METAL STUDS @ 400mm O.C. - 16mm TYPE X GYPSUM BOARD, UNPAINTED (RM 1-19)	NOTES: EXTEND ALL TO U/S METAL DECK. IN ROOM 1-19 TAPE/PLASTER WALL ONLY. NO PAINT.
P2	FRR - 16mm TYPE X GYPSUM BOARD, PAINTED - 13mm METAL FURRING CHANNEL @ 400mm c/c MAX. - EXISTING WALL CONSTRUCTION	NOTES: EXTEND TO U/S METAL DECK
P3	FRR - 16mm TYPE X GYPSUM BOARD, PAINTED - 92mm METAL STUD	NOTES: EXTEND ALL TO U/S METAL DECK

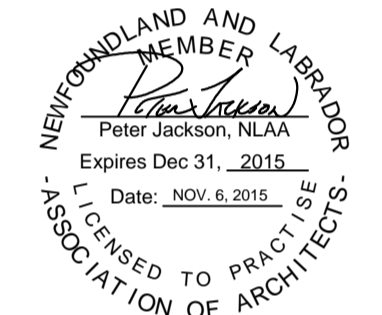
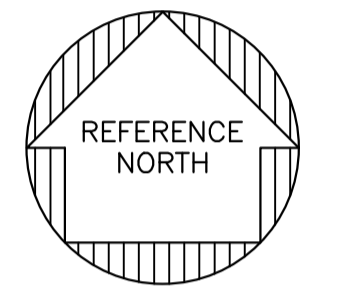
- EQUIPMENT LIST:**
- 1 LIGHT MICROSCOPE WITH CAMERA (NIC)
 - 2 BIOHAZARD CABINET (NIC)
 - 3 FULL SIZE REFRIGERATOR (NIC)
 - 4 UV LIGHT HOOD (NIC)
 - 5 INCUBATOR (NIC)
 - 6 PCR (NIC)
 - 7 REAL-TIME PCR (NIC)
 - 8 GEL ELECTROPHORESIS SYSTEM (NIC)
 - 9 MICROCENTRIFUGES (NIC)
 - 10 MICROWAVE (NIC)
 - 11 ORBITAL SHAKER (NIC)
 - 12 COMPOUND MICROSCOPE (NIC)
 - 13 STEREO MICROSCOPE (NIC)
 - 14 COMPUTER (NIC)



PATHOLOGY LAB EQUIPMENT LAYOUT **3**
A2/A2 SCALE: 1:50

NOTES:

1. FOR GENERAL NOTES, CABINETS NOTES AND FINISH NOTES SEE SHEET A1.



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project		project

PATHOLOGY LAB RETROFIT BUILDING #25 BROOKFIELD ROAD ST. JOHN'S, NL

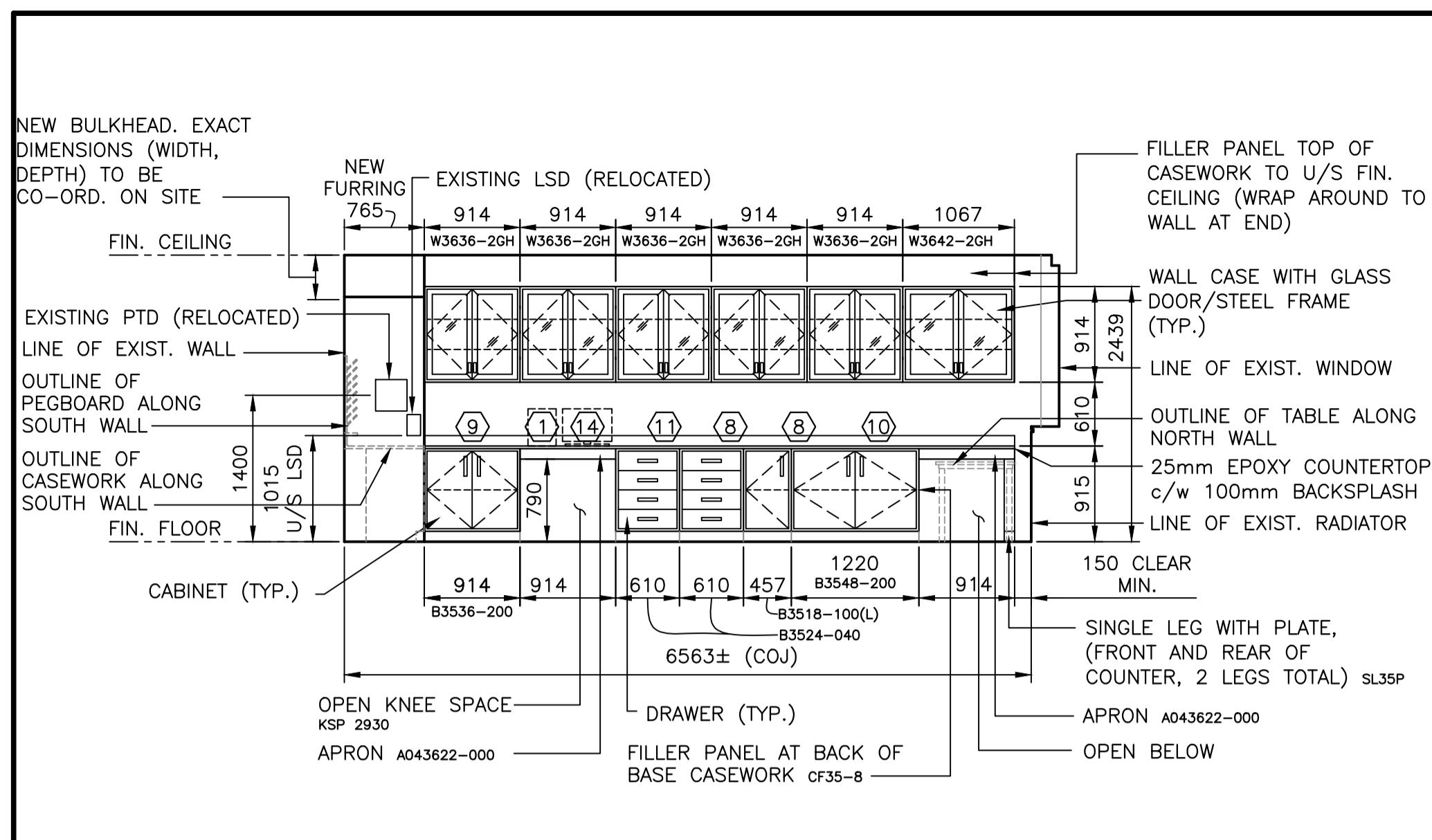
EXISTING/DEMOLITION/NEW LEVEL 1 PARTIAL FLOOR PLANS

designed	P. JACKSON	conçu
date	NOV. 6, 2015	
drawn	A. MELVIN	dessiné
date	JULY 21, 2015	
approved		approuvé
date		
Tender		Soumission

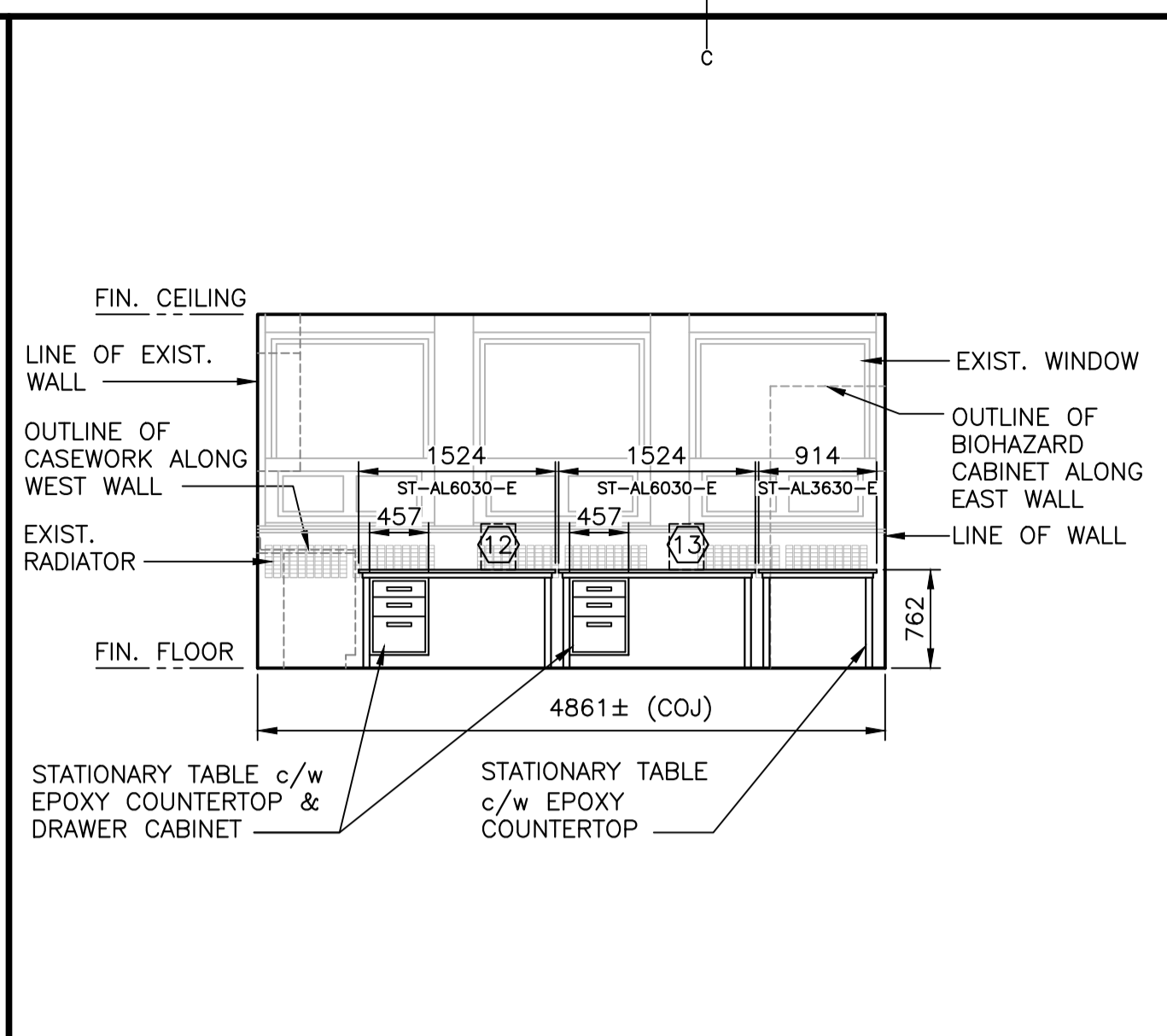
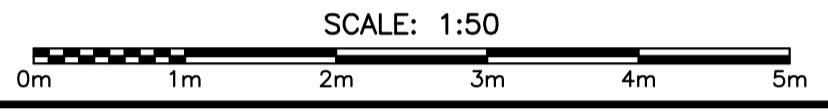
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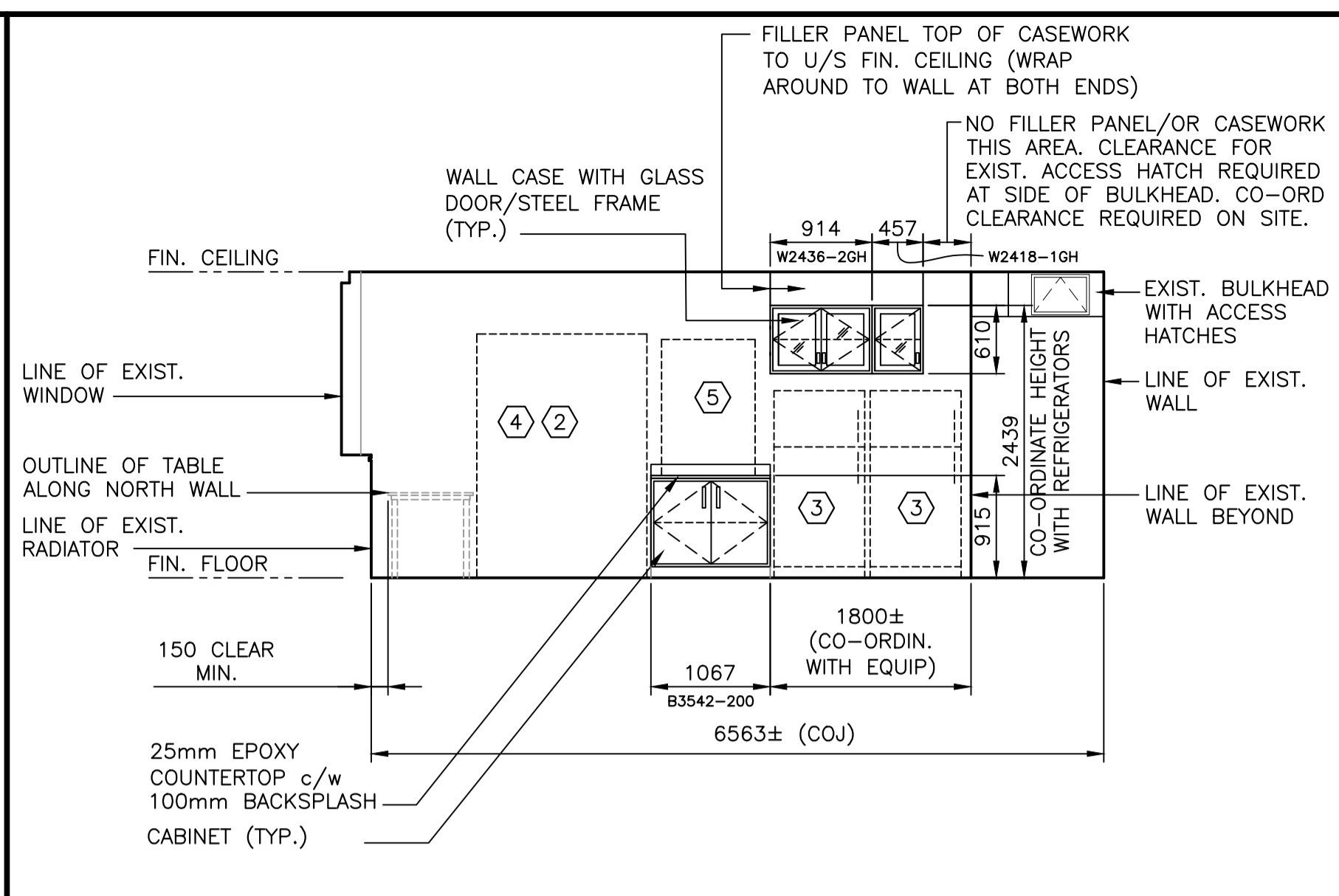
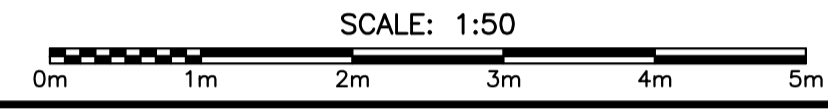
A2-R0



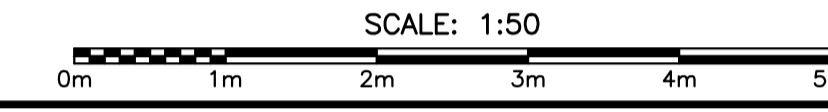
CASEWORK ELEVATION – WEST WALL



CASEWORK ELEVATION – NORTH WALL

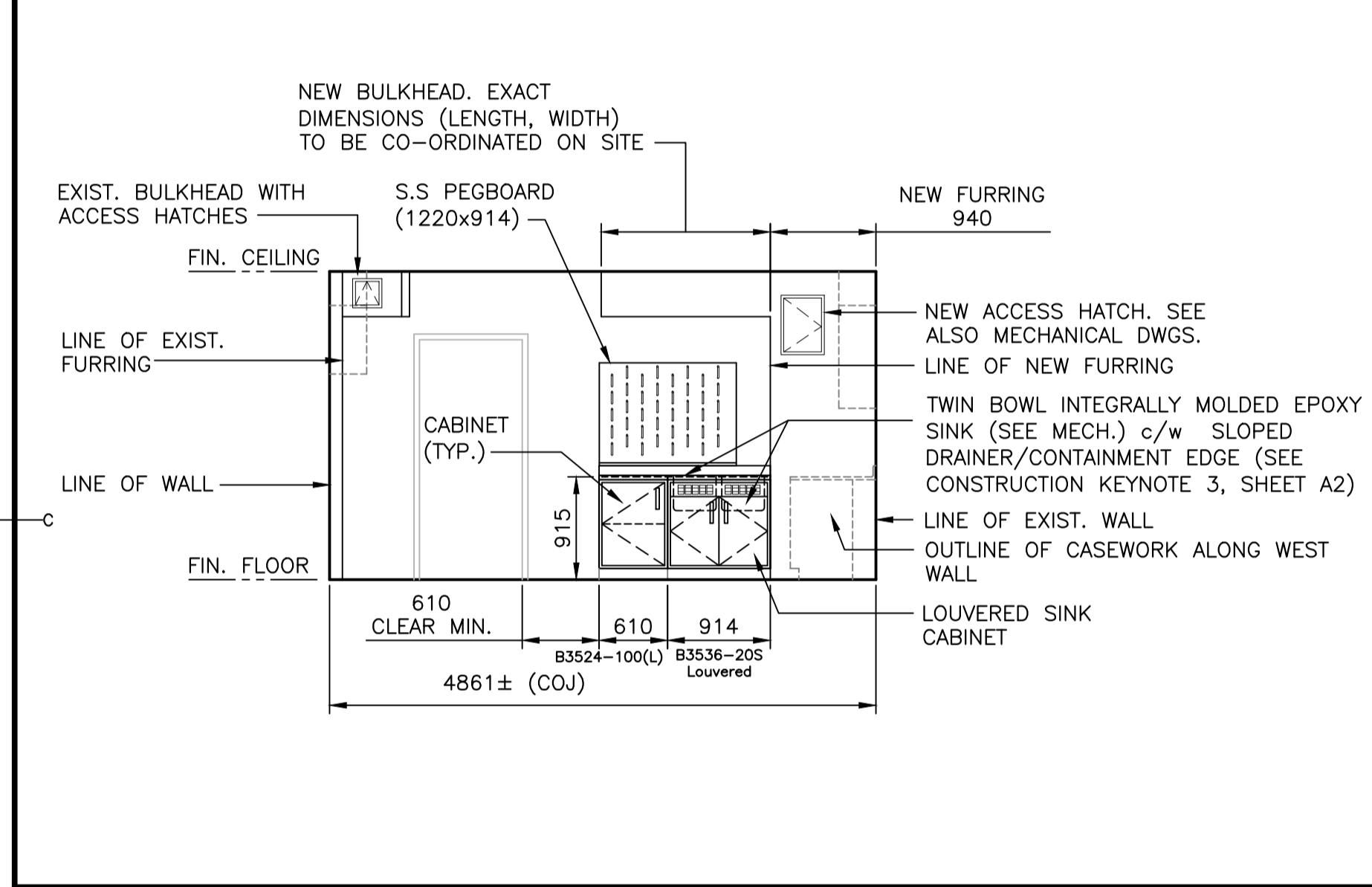
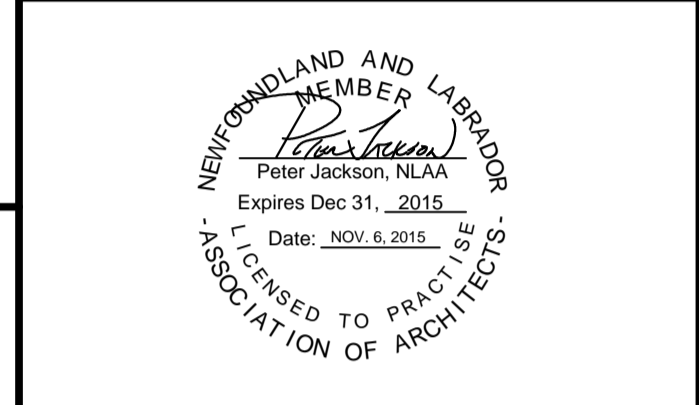


