



Royal Canadian Gendarmerie royale  
Mounted Police du Canada

**RETURN BIDS TO:  
RETOURNER LES SOUMISSIONS A: Bid Receiving/Réception  
des sousmissions**

RCMP-GRC

Bid Receiving/Réception des sousmissions  
Attention: Jordan McKenna  
Mail Stop/Arrêt postal 15  
73 Leikin Drive,  
Ottawa, ON K1A 0R2

**AMENDMENT - INVITATION TO TENDER**

**MODIFICATION - APPEL D'OFFRES**

**Tender to: Royal Canadian Mounted Police**

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

**Soumission aux: Gendarmerie royale du Canada**

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

**Comments - Commentaries**

**Vendor/Firm Name and Address  
Raison sociale et adresse du fournisseur/de l'entrepreneur  
Facsimile No. - No de télécopieur:  
Telephone No. - no de telephone:**

<b>Title-Sujet:</b> Construction – Wabasca-Desmarais Detachment	
<b>Solicitation No. - No. de l'invitation</b> 201804138	<b>Date</b> 31 janvier, 2018
<b>Client Reference No. - No. De Référence du Client</b> 201804138	<b>Amend No.- No. du modif.</b> 005
<b>GETS Reference No. - No. de Référence de SEAG</b> 201804138	
<b>Solicitation Closes –L'invitation prend fin</b>  at - à 14 :00 ET on - le Feb. 6th, 2018	
<b>F.O.B. - F.A.B.</b> Destination	
<b>Address Enquiries to: - Adresser toutes questions à:</b>  <a href="mailto:jordan.mckenna@rcmp-grc.gc.ca">jordan.mckenna@rcmp-grc.gc.ca</a>	
<b>Telephone No. - No de telephone</b> 613.843.5518	<b>Fax No. - N° de FAX:</b>
<b>Destination of Goods, Services, and Construction: Destinations des biens, services et construction:</b>	
<b>Delivery Required - Livraison exigée:</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Name and title of person authorized to sign on behalf of Vendor/Firm Nom et titre de la personne autorisée à signer au nom du fournisseur/de l'entrepreneur</b>	

La modification n° 5 de la demande de soumissions 201804138 vise à **apporter des modifications au document d'appel d'offres**

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La modification n° 5 a été établie afin de modifier l'appel d'offres au moyen d'un addenda et de répondre aux questions de la PARTIE 3 de la façon suivante :

**LES CHANGEMENTS SUIVANTS AUX DOCUMENTS D'APPEL D'OFFRES ENTRENT EN VIGUEUR IMMÉDIATEMENT.**

- 1) Voir l'addenda 4 ci-joint.

**Questions et réponses – Partie 3**

Q1) L'heure de clôture est actuellement le 1<sup>er</sup> février 2018 à 14 h HNE. Les entrepreneurs et les fournisseurs de la région de l'Alberta sont habitués à une heure de clôture de 14 h HNR. En fixant la clôture de l'appel d'offres deux heures plus tôt, il est probable que nous ne serons pas en mesure d'offrir le meilleur prix possible en raison d'une réduction considérable du nombre de prix reçus. Nous conseillons de modifier l'heure de clôture à 14 h HNR pour assurer la couverture et la concurrence.

R1) L'heure de clôture demeurera à 14 h HNE (12 h).

Q2) Veuillez fournir la section des spécifications qui porte sur les critères de test STC de la porte acoustique.

R2) Cette information figure à l'addenda 3.

Q3) Étant donné qu'il s'agit d'un bâtiment de protection civile, est-ce que les exigences en matière de protection parasismique ont été préétablies par les experts-conseils et intégrées aux documents contractuels actuels? Ou est-ce que la conception de ces éléments a été déléguée aux métiers respectifs (mécanique, électrique, structure)?

R3) Les exigences de protection parasismique pour les éléments mécaniques sont ajoutées par addenda. La conception des éléments de protection mécanique et d'incendie sera déléguée à ces métiers. Les exigences en matière de conception sismique pour les bâtiments de protection civile sont indiquées sur les dessins de structure, conformément au CNB, et ces valeurs doivent être utilisées pour les éléments de conception délégués.