CASEWORK ELEVATION – EAST WALL

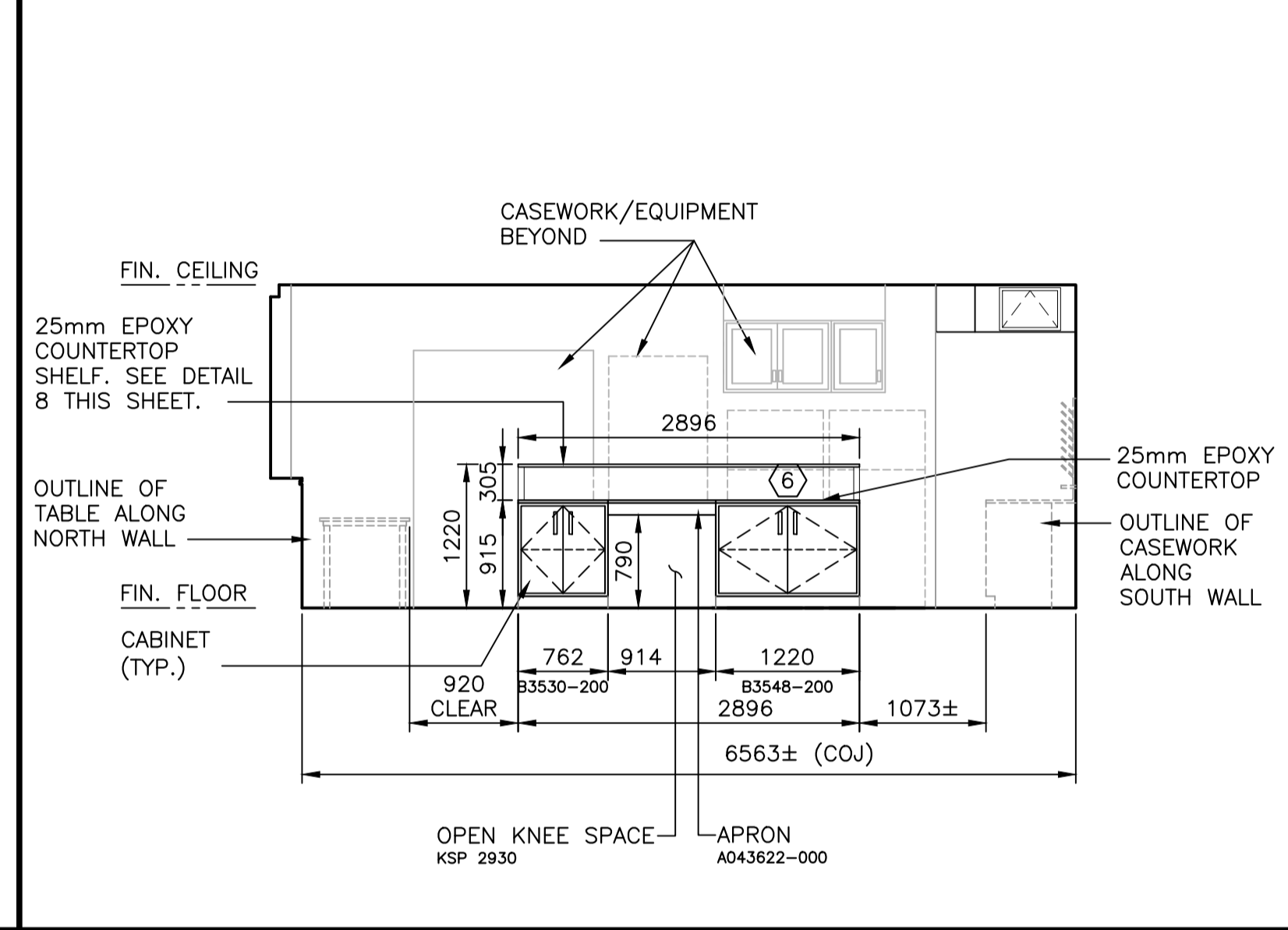
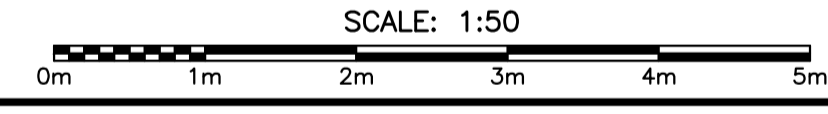


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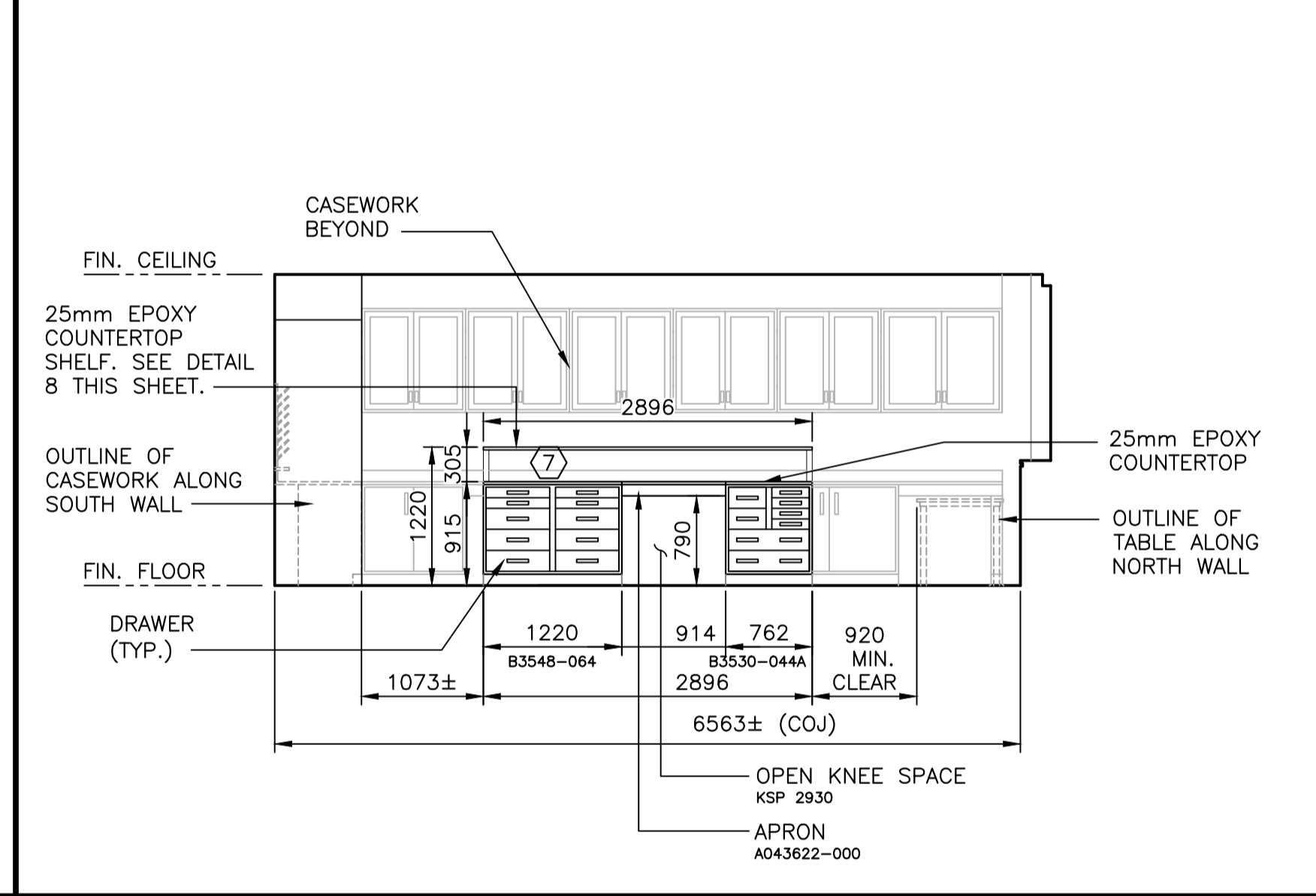
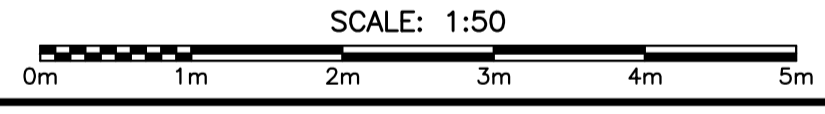
- FOR EQUIPMENT LIST AND LEGEND SEE SHEET A2.
- FOR GENERAL NOTES, CABINETRY NOTES AND FINISH NOTES SEE SHEET A1.
- WHERE DISCREPANCY EXISTS BETWEEN CASEWORK PART NUMBER AND DIMENSIONS SHOWN ON DRAWINGS, DIMENSIONS TO GOVERN.



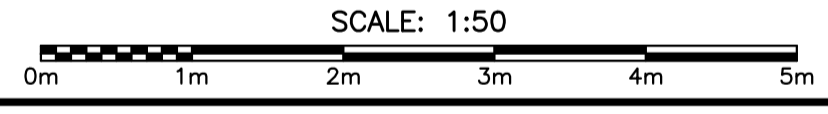
CASEWORK ELEVATION – SOUTH WALL



CASEWORK ELEVATION – ISLAND



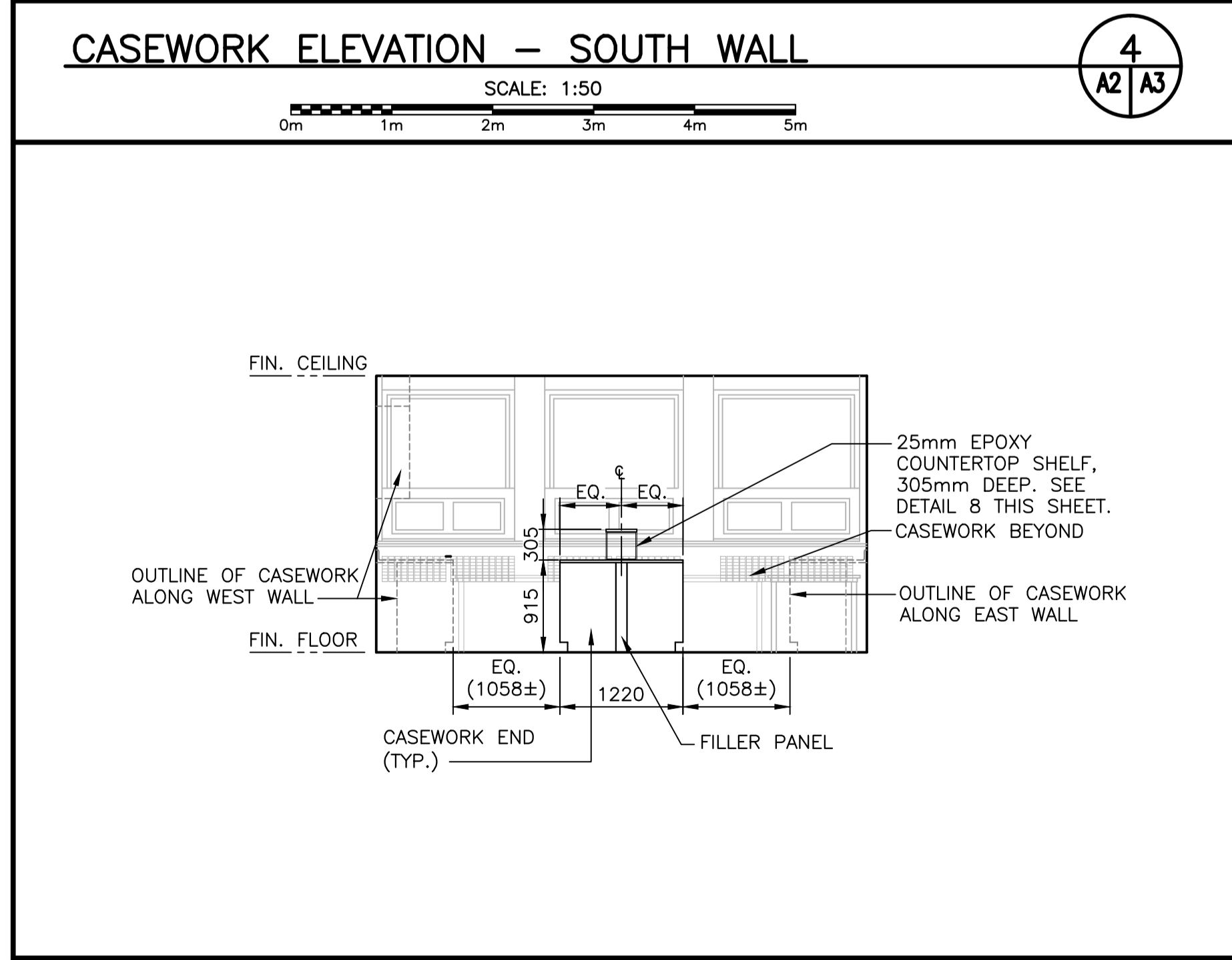
CASEWORK ELEVATION – ISLAND



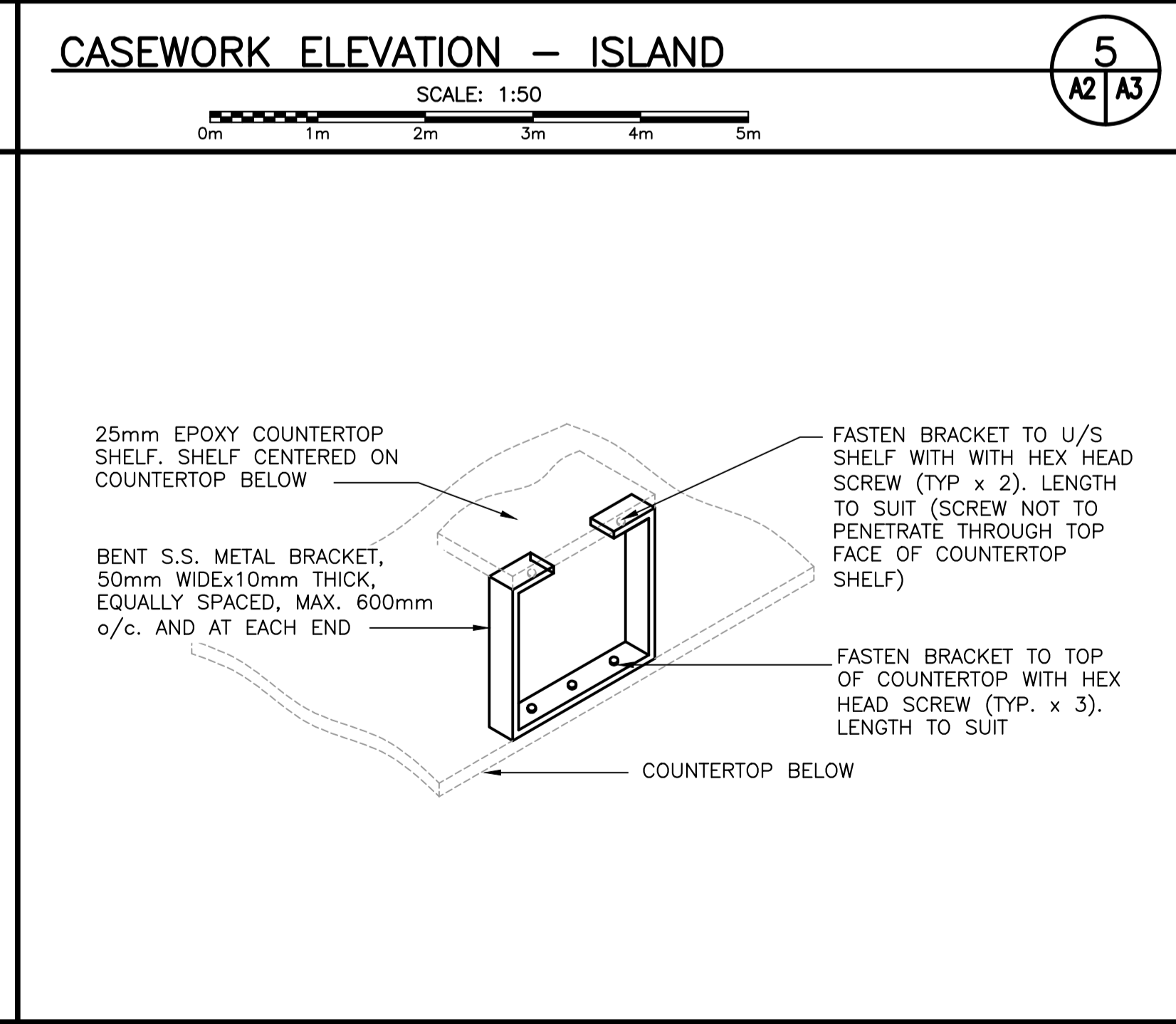
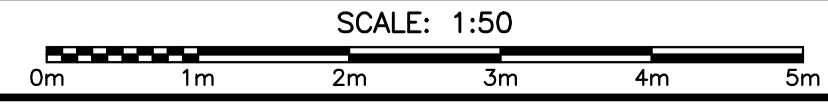
0	ISSUED FOR TENDER	NOV. 6, 2015
revisions		date
project		project

**PATHOLOGY LAB
RETROFIT
BUILDING #25
BROOKFIELD ROAD
ST. JOHN'S, NL**

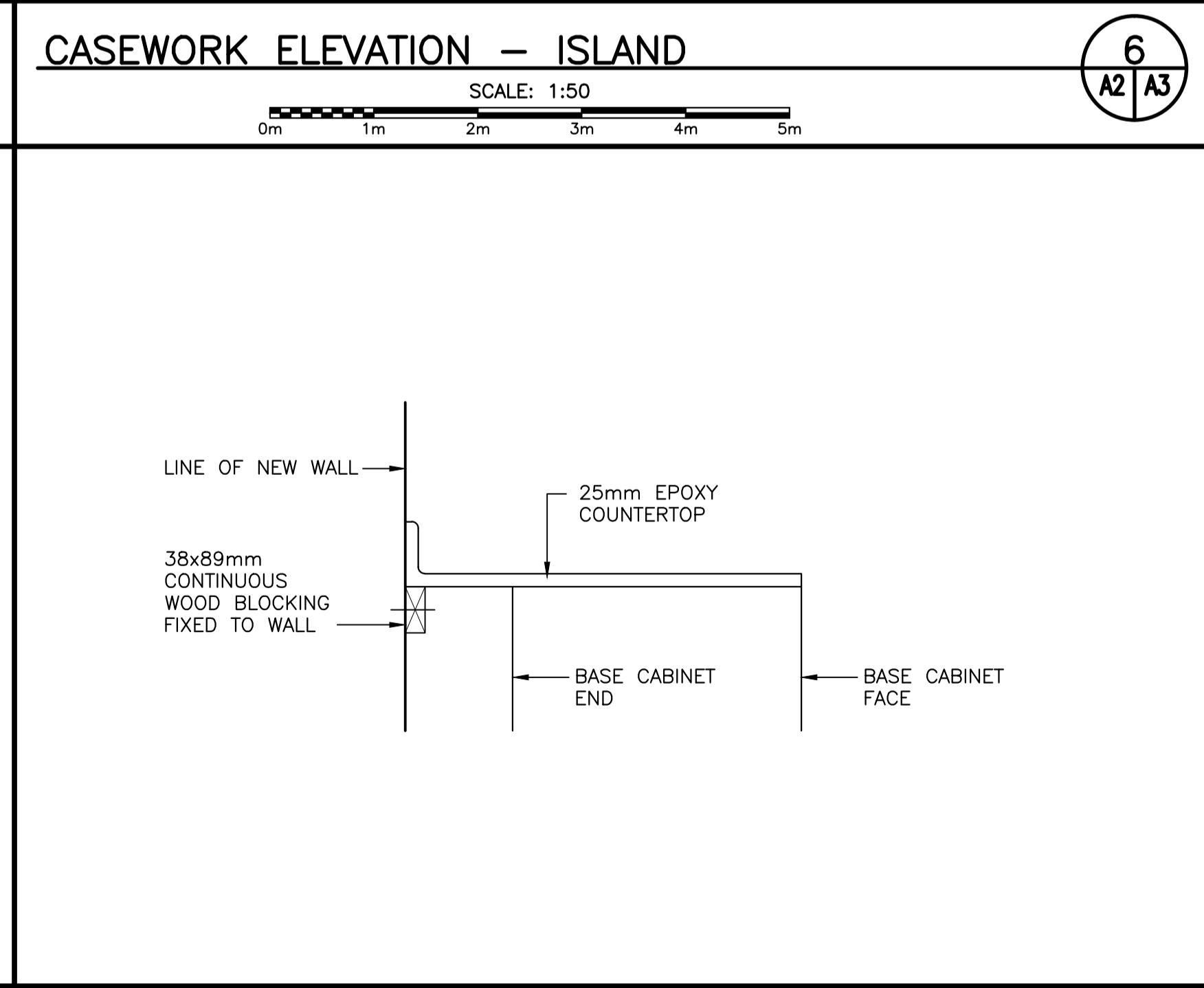
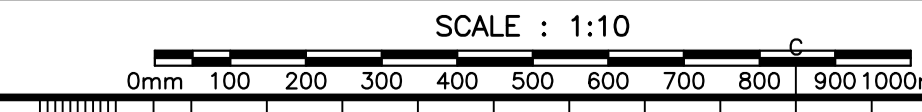
drawing	dessin
CASEWORK ELEVATIONS	
designed	P. JACKSON
date	NOV. 6, 2015
drawn	A. MELVIN
date	JULY 21, 2015
approved	
date	
Tender	Soumission
PWGSC Project Manager	Administrateur de projets TPSGC
project number	no. du projet
1516-143110-P07	
drawing no.	no. du dessin
A3-R0	



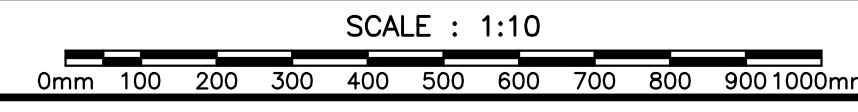
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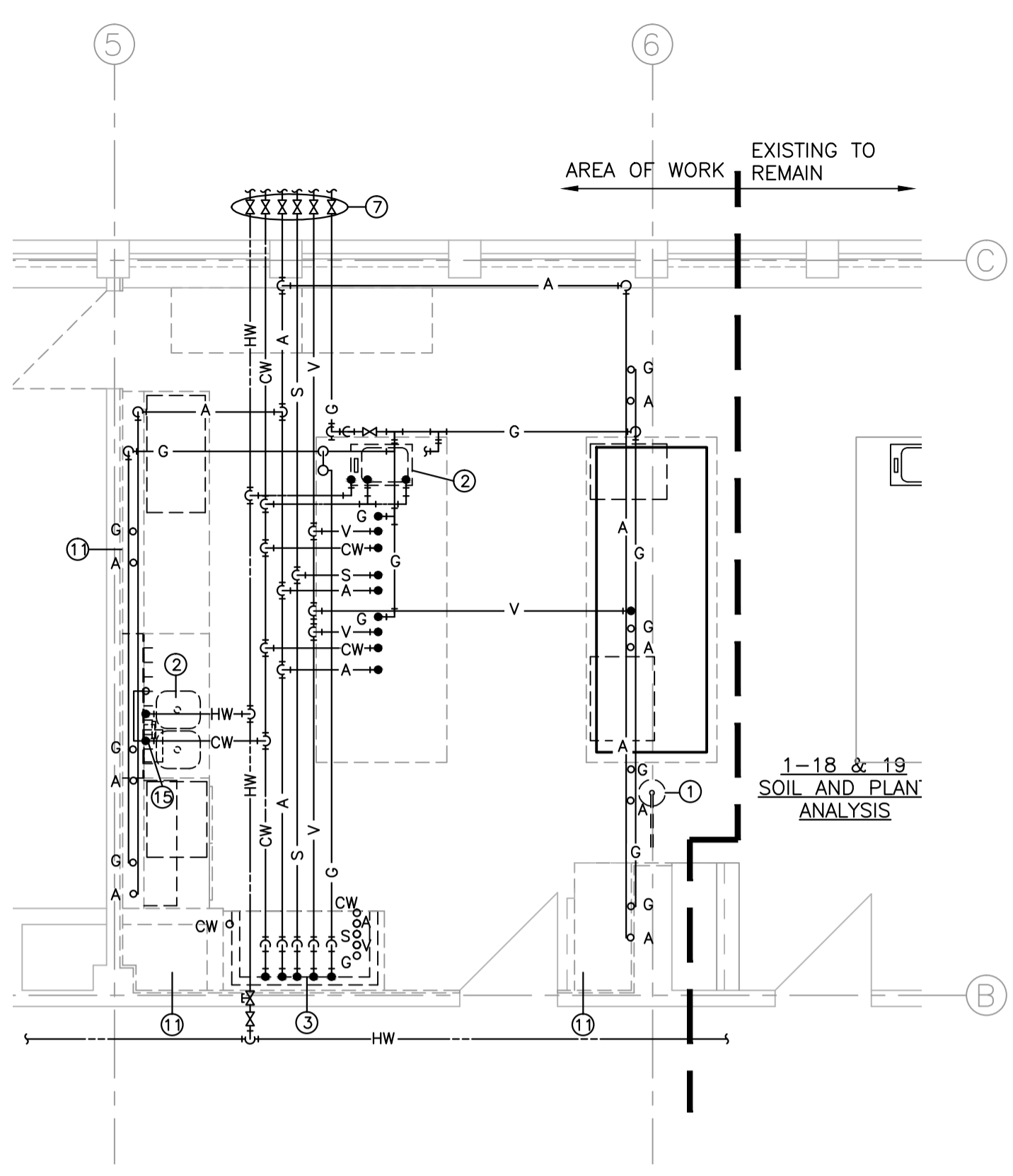
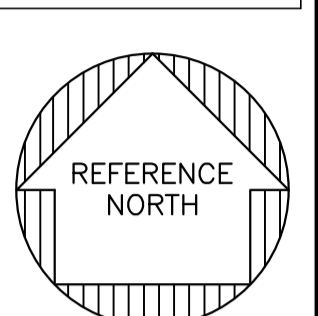
ISLAND SHELF BRACKET DETAIL



COUNTERTOP WALL SUPPORT DETAIL

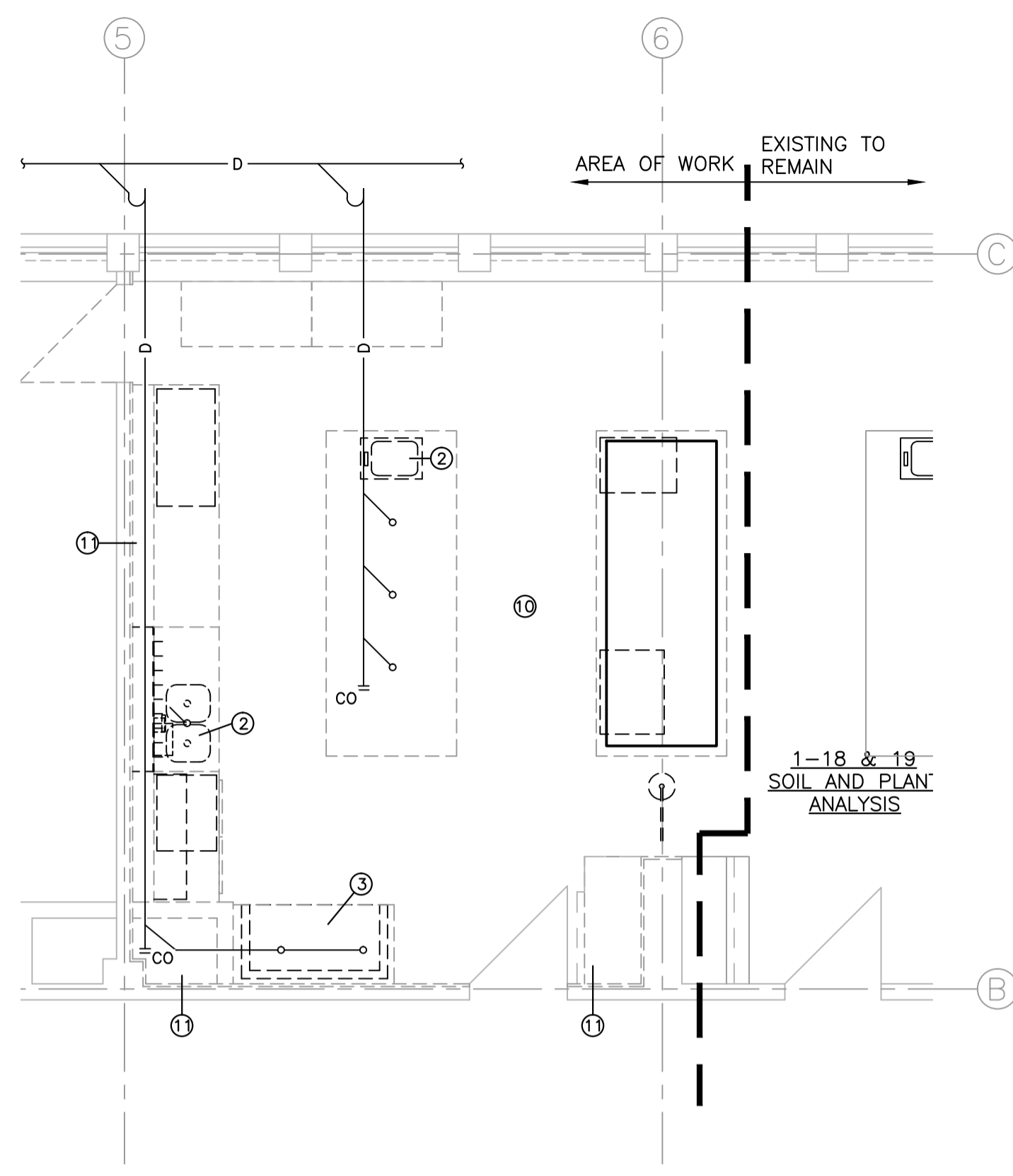
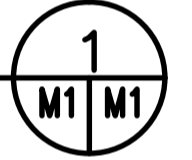


PROVINCE OF NEWFOUNDLAND AND LABRADOR
PEGL
 PERMIT HOLDER CLASS 7
 This Permit Allows
 WSP CANADA INC.
 To practice Professional Engineering in Newfoundland and Labrador.
 Permit No. as issued by PEGL 16075.
 which is valid for the year 2015.



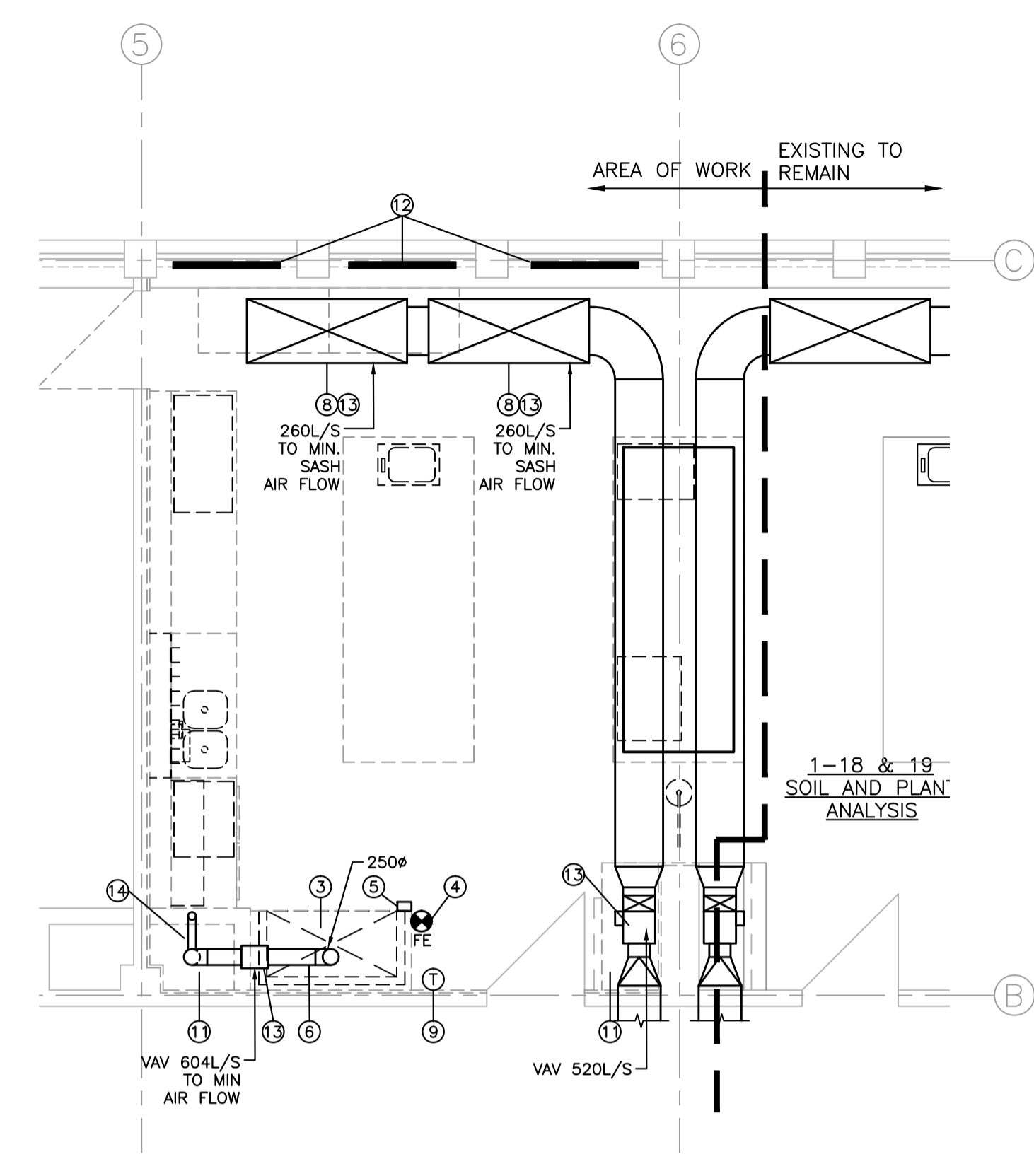
PATHOLOGY DW AND GAS SERVICES DEMOLITION PLAN

SCALE: 1:50
 0m 1m 2m 3m 4m 5m



PATHOLOGY DWV DEMOLITION PLAN

SCALE: 1:50
 0m 1m 2m 3m 4m 5m



PATHOLOGY HVAC DEMOLITION PLAN

SCALE: 1:50
 0m 1m 2m 3m 4m 5m



PIPING LEGEND

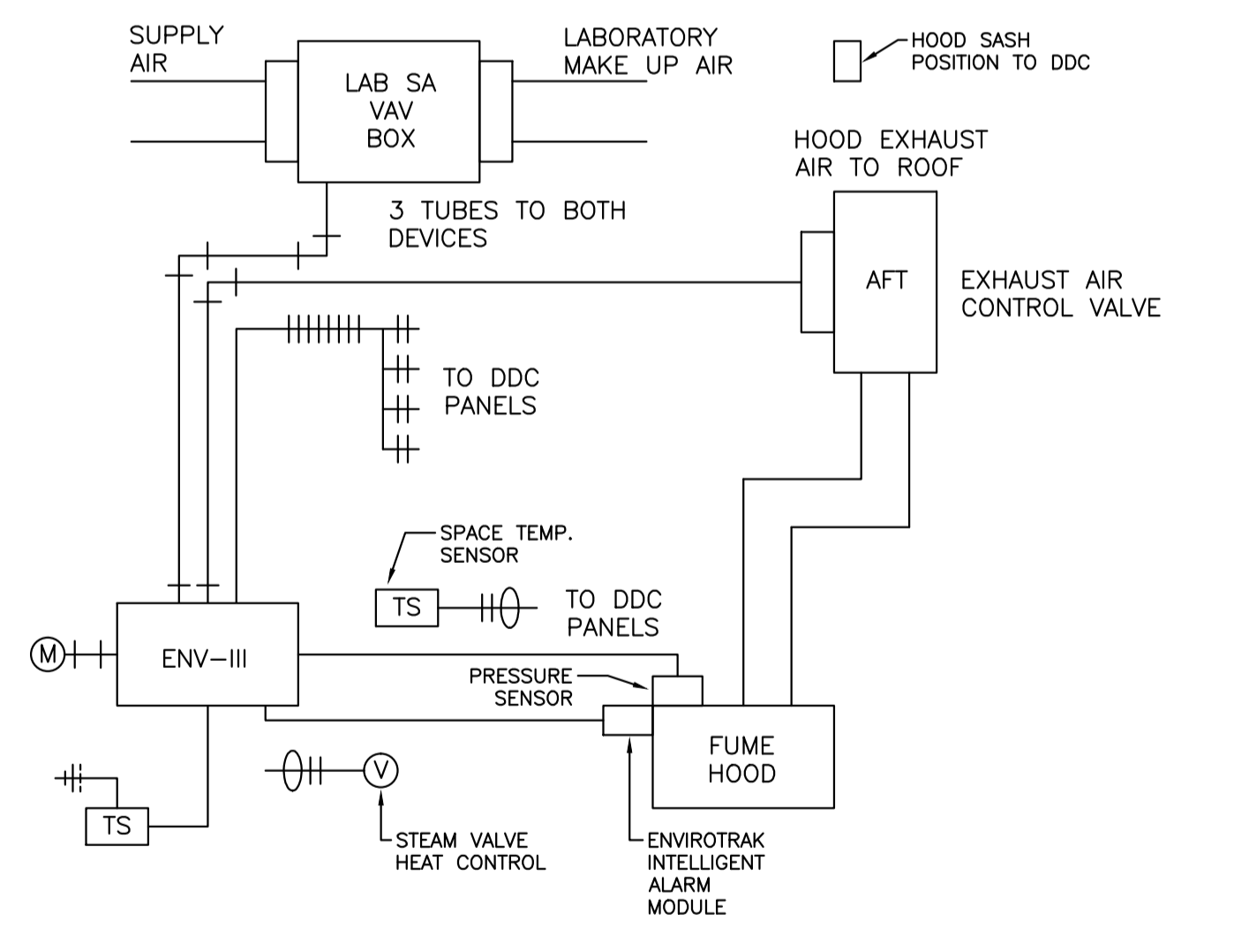
- CW DOMESTIC COLD WATER
- HW DOMESTIC HOT WATER
- D DRAINAGE LINE
- G GAS LINE
- V VACUUM LINE
- S STEAM LINE
- A AIR LINE
- VALVE
- CO CLEANOUT
- PIPE CAP