Q4) Les raccordements de gaz, d'eau et d'électricité ont-ils été effectués jusqu'à la limite de la propriété? Si ce n'est pas le cas, qui est responsable de les faire et à quelle heure les services respectifs seront-ils disponibles pour le raccordement par l'entrepreneur?



- R4) Le raccordement au service d'approvisionnement en eau est la responsabilité de l'entrepreneur, tel qu'il est indiqué sur le dessin civil C1.1 et les spécifications connexes, qui comprennent également la démolition de l'ancien raccordement au service d'eau et la construction du nouveau service d'égout. Le raccordement au service du gaz naturel pour le site et pour l'immeuble est inclus dans les allocations en espèces pour le projet. L'entrepreneur général doit assurer la coordination avec le service public pour l'exécution du travail et défrayer les travaux effectués. Le transformateur figure sur les plans et l'alimentation entre le transformateur et l'immeuble y est indiquée. À l'instar du raccordement au gaz, l'entrepreneur général doit coordonner avec le service public pour planifier le travail et défrayer le coût des travaux. Une allocation en espèces a été prévue à cet égard.
- Q5) La section 05 05 19 mentionne les types de soudures 1 et 2 pour l'acier de charpente apparent (AES); veuillez confirmer les emplacements de l'acier désigné AES et confirmer les types de soudure applicables à ces endroits.
- R5) Il s'agit de tous les endroits comportant de l'acier apparent, à l'exception des emplacements de stationnement des véhicules. Veuillez respecter les niveaux définis au point 1.4.
- Q6) La section 05 05 19 point 2.2 indique que l'acier apparent doit être conforme à la norme SSPC SP3; toutefois, au point 2.1.2 de la section 05 12 00 et au point 2.1.10 de la section 05 21 00, il est indiqué que la norme SSPC SP6 s'applique pour l'acier apparent. Veuillez revoir l'information et confirmer le renvoi exact.
- R6) 05 05 19 2.2.1.1 et 2.2.2.1 : Remplacer les mentions « SP3 » par « SP6 » dans l'addenda 4.
- Q7) Conformément à la spécification, devons-nous assurer le service de sécurité à temps plein, après les heures de travail pendant tout le projet ou un site clôturé suffit-il?
- R7) La protection des biens et du site pendant la construction (qui est sous la garde de l'entrepreneur) est la décision de l'entrepreneur général retenu. Une fois qu'il aura été déterminé que le travail a été terminé par l'entrepreneur, la GRC assumera l'entière responsabilité de l'actif.
- Q8) Le propriétaire envisagera-t-il de considérer le coût de la consommation de gaz naturel et d'électricité pour la construction comme une dépense contrôlée?
- R8) Non. Les coûts engagés pour l'utilisation des services publics (gaz, électricité) relèvent de l'entrepreneur et devraient être inclus dans le prix de la soumission.
- Q9) En raison de son importance pour les activités de la GRC, le propriétaire envisagera-t-il de considérer l'examen acoustique comme une dépense contrôlée?
- R9) Non. Les tests de conformité aux performances acoustiques doivent être fournis conformément aux documents contractuels.