HVAC LEGEND

- EXISTING VAV BOX
- EXISTING INSULATED DUCTWORK
- FE EXISTING FIRE EXTINGUISHER
- EXISTING RADIATOR
- EXISTING SUPPLY AIR
- EXISTING SASH VOLUME CONTROL
- EXISTING PNEUMATIC THERMOSTAT

- GENERAL NOTES:**
- CONTRACTOR TO VERIFY ALL DIMENSIONS & EXISTING CONDITIONS ON SITE. ANY DISCREPANCIES OR UNSATISFACTORY CONDITIONS TO BE REPORTED TO THE DEPARTMENTAL REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.
 - COORDINATE ALL MECHANICAL WORK ON SITE WITH THE DEPARTMENTAL REPRESENTATIVE.
 - INFORMATION PERTAINING TO EXISTING EQUIPMENT SHOWN ON THESE DRAWINGS IS BASED ON AS-BUILT INFORMATION AND MAY NOT FULLY OR ACCURATELY REFLECT THE EXISTING CONDITIONS. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF ARCHITECTURAL WORK. CONTRACTOR TO VISIT SITE BEFORE TENDER CLOSES TO CONFIRM SCOPE OF WORK AND DETAILS OF EXISTING CONDITIONS. MAKE ARRANGEMENTS WITH DEPARTMENTAL REPRESENTATIVE IN RELATION TO SAME.
 - ALL EXISTING PIPING SERVICES RUN CONCEALED IN ARCHITECTURAL ASSEMBLIES OR EXPOSED BELOW FLOOR.
 - WHERE PIPING SERVICES ARE CALLED UP TO BE REMOVED COMPLETE, ALL REDUNDANT SERVICES TO BE CAPPED CONCEALED IN ARCHITECTURAL ASSEMBLIES OR BELOW FLOOR. CAP PIPING SERVICES OR DUCT SERVICES BACK WITHIN 150mm OF PIPE MAIN OR DUCT BRANCH RESPECTIVELY.
 - COORDINATE REMOVAL OF ALL CONTROL WIRING AND LINE VOLTAGE WIRING WITH GENERAL CONTRACTOR, "CONTROLS UPGRADE CONTRACTOR" AND ELECTRICAL CONTRACTOR IN THE FIELD. WIRING 50V AND BELOW BY CONTROLS, WIRING ABOVE 50V BY ELECTRICAL.
 - EXISTING ACID DRAIN PIPING IS GLASS TYPE. NEW PIPING TO BE RUN USING PIPING AS DESCRIBED IN "SECTION 22 13 19 - DRAINAGE WASTE AND VENT. PIPING-CORROSION PLASTIC RESISTANT". COORDINATE EXACT LOCATION AND REQUIREMENTS FOR CONNECTION OF NEW PIPING TO EXISTING, EXISTING PIPING TO BE REMOVED AND REINSTALLED AND EXISTING PIPING TO BE REMOVED IN THE FIELD WITH DEPARTMENTAL REPRESENTATIVE.
 - EXISTING ACCESS HATCHES ASSOCIATED WITH THE REMOVAL OF EXISTING ARCHITECTURAL SURFACES/FURRINGS/CHASES TO BE REPLACED WITH NEW FIRE RATED ACCESS PANELS AFTER REINSTATEMENT OF ARCHITECTURAL SURFACES/FURRINGS/CHASES. REROUTE ALL EXISTING MECHANICAL SERVICES TO REMAIN THAT WERE REMOVED TO FACILITATE THE RENOVATIONS AND INSTALL NEW MECHANICAL SERVICES IN CHASES PROVIDED WITH LAB CASEWORK. COORDINATE ALL WORK WITH THE LAB CASEWORK SHOP DRAWINGS, THE GENERAL CONTRACTOR, OTHER TRADES AND THE DEPARTMENTAL REPRESENTATIVE IN THE FIELD.
 - CONTROL SCHEMATIC & SEQUENCE TAKEN FROM CONTROLS AS-BUILTS. CONFIRM EXACT DETAILS ON SITE. UNDER THIS CONTRACT, ALL CONTROL WORK WILL BE DONE BY "CONTROLS UPGRADE CONTRACTOR". COORDINATE ALL CONTROL WORK WITH THIS CONTRACTOR. SCHEMATIC DETAILS SHOWN FOR REFERENCE ONLY. FOR FINAL DETAILS, REFER TO "CONTROLS UPGRADE CONTRACTOR" APPROVED SHOP DRAWINGS.
 - TAB (TESTING, ADJUSTING AND BALANCING)
 - TAB CONTRACTOR SHALL: BALANCE AIR SYSTEMS AS SHOWN ON THE DRAWINGS; PERFORMANCE TOLERANCE SHALL BE 5% OF DESIGN VALUES; CONTRACTOR SHALL BE NEBB CERTIFIED AND TAB REPORT DONE TO NEBB STANDARDS; AND TAB REPORT DONE TO SUBMIT ONE COPY OF REPORT.
 - SUBMIT TAB REPORT TO OWNERS REPRESENTATIVE FOR APPROVAL SHOWING:
 - MAXIMUM & MINIMUM AIR FLOW BEFORE WORK STARTS.
 - MAXIMUM & MINIMUM AIR FLOW AFTER COMPLETION OF PROJECT.
 - INSULATE ALL NEW HOT AND COLD WATER WITH 25mm FIBERGLASS PIPE INSULATION WITH ALL SERVICE JACKED. TAPE AND SEAL ALL JOINTS. ALL MATERIALS SHALL HAVE A MAXIMUM FLAME SPREAD RATING LESS THAN 25 AND A MAXIMUM SMOKE DEVELOPMENT OF LESS THAN 50 IN ACCORDANCE WITH CAN/ULC S102.

- DEMOLITION NOTES:**
- EXISTING EMERGENCY SHOWER STATION TO BE REMOVED COMPLETE.
 - REMOVE EXISTING STAINLESS STEEL SINK, SINK FITTINGS, ALL ASSOCIATED PIPING SERVICES AND AUXILIARIES COMPLETE.
 - REMOVE EXISTING FUME HOOD, CONTROLS, WIRING ALL ASSOCIATED PIPING SERVICES AND AUXILIARIES COMPLETE. COORDINATE CONTROLS WITH "CONTROLS UPGRADE CONTRACTOR".
 - EXISTING FIRE EXTINGUISHER TO BE REMOVED. SAVE FOR REUSE IN NEW LAYOUT.
 - EXISTING LAB SASH AIR VOLUME CONTROL TO BE REMOVED COMPLETE. SEE TYPICAL FUME HOOD CONTROL DETAIL AND SEQUENCE OF OPERATION THIS DRAWING.
 - EXISTING SS FUME EXHAUST DUCT TO BE REMOVED TO THIS APPROXIMATE LOCATION. SAVE FOR REUSE IN NEW LAYOUT. EXISTING EXHAUST VAV BOX TO REMAIN.
 - EXISTING PIPING SERVICES ISOLATION VALVES.
 - EXISTING LAMINAR FLOW SUPPLY AIR DIFFUSERS TO BE REMOVED TO FACILITATE THE INSTALLATION OF NEW SURFACES. EXTEND DUCTWORK AS REQUIRED.
 - EXISTING PNEUMATIC THERMOSTAT AND CONTROLS TO BE REMOVED COMPLETE.
 - UNDER THIS CONTRACT, COMPLETE ASBESTOS ABATEMENT OF THE LABS WILL OCCUR. THIS WORK INCLUDES BUT IS NOT LIMITED TO REMOVAL OF: EXISTING ASBESTOS CONTAINING GYPROC WALLS, CEILINGS, TILES, FURRINGS, GYPROC BEHIND FURRINGS & PIPE INSULATION COVERINGS ASSOCIATED WITH THE RENOVATED AREA. EXTENT OF WORK TO BE FIELD DETERMINED. COORDINATE THE REMOVAL OF EXISTING MECHANICAL TO REMAIN IN FURRINGS, ABOVE CEILINGS & IN CHASES WITH GENERAL CONTRACTOR, OTHER TRADES & THE DEPARTMENTAL REPRESENTATIVE. REMOVED SURFACES INDICATED WITH DASHED LINES. FOR EXTENT OF DEMOLITION, REFER TO ARCHITECTURAL DRAWINGS.
 - EXISTING ARCHITECTURAL ASSEMBLY HOUSING ELECTRICAL RECEPTACLES, ELECTRICAL, MECHANICAL, PIPING SERVICES, ETC. TO BE REMOVED COMPLETE.
 - EXISTING ARCHITECTURAL ASSEMBLY HOUSING RADIATORS, STEAM PIPING, VALVES, CONTROLS, ETC. TO REMAIN. COORDINATE WITH GENERAL CONTRACTOR, LOCATION OF ARCHITECTURAL FURNISHINGS, SO AS NOT TO BLOCK HEAT FLOW FROM EXISTING RADIATORS. REMOVE EXISTING RADIATOR FRONT PANELS TO FACILITATE THE REMOVAL OF ASBESTOS INSULATION BY ABATEMENT CONTRACTOR.
 - TAB CONTRACTOR TO MEASURE: MAXIMUM AND MINIMUM SUPPLY AIR FLOWS IN THE SUPPLY AIR DUCT AND AT THE DIFFUSERS; CORRESPONDING MAXIMUM AND MINIMUM AIR FLOWS AT THE HOOD WITH THE HOOD AT MAXIMUM AND MINIMUM. COORDINATE THIS WORK WITH THE "CONTROLS UPGRADE CONTRACTOR". INCLUDE THIS DATA IN THE TAB REPORT FOR THE PROJECT.
 - REMOVE EXISTING CHEMICAL CABINET SS EXHAUST DUCT TO THIS APPROXIMATE LOCATION.
 - EXISTING CW SUPPLY C/W GATE VALVE, PRESSURE REDUCING VALVE AND PRESSURE GAUGE TO BE REMOVED COMPLETE.



LABORATORY PRESSURIZATION CONTROL SEQUENCE

THE DDC LABORATORY TRACKING SYSTEM MEASURES TOTAL SUPPLY AND TOTAL EXHAUST FLOW INTO AND OUT OF THE LABORATORY SPACE. SUPPLY IS VARIED TO MAINTAIN A FIXED AIR VOLUME DIFFERENTIAL (OFFSET) BETWEEN THE SUPPLY AND TOTAL EXHAUST IN A CLOSED LOOP TRACKING MANNER.

THE SUPPLY AND EXHAUST AIR VOLUMES IN THE SPACE SHALL BE CONTROLLED (VARIED) IN SUCH A MANNER AS TO SATISFY VOLUME (MASS) CRITERIA.

DURING THE DAY SCHEDULE, THE HOOD EXHAUST SHALL MAINTAIN VOLUMETRIC REQUIREMENTS TO SATISFY FACE VELOCITY CONDITIONS. IF THE HOOD SASH IS CLOSED BEYOND AN AREA REPRESENTATIVE OF THE MINIMUM VENTILATION OF THE SPACE, THE EXHAUST WILL NOT CONTINUE TO BE REDUCED. IF THE FACE VELOCITY EXCEEDS THE HIGH ALARM VALUE, THE ALARM LIGHT WILL BE ACTIVATED.

DURING THE NIGHT SCHEDULE, THE SUPPLY BOX WILL BE CLOSED AND THE HOOD EXHAUST WILL BE REDUCED TO A VALUE PREDICATED BY A REDUCTION IN THE FACE VELOCITY SETPOINT.

EXISTING LAB CONTROLS

SCALE: NTS



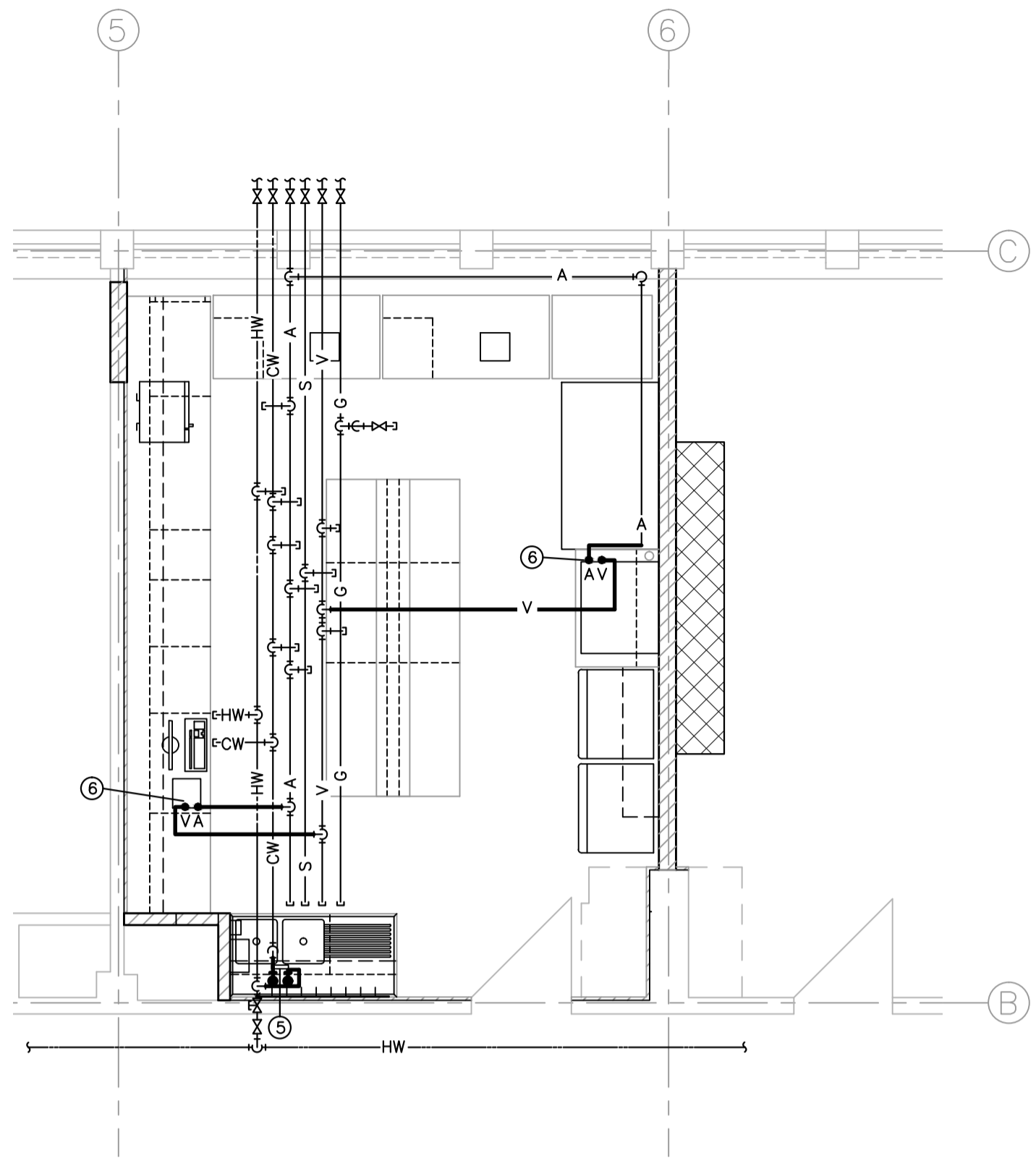
0	ISSUED FOR TENDER	NOV. 6 2015
revisions		date
project		project

PATHOLOGY LAB RETROFIT BUILDING #25 BROOKFIELD ROAD ST. JOHN'S, NL

DEMOLITION LEVEL 1 PARTIAL FLOOR PLAN

designed	R. JONES	conçu
date	NOV. 6, 2015	
drawn	A. TURNQUEST	dessiné
date	JULY 27, 2015	
approved		approuvé
date		
Tender		Soumission

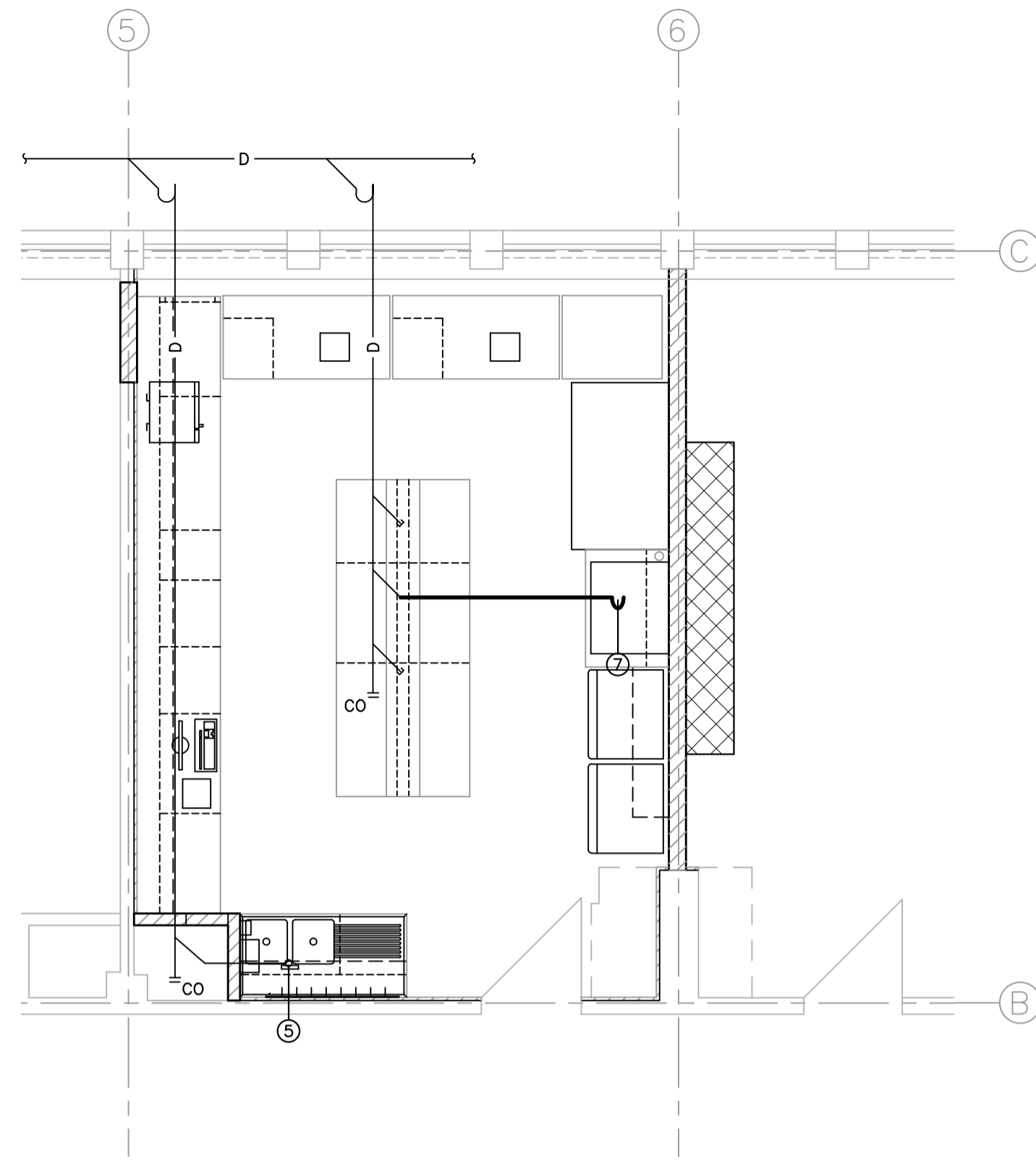
PWGC Project Manager	Administrateur de projets TPGSC
project number	no. du projet
1516-143110-P07	
drawing no.	no. du dessin
M1-R0	



**PATHOLOGY DW AND GAS SERVICES
 NEW PLAN**

SCALE: 1:50
 0m 1m 2m 3m 4m 5m

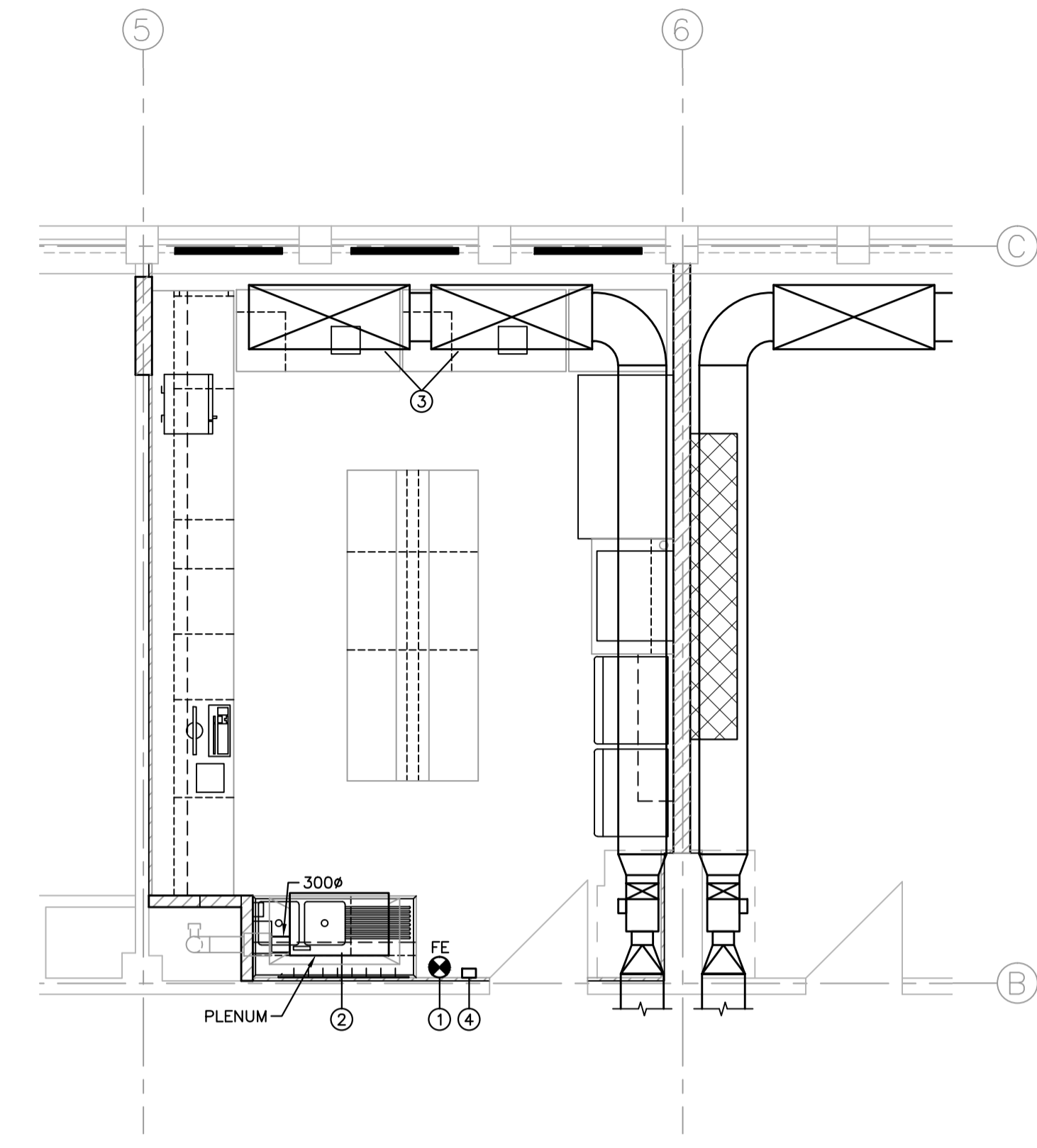
1
 M2 M2



PATHOLOGY DWV NEW PLAN

SCALE: 1:50
 0m 1m 2m 3m 4m 5m

2
 M2 M2



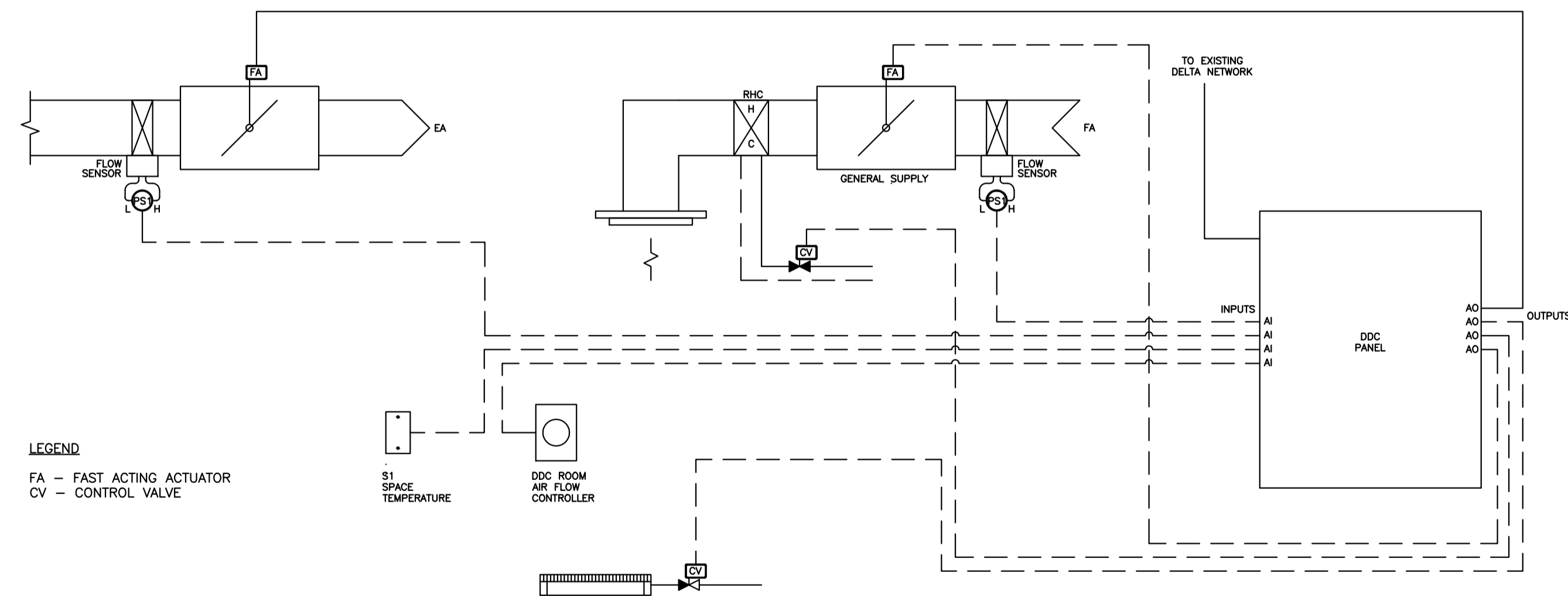
PATHOLOGY HVAC NEW PLAN

SCALE: 1:50
 0m 1m 2m 3m 4m 5m

3
 M2 M2

NEW NOTES:

- 1 REINSTALL EXISTING FIRE EXTINGUISHER. EXACT LOCATION TO BE FIELD COORDINATED WITH DEPARTMENTAL REPRESENTATIVE.
- 2 INSTALL NEW STAINLESS STEEL EXHAUST AIR DUCT, 600L X 500H X 600D 16 GAUGE SS PURPOSE MADE PLENUM AND REGISTER. REGISTER TO BE 600 X 500 EH PRICE MODEL 530 WITH FIXED LOUVERS, 45 DEGREE ANGLE, STEEL REGISTER, COMPLETE WITH STEEL DAMPER, FIXED BLADES PARALLEL TO LONG DIMENSION, 19mm BLADE SPACING AND WHITE FINISH. CONFIRM EXACT REGISTER AND PLENUM SIZE IN THE FIELD.
- 3 REINSTALL EXISTING LAMINAR FLOW DIFFUSERS. EXTEND DUCT AS REQUIRED.
- 4 NEW DDC THERMOSTAT BY "CONTROL UPGRADE CONTRACTOR".
- 5 CONNECT NEW HOT AND COLD WATER TO NEW SINK AND FITTING SUPPLIED BY LAB FURNITURE MANUFACTURER. SINK FITTING INSTALLED BY MECHANICAL. COUNTERS ARE PREDRILLED BY LAB FURNITURE MANUFACTURER TO ACCEPT FITTING. CONNECT NEW SINK FITTING TO EXISTING HOT AND COLD WATER COMPLETE WITH CHROME PLATED COMPRESSION BALL VALVES COMPLETE WITH FLEXIBLE STAINLESS STEEL RISERS. CONNECT ACID DRAIN FOR BUILT-IN SINK TO EXISTING ACID DRAIN SYSTEM IN LAB. EXACT TIE-IN LOCATIONS TO BE FIELD COORDINATED. COORDINATE LOCATION OF FINAL CONNECTIONS WITH LAB FURNITURE MANUFACTURER APPROVED SHOP DRAWINGS.
- 6 INSTALL NEW VACUUM AND AIR PIPING FITTINGS. COUNTERS ARE PREDRILLED BY LAB FURNITURE MANUFACTURER TO ACCEPT FITTINGS. FITTINGS ARE PROVIDED BY LAB FURNITURE MANUFACTURER AND SHIPPED LOOSE WITH FURNITURE. CONNECT FITTINGS TO EXISTING AIR AND VACUUM SERVICE PIPES. EXACT TIE-IN LOCATIONS TO BE FIELD COORDINATED. COORDINATE LOCATION OF FINAL CONNECTIONS WITH LAB FURNITURE MANUFACTURER APPROVED SHOP DRAWINGS.
- 7 NEW ACID DRAIN & TRAP TO EXISTING GLASS ACID DRAIN BELOW FLOOR. PIPE CONDENSATE DRAIN FROM EQUIPMENT THIS AREA, INDIRECTLY TO TRAP. COORDINATE EXACT ROUTING IN THE FIELD.



LEGEND
 FA - FAST ACTING ACTUATOR
 CV - CONTROL VALVE

S1 SPACE TEMPERATURE
 DDC ROOM AIR FLOW CONTROLLER

NEW LAB CONTROLS

SCALE: NTS

4
 M2 M2

PIPING LEGEND

- CW DOMESTIC COLD WATER
- HW DOMESTIC HOT WATER
- D DRAINAGE LINE
- G GAS LINE
- V VACUUM LINE
- S STEAM LINE
- A AIR LINE
- VALVE
- CO CLEANOUT
- PIPE CAP

HVAC LEGEND

- EXISTING VAV BOX
- EXISTING INSULATED DUCTWORK
- EXISTING FIRE EXTINGUISHER
- EXISTING RADIATOR
- EXISTING SUPPLY AIR
- EXISTING SASH VOLUME CONTROL
- EXISTING PNEUMATIC THERMOSTAT

0	ISSUED FOR TENDER	NOV. 6 2015
revisions		date

project

**PATHOLOGY LAB
 RETROFIT
 BUILDING #25
 BROOKFIELD ROAD
 ST. JOHN'S, NL**

drawing

**NEW
 LEVEL 1 PARTIAL
 FLOOR PLAN**

designed R. JONES

date NOV. 6, 2015

drawn A. TURNQUEST

date JULY 27, 2015

approved

date

Tender

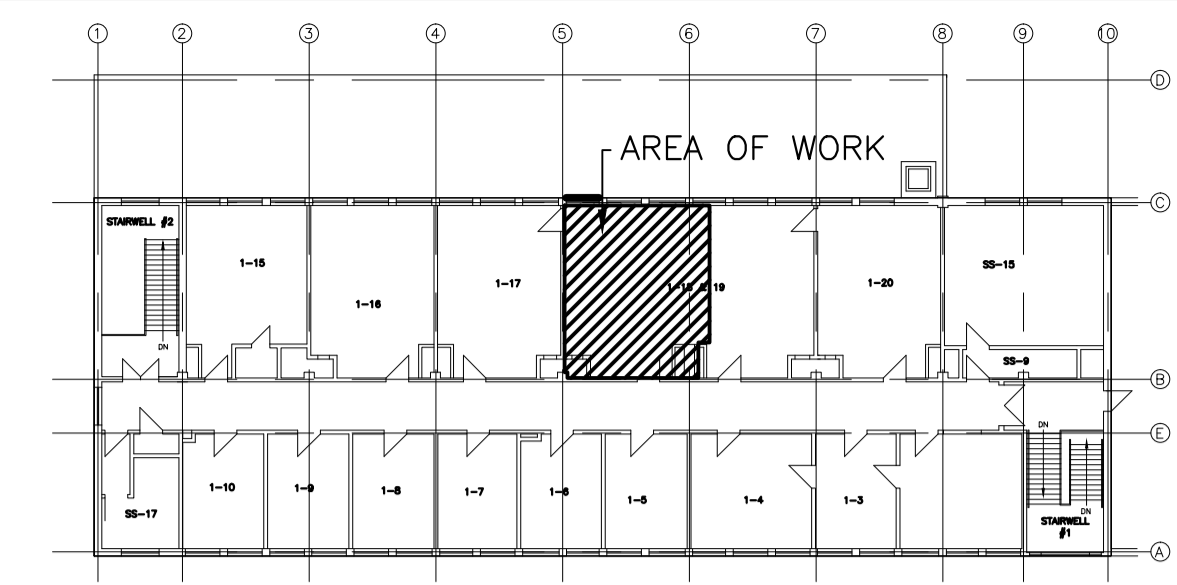
PWGSC Project Manager / Administrateur de projets TPSGC

project number

1516-143110-P07

drawing no.

M2-R0



KEY PLAN

SYMBOL	DESCRIPTION
	300x1200, RECESSED LED FIXTURE, 3800 LUMENS, 4100 COLOUR TEMPERATURE. PHILLIPS #A248 OR EQUAL, 120V

POWER LEGEND	
SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE 15A 125V, COMMERCIAL SPECIFICATION GRADE, 18" AFF COMPLETE WITH OFFICE WHITE NYLON FACE AND COVERPLATE. HUBBELL #BR150W OR EQUAL BY LEVITON.
	DUPLEX RECEPTACLE, 20A 125V, MOUNTED 18" AFF UNLESS NOTED OTHERWISE ON DRAWINGS.
	DIRECT CONNECTION - REFER TO EQUIPMENT SCHEDULE FOR CONNECTION DETAILS.
	DUPLEX RECEPTACLE INSTALLED BY MILLWORK CONTRACTOR AS PART OF THE MILLWORK PACKAGE. ELECTRICAL CONTRACTOR TO PROVIDE NEW WIRING BACK TO PANEL. 20A/120V

LIGHTING LEGEND	
SYMBOL	DESCRIPTION
	15A, 120V TOGGLE SWITCH, MOUNTED AT 48" AFF UNLESS NOTED OTHERWISE WHITE IN COLOR C/W WHITE COVERPLATE. HUBBELL #CSB1150W OR EQUAL BY LEVITON, COPPER.

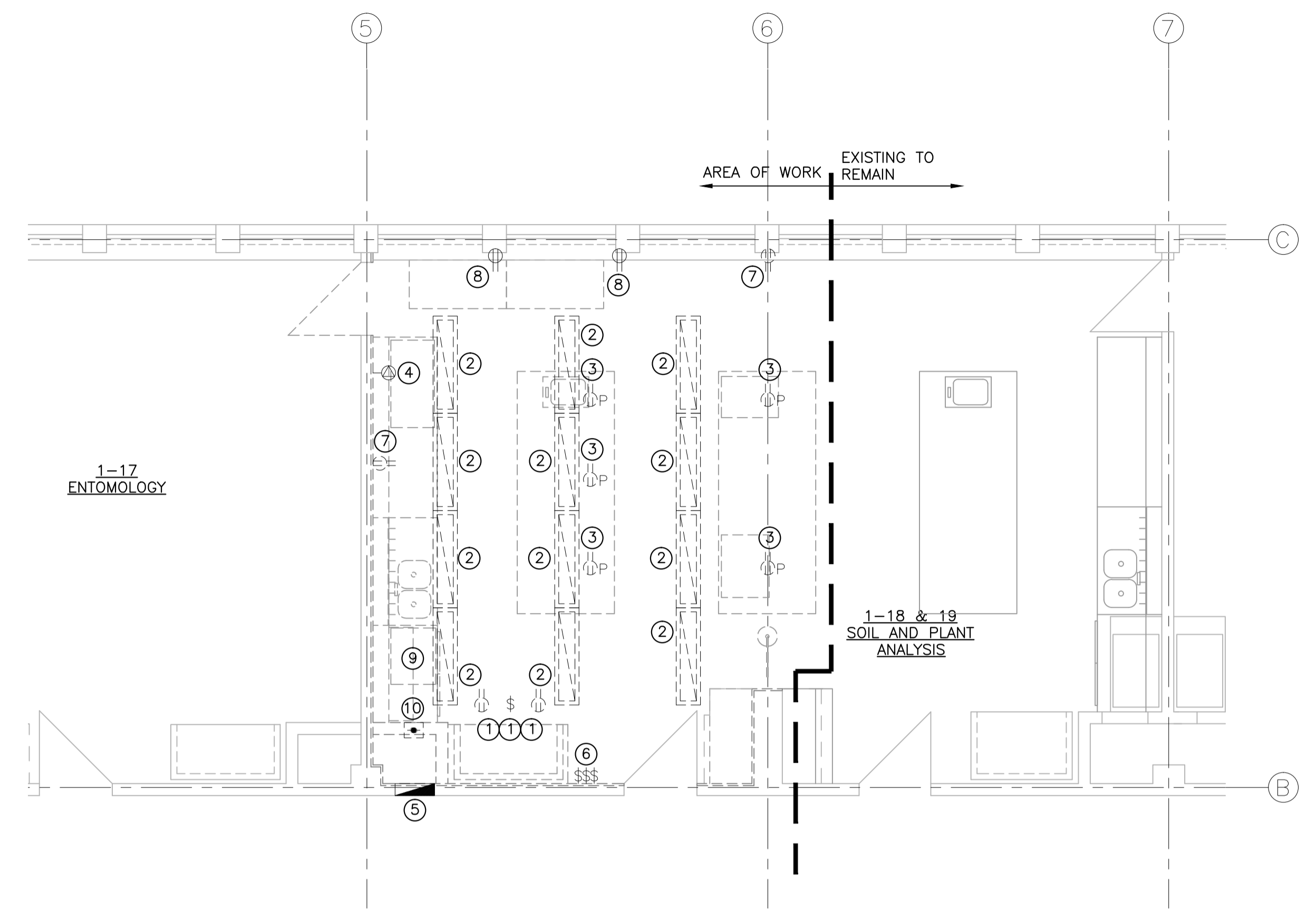
COMMUNICATIONS LEGEND	
SYMBOL	DESCRIPTION
	RJ45 CAT 5E MODULAR OUTLET MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED.
V	- # OF VOICE
D	- # OF DATA

DEMOLITION KEY NOTES:

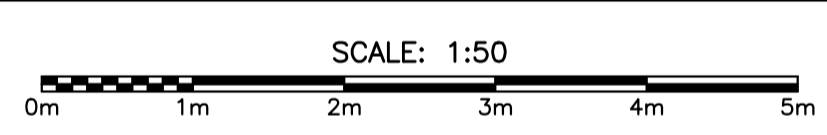
- DISCONNECT AND REMOVE POWER FOR EXISTING FUME HOOD.
- DISCONNECT AND REMOVE EXISTING LIGHTING. REUSE EXISTING CIRCUITS AND LIGHTING.
- POWER TO EXISTING ISLAND TO BE REMOVED. LEAVE EXISTING CONDUITS IN PLACE AND RE-USE WHERE POSSIBLE. EXISTING PEDESTAL RECEPTACLES TO BE REMOVED.
- DISCONNECT EXISTING OVEN.
- EXISTING ELECTRICAL PANEL TO REMAIN.
- DISCONNECT AND REMOVE EXISTING SWITCHES.
- DISCONNECT AND REMOVE ALL EXISTING RECEPTACLES.
- EXISTING RECEPTACLE BACK BOX AND CONDUIT TO REMAIN. PROVIDE NEW RECEPTACLE AND NEW WIRING BACK TO PANEL.
- DISCONNECT ALL WIRING ASSOCIATED WITH EXISTING PIECES OF EQUIPMENT.
- EXISTING JUNCTION BOX TO BE DISCONNECTED AND REMOVED.

GENERAL DEMOLITION NOTES:

- DISCONNECT AND REMOVE ALL ABANDONED WIRING AND CONDUITS BACK TO SOURCE.
- UNLESS OTHERWISE NOTED THIS CONTRACTOR IS RESPONSIBLE TO DISPOSE OF ALL REMOVED EQUIPMENT



EXISTING/DEMOLITION LEVEL 1 PARTIAL FLOOR PLAN



NEW LIGHTING KEY NOTES:

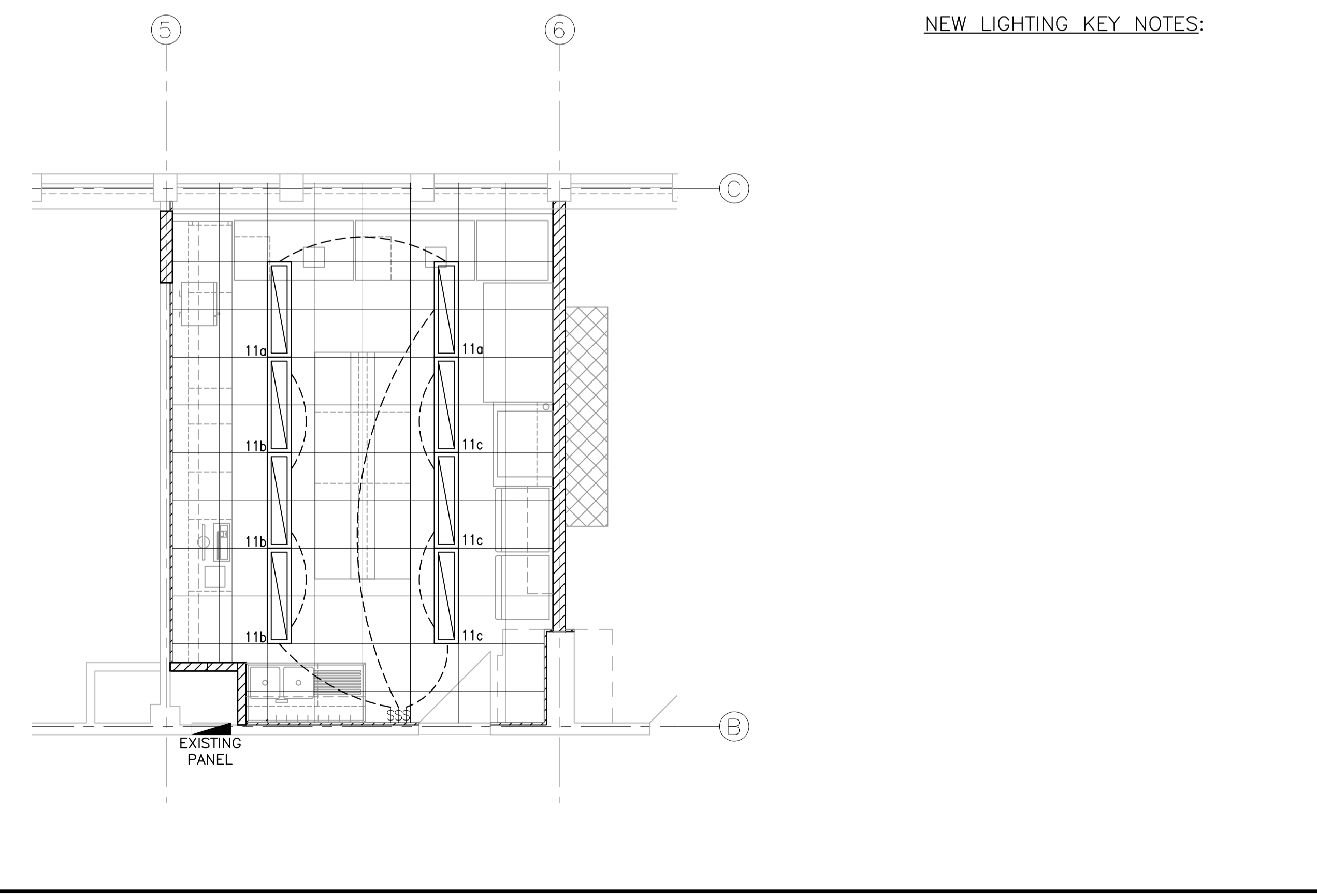
CIRCUIT NUMBERS SHOWN ARE FOR REFERENCE ONLY. CONNECT TO EXISTING SPARE 20A/1P CIRCUIT IN EXISTING PANEL.

SPECIFIED POWER NOTES:

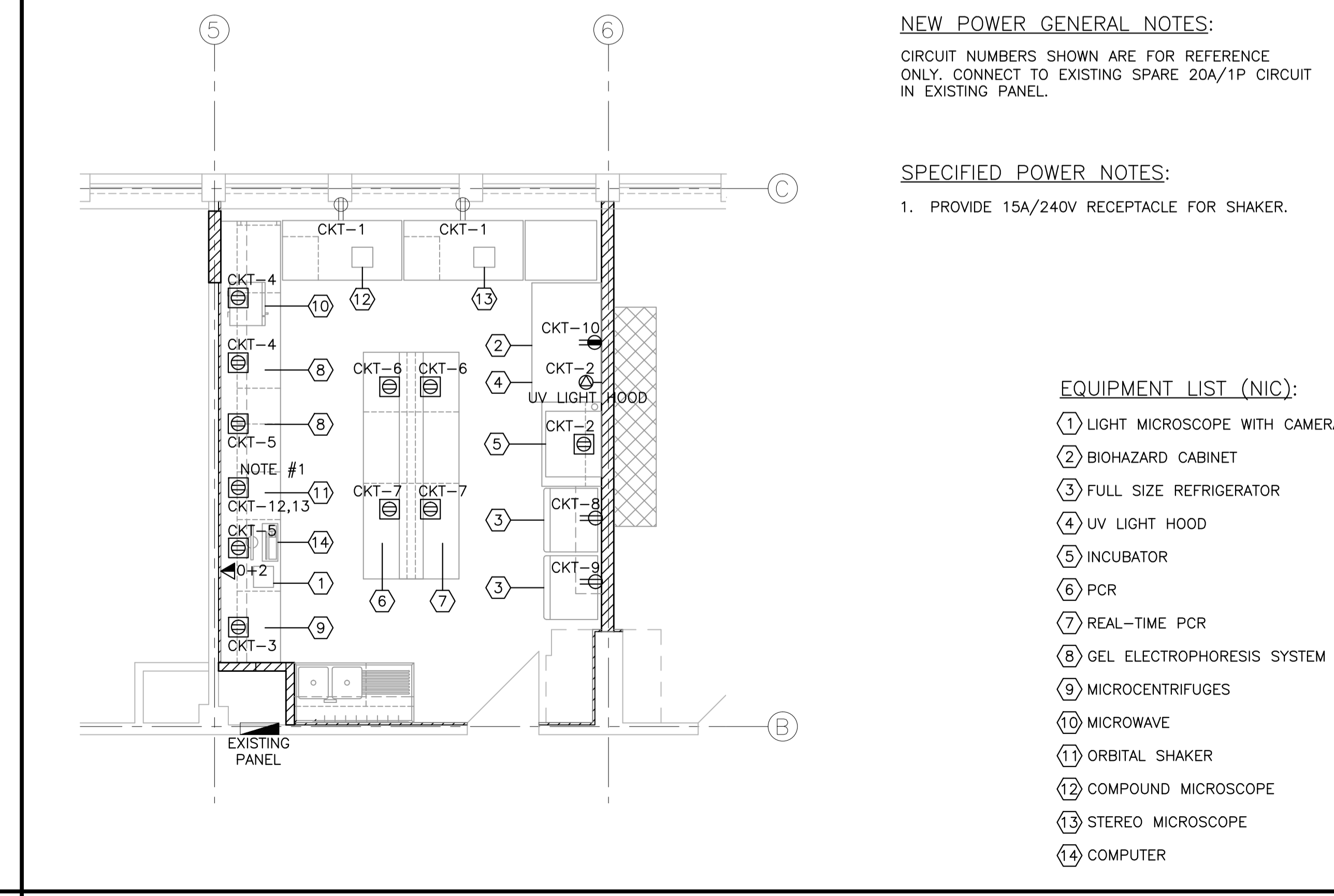
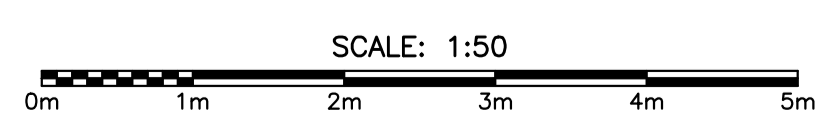
- PROVIDE 15A/240V RECEPTACLE FOR SHAKER.

EQUIPMENT LIST (NIC):

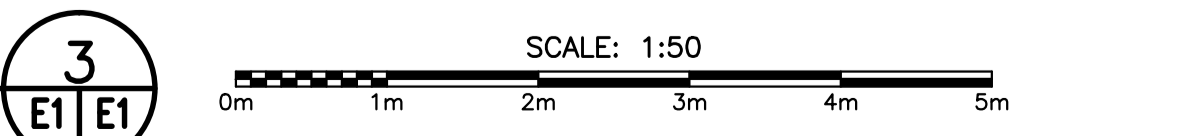
- LIGHT MICROSCOPE WITH CAMERA
- BIOHAZARD CABINET
- FULL SIZE REFRIGERATOR
- UV LIGHT HOOD
- INCUBATOR
- PCR
- REAL-TIME PCR
- GEL ELECTROPHORESIS SYSTEM
- MICROCENTRIFUGES
- MICROWAVE
- ORBITAL SHAKER
- COMPOUND MICROSCOPE
- STEREO MICROSCOPE
- COMPUTER



PATHOLOGY LAB LIGHTING LAYOUT



PATHOLOGY LAB POWER LAYOUT



0	ISSUED FOR TENDER	NOV. 6 2015
revisions		date
project		projct

PATHOLOGY LAB RETROFIT BUILDING #25 BROOKFIELD ROAD ST. JOHN'S, NL

EXISTING/DEMOLITION/NEW LEVEL 1 PARTIAL FLOOR PLANS

designed	C. MACINTYRE	conçu
date	NOVEMBER 6, 2015	
drawn	M. KAMPHUIS	dessiné
date	SEPTEMBER 25, 2015	
approved		approuvé
date		
Tender		Soumission
project number		no. du projet
	1516-143110-P07	
drawing no.		no. du dessin
	E1-R0	



Annexe « F »

CONDITIONS D'ASSURANCE



CONDITIONS D'ASSURANCE

CA1 GÉNÉRALITÉS

CA1.1 Indemnisation des accidentés du travail

CA1.2 Indemnité

CA1.3 Preuve d'assurance

CA1.4 Assuré

CA1.5 Paiement de franchise

CA2 ASSURANCE DE LA RESPONSABILITÉ CIVILE DES ENTREPRISES

CA2.1 Portée de l'assurance

CA2.2 Période d'assurance

CA3 ASSURANCE AUTOMOBILE

CA3.1 Portée de l'assurance

CA4 ASSURANCE DES RISQUES DES ENTREPRENEURS DE CONSTRUCTION ET ASSURANCE FLOTTANTE D'INSTALLATION

CA4.1 Portée de l'assurance

CA4.2 Montant d'assurance

CA4.3 Période d'assurance

CA4.4 Produit de l'assurance

CA1 GÉNÉRALITÉS

CA1.1 Indemnisation des accidentés du travail

- 1) L'entrepreneur accepte d'obtenir une indemnisation des accidentés du travail et d'y souscrire en conformité avec la prescription de la loi de la province ou du territoire où le travail a été accompli.

CA1.2 Indemnité

- 1) La garantie d'assurance requise par les dispositions des présentes conditions d'assurance ne doit d'aucune façon limiter la responsabilité de l'entrepreneur en vertu de la clause d'indemnité des conditions générales du contrat. L'entrepreneur est libre, à condition d'en assumer le coût, d'ajouter toute garantie complémentaire qu'il juge nécessaire pour remplir ses obligations conformément à la clause susmentionnée.

CA1.3 Preuve d'assurance

- 1) Avant le début des travaux, et dans un délai de trente (30) jours après l'acceptation de sa soumission, l'entrepreneur doit remettre au Canada une ATTESTATION D'ASSURANCE (formulaire AAFC/AAC5314) disponible sur demande.
- 2) À la demande du Canada, l'entrepreneur doit fournir les originaux ou les copies certifiées de tous les contrats d'assurance auxquels l'entrepreneur a souscrit conformément aux exigences des garanties d'assurance décrites aux présentes.

CA1.4 Assuré

- 1) Le contrat d'assurance doit assurer l'entrepreneur et doit inclure à titre d'assuré additionnel, Sa

CONDITIONS D'ASSURANCE (suite)

Canada, à l'égard de la responsabilité découlant des activités de l'entrepreneur ayant trait aux travaux.

CA1.5 Paiement de franchise

- 1) L'entrepreneur doit assumer le paiement de toutes sommes d'argent en règlement d'un sinistre, jusqu'à concurrence de la franchise.

CA2 ASSURANCE DE LA RESPONSABILITÉ CIVILE DES ENTREPRISES

CA2.1 Portée de l'assurance

- 1) La garantie d'assurance fournie ne doit pas être inférieure à la garantie fournie par le formulaire BAC 2100 avec toutes ses modifications successives et doit avoir :
 - (a) un « Plafond par sinistre » d'au moins 5,000,000.00 \$;
 - (b) un « Plafond pour risque produits / après travaux » d'au moins 5,000,000.00 \$; et
 - (c) un « Plafond global général » d'au moins 10,000,000.00 \$ par année d'assurance, si le contrat d'assurance est assujéti à une telle limite.
- 2) Le contrat d'assurance doit inclure ou avoir un avenant pour l'inclusion d'une garantie pour les risques et dangers suivants si les travaux y sont assujettis :
 - (a) Dynamitage.
 - (b) Battage de pieux et travaux de caisson.
 - (c) Reprise en sous-œuvre.
 - (d) Enlèvement ou affaiblissement d'un support soutenant des bâtiments ou terrains, peu importe si ce support est naturel, si le travail est exécuté par l'entrepreneur assuré.
 - (e) Amiante.
 - (f) Police automobile des non-proprétaires.

CA2.2 Période d'assurance

- 1) À moins d'avis contraire par écrit du Canada ou d'indication contraire ailleurs dans les présentes, le contrat d'assurance exigé dans les présentes doit prendre effet le jour de l'attribution du contrat et demeurer en vigueur jusqu'au jour de délivrance du Certificat d'achèvement, mis à part le fait que la garantie pour les travaux complétés doit, quoi qu'il en soit, être maintenue pour un délai minimum de six (6) ans suivant la date du CERTIFICAT D'ACHÈVEMENT SUBSTANTIEL.

CA3 ASSURANCE AUTOMOBILE

CA3.1 Portée de l'assurance

- 1) L'entrepreneur doit avoir une assurance responsabilité civile automobile visant les véhicules immatriculés d'au moins 1 million de dollars par sinistre couvrant les lésions corporelles, le décès et

CONDITIONS D'ASSURANCE (suite)

CA4 ASSURANCE DES RISQUES DES ENTREPRENEURS DE CONSTRUCTION ET ASSURANCE FLOTTANTE D'INSTALLATION

CA4.1 Portée de l'assurance

- 1) La garantie d'assurance fournie par un contrat d'assurance des risques des entrepreneurs de construction ou un contrat d'assurance flottante d'installation ne doit pas être inférieure à la garantie fournie par les formulaires BAC 4042 et BAC 4047, avec toutes leurs modifications apportées de temps à autre.
- 2) Le contrat d'assurance doit permettre la mise en service et l'occupation du projet, en totalité ou en partie, pour les fins auxquelles le projet est destiné à son achèvement.
- 3) Le contrat d'assurance peut exclure ou avoir un avenant pour l'exclusion d'une garantie pour les pertes ou dommages occasionnés par n'importe lequel des risques suivants :
 - (a) Amiante.
 - (b) Champignons et spores.
 - (c) Cyber.
 - (d) Terrorisme.

CA4.2 Montant d'assurance

- 1) Le montant de l'assurance doit égaler au moins la somme de la valeur du contrat plus la valeur déclarée (s'il y a lieu) dans les documents contractuels de tout le matériel et équipement fourni par le Canada sur le chantier pour être incorporé aux travaux achevés et en faire partie. Si la valeur des travaux est modifiée, le contrat d'assurance doit être modifié pour refléter la valeur révisée du contrat.

CA4.3 Période d'assurance

- 1) À moins d'avis contraire par écrit du Canada ou d'indication contraire ailleurs dans les présentes, le contrat d'assurance exigé dans les présentes doit prendre effet avant le début des travaux et demeurer en vigueur jusqu'au jour de délivrance du CERTIFICAT D'ACHÈVEMENT SUBSTANTIEL.

CA4.4 Produit de l'assurance

- 1) Le contrat d'assurance doit stipuler que le produit de l'assurance correspondant doit être payé à Sa Majesté la Reine du chef du Canada ou selon les directives du Canada conformément à
- 2) L'entrepreneur doit faire sans délai toutes choses et exécuter tous documents requis pour le paiement du produit de l'assurance.



Annexe « G »

DOCUMENTS CONTRACTUELS



GRANDS TRAVAUX - DOCUMENTS CONTRACTUELS

CS01 DOCUMENTS CONTRACTUELS

- 1) Les documents suivants constituent les documents contractuels :
 - (a) Page « Contrat » une fois signée par le Canada;
 - (b) Formulaire de soumission et d'acceptation et les annexes s'y rattachant dûment remplis;
 - (c) Dessins et devis;
 - (d) Conditions générales d'AAC formulaire AAFC / AAC5321-F:
 - (i) CG1 Dispositions générales
 - (ii) CG2 Administration du contrat
 - (iii) CG3 Exécution et contrôle des travaux
 - (iv) CG4 Mesures de protection
 - (v) CG5 Modalités de paiement
 - (vi) CG6 Retards et modification des travaux
 - (vii) CG7 Défaut, suspension ou résiliation du contrat
 - (viii) CG8 Règlement des différends
 - (ix) CG9 Sécurité des contrats
 - (x) CG10 Assurance
 - (e) Conditions supplémentaires, le cas échéant;
 - (f) Conditions d'assurance, formulaire AAFC / AAC5315-F;
 - (g) Toute modification ou toute révision de soumission recevable reçue avant l'heure et la date déterminées pour la clôture de l'appel d'offres;
 - (h) Toute modification intégrée d'un commun accord entre le Canada et l'entrepreneur avant l'acceptation de la soumission;
 - (i) Toute modification apportée aux documents contractuels conformément aux Conditions générales.
- 2) La langue des documents contractuels sera celle du Formulaire de soumission et d'acceptation présenté.

CS02 ACCEPTATION ET CONTRAT

- 1) Au moment de l'acceptation de l'offre de l'entrepreneur par le Canada, un contrat exécutoire est conclu entre le Canada et l'entrepreneur. Les documents constituant le contrat sont ceux cités à la section CS01 DOCUMENTS CONTRACTUELS.



Annexe « H »

CONTRAT



CONTRAT

BUREAU DES ACHATS

Agriculture et Agroalimentaire Canada
Centre de service de l'est
Service de réception des offres
2001, Boulevard Robert-Bourassa, bureau 671-TEN
Montréal, QC
H3A 3N2

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

Commentaires

Raison sociale et adresse du fournisseur/de l'entrepreneur

Sujet		
N° de l'invitation / contrat		Date
N° de référence du client		
N° de dossier		
Code(s) financier(s)		<input type="radio"/> TPS <input type="radio"/> TVH <input type="radio"/> TVQ
F.A.B. Destination		
Taxes applicables Inclus		
Destination		
Factures - Envoyer l'original et deux copies à :		
Adresser toutes questions à :		
N° de téléphone	Poste	N° de télécopieur
Coût total estimatif	Devise CAD	
Pour le Ministre		
Signature		Date



FORMULAIRES

- Cautionnement de soumission
- Attestation d'assurance
- Cautionnement pour le paiement de la main-d'oeuvre et des matériaux
- Cautionnement d'exécution
- Attestation T4-A
- Formulaire de vérification de sécurité, de consentement et d'autorisation du personnel



CAUTIONNEMENT DE SOUMISSION

NUMÉRO DU CAUTIONNEMENT : _____

MONTANT : _____

SACHEZ PAR LES PRÉSENTES que _____ à titre de débiteur

principal (ci-après le débiteur principal), et _____,

à titre de caution (ci-après appelée la caution), s'obligent et obligent leurs héritiers, exécuteurs et ayants droit conjointement et solidairement, sous réserve des conditions énoncées aux présentes, envers Sa Majesté la Reine du chef du Canada, représentée par le ministre de l'Agriculture et de l'Agroalimentaire, le créancier, (ci-après appelée la Couronne), au paiement de la somme de

_____ dollars (_____ \$), en monnaie légale du Canada.

SIGNÉ ET SCELLÉ le _____ jour de _____, 20__.

ATTENDU QUE le débiteur principal a présenté une soumission écrite à la Couronne en date _____ jour de _____, 20__, pour _____

LE PRÉSENT CAUTIONNEMENT SERA NUL ET NON AVENU :

- (a) si le débiteur principal, dans l'éventualité où sa soumission est acceptée dans le délai prescrit par la Couronne ou, en l'absence d'un tel délai, dans les soixante (60) jours suivant la date de clôture de l'appel d'offres : signe, dans le délai prescrit par la Couronne ou, en l'absence d'un tel délai, dans les quatorze (14) jours suivant la présentation pour signature des formulaires requis, tous les documents contractuels qu'il peut être tenu de signer aux termes de la soumission acceptée; fournit un cautionnement d'exécution et un cautionnement pour le paiement de la main-d'oeuvre et des matériaux d'une valeur nominale respective de 50 % de la valeur du contrat, à la satisfaction de la Couronne, ou toute autre garantie acceptable par la Couronne; ou
- (b) si le débiteur principal verse à la Couronne la différence entre le montant de sa soumission et le montant du contrat conclu par la Couronne pour les travaux, les fournitures et les services visés par ladite soumission, dans le cas où la valeur de ce contrat est supérieure au montant de la soumission du débiteur principal;

dans le cas contraire, le présent cautionnement demeurera en vigueur.

POURVU TOUTEFOIS que la caution et le débiteur principal ne soient pas obligés envers la Couronne pour une somme supérieure au montant prévu dans le présent cautionnement.

POURVU ÉGALEMENT que la caution ne fasse l'objet d'aucune poursuite ou action en justice, à moins que cette poursuite ou cette action ne soit intentée et signifiée à son siège social au Canada dans les douze (12) mois suivant la date du présent cautionnement.

EN FOI DE QUOI le débiteur principal et la caution, par l'entremise de leur représentant dûment autorisé, ont dûment signé et scellé le présent cautionnement à la date indiquée plus haut.

SIGNÉ, SCELLÉ ET DÉLIVRÉ, en présence de :

Débiteur principal

Témoin

Caution

Remarque : le cas échéant, apposer le sceau de la compagnie.



ATTESTATION D'ASSURANCE

À être complétée par l'Assureur

MARCHÉ					
Description et endroit des travaux					N° de contrat
					N° de projet
ASSUREUR			COURTIER		
Nom de la compagnie			Nom de la compagnie		
Pièce/bureau/appt.	Numéro civique	Suffixe de numéro	Pièce/bureau/appt.	Numéro civique	Suffixe de numéro
Rue			Rue		
Type de rue	Direction de la rue	BP ou numéro de route	Type de rue	Direction de la rue	BP ou numéro de route
Municipalité (ville, village, etc.)			Municipalité (ville, village, etc.)		
Province / État	Code postal / ZIP		Province / État	Code postal / ZIP	
ASSURÉ			ASSURÉ ADDITIONNEL		
Nom de l' entrepreneur			Sa majesté la Reine du chef du Canada représentée par le ministre de l'Agriculture et de l'Agroalimentaire du Canada.		
Pièce/bureau/appt.	Numéro civique	Suffixe de numéro			
Rue					
Type de rue	Direction de la rue	BP ou numéro de route			
Municipalité (ville, village, etc.)					
Province / État	Code postal / ZIP				
<p>L'assureur atteste que les polices d'assurance suivantes sont présentement en vigueur et couvrent toutes les activités de l'assuré, en fonction du marché conclu entre l'Assuré dénommé et Sa Majesté la Reine du chef du Canada représentée par le ministre de l'Agriculture et de l'Agroalimentaire du Canada.</p>					
POLICE					
Genre	Numéro	Date d'effet	Date d'expiration	Limites de garantie (\$)	
Responsabilité civile des entreprises					
Assurance des chantiers « Tous risques »					
Risques d'installation « Tous risques »					
Autre (énumérer)					
<p>Chacune des présentes polices renferment les garanties et dispositions spécifiées aux Conditions d'assurances, et chaque police a été amendée pour couvrir Sa Majesté en tant qu'assuré additionnel. L'assureur convient de donner un préavis de trente (30) jours à Sa Majesté et à l'assuré désigné en cas de changement visant la garantie d'assurance ou les conditions ou de l'annulation de n'importe quelle police ou garantie.</p>					
Nom du cadre ou de la personne autorisée		Numéro de téléphone		Ext.	
Signature		Date			



CAUTIONNEMENT POUR LE PAIEMENT DE LA MAIN-D'OEUVRE ET DES MATÉRIAUX

NUMÉRO DU CAUTIONNEMENT : _____

MONTANT : _____

SACHEZ PAR LES PRÉSENTES que _____ à titre de débiteur principal (ci-après le débiteur principal), et _____,

à titre de caution (ci-après appelée la caution), s'obligent et obligent leurs héritiers, exécuteurs et ayants droit conjointement et solidairement, sous réserve des conditions énoncées aux présentes, envers Sa Majesté la Reine du Chef du Canada, représentée par le ministre de l'Agriculture et de l'Agroalimentaire, le créancier, (ci-après appelée la Couronne), au paiement de la somme de

_____ dollars (_____ \$), en monnaie légale du Canada.

SIGNÉ ET SCELLÉ le _____ jour de _____, 20__.

ATTENDU QUE le débiteur principal a conclu un contrat écrite à la Couronne en date du _____ jour de _____, 20__, pour _____

(le contrat), lequel est incorporé aux présentes par renvoi pour en faire partie intégrante.

LE PRÉSENT CAUTIONNEMENT SERA NUL ET NON AVENU si tous les paiements exigibles sont versés sans retard à tous les réclamants qui ont fourni de la main-d'oeuvre des services ou des matériaux dans le cadre du contrat, y compris dans le cadre de toute modification contractuelle subséquente et de toute prolongation dûment autorisées, la caution renonçant par les présentes à son droit d'être avisée concernant ces modifications et prolongations; au cas contraire, le cautionnement demeurera valide et en vigueur, sous réserve des conditions suivantes :

1. Dans le cadre du présent cautionnement, le réclamant (demandeur) désigne toute personne ayant conclu un contrat directement avec le débiteur principal ou l'un quelconque de ses sous-traitants pour de la main-d'oeuvre des matériaux ou les deux, utilisés ou raisonnablement requis dans l'exécution du contrat; sont compris dans la main-d'oeuvre et les matériaux : l'eau, le gaz, l'énergie, l'éclairage, le chauffage, le mazout, l'essence naturelle, les services de téléphone et la location d'équipements (à l'exclusion de la location d'équipements dont le loyer doit être inclus dans le prix d'achat du contrat) directement liés au contrat.
2. Le présent cautionnement ne s'applique pas aux demandes de paiement portant sur de la main-d'oeuvre des services ou des matériaux fournis dans le cadre du contrat lorsque ces demandes représentent une dépense d'immobilisation ou des frais généraux ou d'administration encourus par le débiteur principal dans l'exécution du contrat.
3. Le débiteur et la caution conviennent par les présentes, conjointement et solidairement avec la Couronne, que si un réclamant n'est pas payé en vertu de son contrat avec le débiteur ou avec un quelconque sous-traitant du débiteur dans un délai de quatre-vingt-dix (90) jours suivant la date d'achèvement des services ou de la livraison des matériaux, la Couronne pourra tenter une action en justice en vertu du présent cautionnement et poursuivre cette action jusqu'à jugement final et exécution pour toute somme qui peut être due. Le droit de la Couronne d'intenter une telle action est cédé au réclamant conformément à la Partie VIII de la
4. Aux fins du présent cautionnement, la responsabilité du débiteur et de la caution face à un réclamant qui n'a pas conclu de contrat avec le débiteur se limite au montant que le débiteur aurait eu à payer au réclamant si les dispositions législatives provinciales ou territoriales applicables en matière de liens et de privilèges s'étaient appliquées aux travaux. Un réclamant n'est pas tenu de respecter les dispositions de ces lois qui établissent les procédures à respecter relativement aux avis, aux enregistrements ou autres qu'il aurait autrement été tenu de respecter pour conserver ou valider toute réclamation à l'égard de liens ou de privilèges dont il aurait pu se prévaloir. Le réclamant doit avoir droit d'acheminer sa réclamation et d'obtenir recouvrement en vertu des présentes, sous réserve des conditions et des exigences de notification prévues au cautionnement.
5. Toute modification importante du contrat conclu entre le débiteur et la Couronne ne peut en aucune manière porter préjudice aux droits et intérêts d'un réclamant qui n'a pas contribué ou provoqué cette modification.

6. Aucun réclamant ne peut intenter une action en justice en vertu des présentes :

- (a) à moins d'avoir donné un avis écrit, dans le délai imparti aux présentes, au débiteur principal et à la caution désignée aux présentes, indiquant aussi précisément que possible le montant réclamé. Cet avis doit être transmis par courrier recommandé à toute place d'affaires du débiteur et de la caution ou signifié conformément aux règles de signification des procédures judiciaires en vigueur dans la province ou le territoire où les travaux faisant l'objet du contrat sont situés. L'avis doit être donné :
 - (i) pour toute réclamation portant sur la retenue ou une partie de la retenue que le débiteur principal ou l'un quelconque de ses sous-traitants est tenu de prélever en vertu du contrat entre le réclamant et le débiteur principal ou, le cas échéant, du contrat entre le réclamant et le sous-traitant du débiteur principal, dans un délai de cent vingt (120) jours suivant la date d'exigibilité du dernier paiement dû au réclamant en vertu du contrat;
 - (ii) pour toute réclamation portant sur des sommes autres que la retenue mentionnée à l'alinéa qui précède, dans un délai de cent vingt (120) jours suivant le dernier jour où les services, les travaux, la main-d'œuvre ou les matériaux visés par la réclamation ont été fournis en vertu du contrat entre le réclamant et le débiteur principal ou son sous-traitant;
- (b) après l'expiration d'un délai d'une (1) année suivant la date à laquelle le débiteur principal a cessé les travaux en vertu du contrat, y compris les travaux exécutés en vertu d'une garantie accessoire au contrat;
- (c) ailleurs que devant un tribunal compétent dans la province ou le district du Canada où sont situés les travaux ou une partie des travaux visés par le contrat; les parties au cautionnement conviennent par les présentes de se soumettre à la compétence de ce tribunal.

7. Doit être déduit du montant du présent cautionnement tout paiement effectué de bonne foi en vertu des présentes.

8. La caution ne peut réclamer aucune somme en vertu du contrat et le montant et l'étendue de sa responsabilité en vertu du présent cautionnement demeurent inchangés. Sans limiter la généralité de ce qui précède, la caution est tenue de payer toutes les réclamations valables soumises par un réclamant en vertu du présent cautionnement avant qu'une somme quelconque relative au contrat et retenue par la Couronne ne puisse être versée à la caution.

9. La responsabilité de la caution ne peut excéder le montant du présent cautionnement.

EN FOI DE QUOI le débiteur principal et la caution, par l'entremise de leur représentant dûment autorisé, ont dûment signé et scellé le présent cautionnement à la date indiquée plus haut.

SIGNÉ, SCELLÉ ET DÉLIVRÉ, en présence de :

Débiteur principal

Témoin

Caution

Remarque : le cas échéant, apposer le sceau de la compagnie.



CAUTIONNEMENT D'EXÉCUTION

NUMÉRO DU CAUTIONNEMENT : _____

MONTANT : _____

SACHEZ PAR LES PRÉSENTES que _____ à titre de débiteur

principal (ci-après le débiteur principal), et _____,

à titre de caution (ci-après appelée la caution), s'obligent et obligent leurs héritiers, exécuteurs et ayants droit conjointement et solidairement, sous réserve des conditions énoncées aux présentes, envers Sa Majesté la Reine du chef du Canada, représentée par le ministre de l'Agriculture et de l'Agroalimentaire, le créancier, (ci-après appelée la Couronne), au paiement de la somme de

_____ dollars (_____ \$), en monnaie légale du Canada.

SIGNÉ ET SCELLÉ le _____ jour de _____, 20__.

ATTENDU QUE le débiteur principal a conclu un contrat avec la Couronne en date du _____ jour de _____, 20__,

pour _____

(le contrat), lequel est incorporé aux présentes par renvoi pour en faire partie intégrante.

LE PRÉSENT CAUTIONNEMENT SERA NUL ET NON AVENU si le débiteur principal s'acquitte, de manière satisfaisante et de bonne foi, de toutes les obligations qui lui incombent en vertu du contrat; dans le cas contraire, le présent cautionnement demeurera en vigueur et aura plein effet, sous réserve des conditions suivantes :

1. Dans le cas où le débiteur principal omet d'exécuter l'une quelconque de ses obligations et que la Couronne déclare qu'il est en situation de défaut :
 - (a) si le mandat des travaux n'est pas retiré au débiteur principal, la caution doit remédier au défaut du débiteur principal;
 - (b) si le mandat des travaux est retiré au débiteur principal, sur instruction de la Couronne à cette fin, la caution doit achever les travaux conformément aux modalités du contrat, pourvu que, si un contrat est conclu à cette fin :
 - (i) ce contrat soit conclu entre la caution et l'entrepreneur chargé d'achever les travaux; et
 - (ii) le choix de cet entrepreneur soit approuvé par la Couronne;
 - (c) si le mandat des travaux est retiré au débiteur principal et si la Couronne, après en avoir donné un avis raisonnable à la caution, n'enjoint pas à la caution d'achever les travaux, cette dernière doit assumer les coûts d'achèvement des travaux qui excèdent le montant dont dispose la Couronne en vertu du contrat;
 - (d) la caution doit assumer la responsabilité et payer tous les dépassements de coûts liés à l'achèvement des travaux;
 - (e) la caution n'a pas droit aux sommes gagnées par le débiteur principal en vertu du contrat jusqu'à la date du défaut, ni aux retenues prélevées et détenues par la Couronne sur ces sommes; la responsabilité de la caution en vertu du présent cautionnement demeure pleinement en vigueur à condition toutefois, sans limiter la généralité de ce qui précède, qu'à l'achèvement des travaux, à la satisfaction de la Couronne, toute somme gagnée par le débiteur principal dans le cadre du contrat et toute retenue prélevée et détenue par la Couronne sur ces sommes soit versée à la caution.
2. La responsabilité de la caution ne peut excéder le montant du présent cautionnement.
3. Aucune action en justice ou demande ne peut être intentée par la Couronne contre la caution en vertu des présentes après l'expiration d'un délai de deux (2) ans suivant la date d'exigibilité du dernier paiement en vertu du contrat.

EN FOI DE QUOI le débiteur principal et la caution, par l'entremise de leur représentant dûment autorisé, ont dûment signé et scellé le présent cautionnement à la date indiquée plus haut.

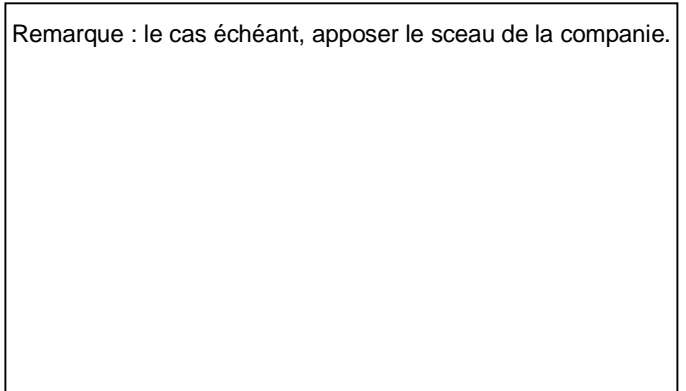
SIGNÉ, SCELLÉ ET DÉLIVRÉ, en présence de :

Débiteur principal

Témoin

Caution

Remarque : le cas échéant, apposer le sceau de la compagnie.





ATTESTATION T4-A

L'entrepreneur doit remplir et soumettre la présente attestation T4-A dans les quatorze (14) jours civils de l'avis d'attribution du marché et dans les quatorze (14) jours civils suivant tout changement à l'information déjà fournie en vertu du marché. Le défaut de fournir cette information ou de fournir l'information correcte constituera une violation fondamentale du marché.

1. **L'entrepreneur doit inscrire un [x] dans l'une des cases ci-dessous, vis-à-vis de la description qui correspond le mieux à son statut.**

- [] Une entreprise incorporée en vertu des lois fédérales ou provinciales;
- [] Une entreprise non incorporée, soit une entreprise individuelle ou un partenariat; ou
- [] Un particulier.

Nota.- L'information fournie à la section 2 doit concorder avec celle fournie à la section 1.

Nom de l'entreprise incorporée ou non incorporée ou du particulier :

Nom de la rue ou n° de case postale : _____

Ville ou village : _____

Province : _____

Code postal : _____

2. **L'entrepreneur doit remplir la section qui correspond à sa situation (2(a) ou 2(b) ou 2(c)).**

- (a) S'il est incorporé :
 Numéro d'entreprise (NE) : _____ , ou
 Numéro de TPS/TVH : _____ , ou
 Numéro T2 (impôt des sociétés - NT2) : _____ , selon le cas
- (b) S'il n'est pas incorporé :
 Numéro d'assurance sociale (NAS) : _____ , ou
 Numéro d'entreprise (NE) : _____ , ou
 Numéro de TPS/TVH : _____ , selon le cas

Nota.- Le nom de l'entreprise non incorporée doit être le même que le nom associé au numéro d'entreprise de Revenu Canada ou au numéro de TPS.

- (c) Si l'entrepreneur est un particulier :
 Numéro d'assurance sociale (NAS) : _____ , ou
 Numéro d'entreprise (NE) : _____ , ou
 Numéro de TPS/TVH : _____ , selon le cas

Nota.- Le nom du particulier doit être le même que le nom associé au numéro d'assurance sociale.

3. **JE/NOUS CERTIFIE/CERTIFIONS PAR LES PRÉSENTES avoir examiné l'information fournie ci-dessus, y compris le nom légal, l'adresse et l'identificateur à propos de Revenu Canada (NAS, NE, no de TPS/TVH, NT2), et que cette information est correcte et complète, et indique pleinement mon/notre identité.**

Signataire ou entrepreneur

Titre du signataire

Date

**FORMULAIRE DE VÉRIFICATION DE
SÉCURITÉ, DE CONSENTEMENT ET
D'AUTORISATION DU PERSONNEL**

RÉSERVÉ À L'ADMINISTRATION

N° de référence

N° du ministère/de l'organisation

N° de dossier

REMARQUE : Pour consulter l'énoncé concernant la *Loi sur la protection des renseignements personnels*, voir la section C de ce formulaire. Pour obtenir les directives à suivre, consulter les DIRECTIVES ci-jointes. Prière de dactylographier ou d'écrire en lettres moulées.

A RENSEIGNEMENTS ADMINISTRATIFS (À remplir par l'agent autorisé du ministère/de l'organisme/de l'organisation)

Nouvelle Mise à jour Relèvement Transfert Supplémentaire Réactivation du dossier

Niveau de la (des) vérification(s) de la fiabilité/sécurité requis

Cote de fiabilité Niveau I (CONFIDENTIEL) Niveau II (SECRET) Niveau III (TRÈS SECRET)

Autre _____

RENSEIGNEMENTS SUR LA NOMINATION/L'AFFECTATION/LE CONTRAT

Période indéterminée Période déterminée Contrat Secteur privé Autre (préciser détachement / affectation, etc.) _____

Justification de la condition du contrôle de sécurité

Numéro du poste/concours/contrat	Titre		Groupe/Niveau (Grade le cas échéant)
N° d'identification de l'employé/CIDP/Grade et numéro de matricule (le cas échéant)	En cas de nomination pour une période déterminée ou à contrat, indiquer la durée	Du	Au
Nom et adresse du ministère / organisme / agence	Nom de l'agent	N° de téléphone ()	N° de télécopieur ()

B RENSEIGNEMENTS BIOGRAPHIQUES (À remplir par le postulant)

Nom (de famille)	Prénoms au complet (aucune initiale) souligner ou encercler le prénom usuel		Nom de famille à la naissance			
Tout autre nom utilisé (tel que sobriquet)	Sexe	Date de naissance	Pays de naissance	Date d'entrée au Canada si né à l'extérieur du Canada		
	<input type="checkbox"/> Masculin <input type="checkbox"/> Féminin	A M J		A M J		
RÉSIDENCE (indiquer les adresses des cinq dernières années en commençant par la plus récente) Adresse domiciliaire		N° de téléphone durant le jour ()	Adresse de courriel			
1	N° d'appartement	N° de rue	Nom de la rue	N° municipal (le cas échéant)	Du A M	À présentement
	Ville		Province ou État	Code postal	Pays	N° de téléphone ()
2	N° d'appartement	N° de rue	Nom de la rue	N° municipal (le cas échéant)	Du A M	Au A M
	Ville		Province ou État	Code postal	Pays	N° de téléphone ()

Avez-vous déjà rempli auparavant un formulaire de vérification de sécurité du gouvernement du Canada? Oui Non

Dans l'affirmative, indiquer le nom de votre employeur ainsi que le niveau et l'année de la vérification. A

CONDAMNATIONS POUR INFRACTIONS CRIMINELLES À L'INTÉRIEUR ET À L'EXTÉRIEUR DU CANADA (voir instructions)

Avez-vous déjà été reconnu coupable d'une infraction criminelle pour laquelle vous n'avez pas obtenu de pardon? Oui Non

Dans l'affirmative, fournir des renseignements à ce sujet (infraction[s], nom du corps policier, ville, province/état, pays et date de la condamnation).

Infraction(s)	Nom du corps policier	Ville
Province/État	Pays	Date de la condamnation A M J



FORMULAIRE DE VÉRIFICATION DE SÉCURITÉ, DE CONSENTEMENT ET D'AUTORISATION DU PERSONNEL

Nom (de famille) et Prénoms au complet Date de naissance A M J

C CONSENTEMENT ET VÉRIFICATION (À remplir par le postulant et l'agent autorisé du ministère/de l'organisme/de l'organisation)

Table with 5 rows and 5 columns: Vérification requise, Initiales de la personne, Nom de l'agent, Initiales de l'agent, N° de téléphone de l'agent

Énoncé concernant la Loi sur la protection des renseignements personnels. Les renseignements demandés sur ce formulaire sont exigés dans le but de fournir une évaluation de sécurité.

Je, soussigné, consens à la divulgation de renseignements susmentionnés, y compris de ma photographie, à leur vérification ultérieure par le gouvernement du Canada et à leur utilisation dans le cadre d'une enquête d'autorisation de sécurité.

Signature Date (A/M/J)

D EXAMEN (À remplir par l'agent autorisé du ministère/de l'organisme/de l'organisation chargé de faire remplir les sections A, B et C)

Nom et titre N° de téléphone Adresse N° de télécopieur

E APPROBATION (À remplir uniquement par l'agent de sécurité autorisé du ministère/de l'organisme/de l'organisation)

Je, soussigné, à titre d'agent de sécurité autorisé, approuve le niveau de sécurité ci-après. Cotes de fiabilité: Approuvé/Cote de fiabilité Non approuvé. PHOTO (pour Niveau III T.S. et/ou sur demande - voir instructions). Vérification de sécurité (le cas échéant): Niveau I Niveau II Niveau III Non recommandé. Commentaires





INSTRUCTIONS POUR REMPLIR LE FORMULAIRE DE VÉRIFICATION DE SÉCURITÉ, DE CONSENTEMENT ET D'AUTORISATION DU PERSONNEL TBS/SCT 330-23 F (Rev. 2002/02)

Une fois rempli, le formulaire doit être sauvegardé et traité au niveau de sécurité PROTÉGÉ A.

Instructions générales

Si l'espace alloué dans une partie est insuffisant, veuillez utiliser une feuille distincte et reproduire la même présentation.

1. Section A (Renseignements administratifs) L'Agent autorisé du ministère/de l'organisme/de l'organisation

L'Agent doit déterminer, basé sur l'historique des cinq dernières années, ce qui constitue une vérification suffisante des données personnelles, des études ainsi que des compétences et des antécédents professionnels conformément aux directives émises par l'agent de sécurité ministériel. Les références se limitent aux noms fournis par le postulant sur le formulaire de demande d'emploi ou d'autres formulaires équivalents.

RENSEIGNEMENTS SUPPLÉMENTAIRES EXIGÉS

Les personnes détenant une ATTESTATION DE SÉCURITÉ qui, après l'obtention de celle-ci, se sont mariées ou qui ont commencé à vivre en union de fait, doivent mettre à jour les sections du *Formulaire d'autorisation de sécurité (TBS/SCT 330-60)* et présenter une copie originale du *Formulaire de vérification de sécurité, de consentement et d'autorisation du personnel*, et remplir les parties suivantes :

Partie A - Tel qu'indiqué à chaque question.

Partie B - Tel qu'indiqué à chaque question, sauf CONDAMNATIONS POUR INFRACTIONS CRIMINELLES À L'INTÉRIEUR ET À L'EXTÉRIEUR DU CANADA.

Partie C - Seules la signature du demandeur et la date sont nécessaires.

"Autre". Ceci devrait être utilisé pour identifier si le filtrage de sécurité est pour Accès aux emplacements, NATO, SIGINT

2. Section « B » (Renseignements biographiques)

À remplir par le postulant. Si vous avez besoin de plus d'espace, veuillez utiliser une feuille distincte. Toutes les feuilles doivent être signées.

Pays de naissance - Pour de nouvelles demandes, si vous êtes né de parents canadiens à l'extérieur du pays, veuillez fournir une copie de votre Certificat d'inscription de naissance à l'étranger. Si vous demeurez au Canada depuis moins de cinq ans, veuillez fournir une copie de votre visa d'immigrant, un enregistrement du document de votre droit d'établissement ou une copie de votre passeport.

- Indiquez seulement les condamnations pour les infractions criminelles à l'égard desquelles vous n'avez PAS obtenu de pardon. S'il y a plus d'une condamnation, joindre une feuille distincte. On doit faire mention également des condamnations à l'extérieur du Canada.
- Indiquez également les infractions en vertu de la *Loi sur la défense nationale* ainsi que les condamnations prononcées par une cour martiale.

3. Section « C » (Consentement et vérification)

Une copie de la Section « C » peut être transmise à certaines institutions pour indiquer que le consentement a été accordé.

La vérification de l'existence d'un casier judiciaire (des empreintes digitales peuvent être requises) et la vérification de crédit ne peuvent être effectuées que par l'intermédiaire du Bureau de la sécurité du ministère ou de l'agent délégué.

Consentement : Seule un postulant qui a atteint l'âge de la majorité peut donner son consentement, sinon il faut la signature d'un parent ou de la personne qui a la charge légale de l'enfant.

L'âge de la majorité est de :

19 ans dans les provinces ou territoires suivants : T.-N., N.-É., N.-B., C.-B., Yukon, et T.N.-O., et Nunavut;

18 ans dans les provinces et territoires suivants : Î.-P.-É., Qc, Ont., Man., Sask. et Alb.

Le postulant doit inscrire ses initiales dans la case réservée aux initiales du postulant.

L'agent qui a effectué la vérification d'information imprimera son nom, insérera ses initiales et numéro de téléphone dans les espaces réservés à cet effet.

- Vérification de la fiabilité «pour tous les genres de vérifications identifiés à la section A» : remplir les numéros 1, 2, et 3 le cas échéant.
- Autorisation de sécurité «pour tous les genres de vérifications identifiés à la section A» : remplir les numéros 1 à 4 et 5 le cas échéant.
- Autre : le numéro 5 est utilisé seulement lorsque l'approbation préalable du Secrétariat du Conseil du Trésor du Canada a été obtenue.

4. Section « D » (Examen)

Doit être rempli par l'agent autorisé du ministère/de l'organisme/de l'organisation chargé de faire remplir les sections A à C de la manière demandée.

5. Section « E » (Approbation)

L'Agent de sécurité autorisé du ministère/de l'organisme/de l'organisation désigne les personnes déléguées par les ministères, organismes et organisations qui peuvent vérifier l'information sur la fiabilité et/ou approuver/ne pas approuver les résultats des vérifications de la cote de fiabilité et/ou de sécurité. Les cases «Approuvé Cote de fiabilité» et Niveau I, II, III ainsi que la signature de l'agent de sécurité autorisé ou du gestionnaire ont été ajoutées uniquement aux fins d'utilisation par le gouvernement du Canada. Les postulants doivent recevoir l'information nécessaire, en accuser réception et obtenir une copie du document "CERTIFICAT D'ENQUÊTE DE SÉCURITÉ ET PROFIL DE SÉCURITÉ - TBS/SCT 330-47".

Remarque : Les organisations du secteur privé ne sont pas habilitées à approuver un quelconque niveau de sécurité.

Photographies : Les ministères / organismes / agences doivent veiller à ce que trois photographies de taille passeport en couleur soient jointes au formulaire pour l'organisme chargé de l'enquête. Les dimensions maximales et minimales de ces photos sont respectivement de 50mm x 70mm et de 43mm x 54mm. La longueur du visage du menton au sommet de la tête doit être de 25 mm à 35 mm. Ces photographies doivent être signées par la personne et un responsable autorisé de la sécurité et **doivent avoir été prises au cours des six mois précédents**. Les photographies sont requises pour les nouvelles vérifications de sécurité ou les relèvements au Niveau III afin que l'organisme chargé de l'enquête puisse identifier la personne durant son enquête. Cependant, l'organisme chargé de l'enquête peut, en des cas particuliers, exiger une photographie pour les autorisations de sécurité de Niveau I ou II, lorsqu'une enquête est requise.