- Q10) Réunions de projet bimensuelles – Dans les spécifications, il est indiqué que l’entrepreneur devra fournir l’emplacement physique. L’intention est-elle d’organiser les réunions sur place, ou est-il acceptable de tenir des réunions à Edmonton [avec certaines réunions prévues sur le site]?
- R10) L’intention est de tenir les réunions sur place. L’entrepreneur doit prendre en charge et réserver un espace pour tenir les réunions sur place à l’adresse physique de la construction pendant toute la durée de la construction.
- Q11) Tableau D -- Allocations en espèces -- point 4 -- Veuillez confirmer que cette allocation en espèces couvre la fourniture et l’installation du système complet décrit à la section 10 82 13 des spécifications.
- R11) Confirmé. S’il vous plaît voir la section ‘01 21 00 – Allowances’ dans Addendum 4 attaché.
- Q12) Veuillez fournir les exigences spéciales nécessaires pour la construction en raison de la proximité du site à l’aéroport local. (P. ex. Les restrictions de taille, les processus de permis ou toute autre conséquence.)
- R12) La GRC et ses partenaires ont obtenu les permis pertinents de la municipalité, de Transports Canada et de NavCan pour la tour radio. La tour doit être construite conformément aux paramètres indiqués dans les documents contractuels. Si vous avez besoin de plus d’information, veuillez poser des questions précises pour obtenir des précisions.
- Q13) Selon le point 1.3.1 de l’article 31 00 10, l’entrepreneur doit obtenir et payer les services d’essais géotechniques; toutefois, une allocation en espèces semble avoir été prévue pour les essais géotechniques, et selon le point 1.3.3 de la même section, les essais doivent être défrayés à même une allocation en espèces. Veuillez confirmer si le point 1.3.1 s’applique.
- R13) L’entrepreneur paiera pour les travaux cités au moyen des montants comptabilisés dans les allocations en espèces applicables. Le libellé de la spécification est exact.
- Q14) Il semble que le plan de l’aménagement paysager L-1 comporte un plan de site différent de celui de C1.0 et A1.1. Veuillez confirmer.
- R14) Utiliser la feuille L-1 pour obtenir des détails sur la portée de l’aménagement paysager. Utiliser C-1.0 et A1.1 pour obtenir des détails sur les feuilles associées. Si vous avez besoin de plus amples renseignements, veuillez fournir des références précises pour obtenir d’autres commentaires.
- Q15) J’ai reçu une invitation à soumettre des prix sur le projet de la GRC de Wabasca. J’espérais envoyer mon prix à d’autres entrepreneurs généraux qui soumissionnent ce projet. Pouvez-vous nous aider?
- R15) Nous ne sommes pas en mesure de fournir une liste des soumissionnaires. Veuillez consulter la liste des fournisseurs intéressés ici. [https://achatsetventes.gc.ca/procurement-data/tender-notice/PW-17-00809370/liste-des\\_fournisseurs\\_intéressés](https://achatsetventes.gc.ca/procurement-data/tender-notice/PW-17-00809370/liste-des_fournisseurs_intéressés), qui énumère les entrepreneurs intéressés qui ont fourni

leurs renseignements personnels.

Q16) Nous aimerions demander une prolongation de deux semaines à la date de clôture de l'appel d'offres, car nous devons soumettre d'autres projets et nous aurions besoin de temps pour mettre en place les ressources nécessaires pour conclure cette soumission.

R16) Aucune prolongation de la date de clôture n'est prévue pour le moment.

Q17) Étant donné qu'il n'y a pas de section de spécification pour les portes et cadres acoustiques, les portes et cadres acoustiques certifiés sont-ils nécessaires?

R17) Reportez-vous à l'addenda n° 3. Une section de spécifications pour les portes et cadres acoustiques a été incluse. Les portes et cadres acoustiques sont essentiels et doivent être inclus.

Q18) Lors de l'examen des dessins structuraux, nous remarquons que, dans le détail F22 du document S6.4 concernant les manchons des poutres sous mur porteur, il est indiqué de consulter les dessins architecturaux. Pouvez-vous indiquer l'emplacement des dessins architecturaux ainsi que l'endroit et le nombre d'emplacements auxquels ces détails s'appliquent? De plus, veuillez noter que plusieurs zones font référence au détail F22 dans le document S6.5. Pouvez-vous vérifier s'il s'agit d'une coquille et que cela devrait se lire plutôt F22 dans le document S6.4?

R18) Les autres assemblages acoustiques seront pris en compte et examinés aux fins de conformité s'ils sont présentés par des fournisseurs potentiels pour cette partie des travaux.

Q19) Le formulaire de soumission dresse la liste des allocations en espèces, mais les spécifications ne contiennent pas de section portant sur les allocations en espèces, même si une telle section est mentionnée dans la table des matières du volume 2.

Selon ce qui est indiqué dans le formulaire de soumission, nous devrions exclure les allocations en espèces du prix forfaitaire. Cela va à l'encontre des autres soumissions que nous avons présentées, dans lesquelles les allocations en espèces font partie de la soumission de base. Dans ce cas-ci, le contrat est rajusté en fonction de l'utilisation des allocations en espèces au fur et à mesure que les travaux sont effectués. Notre question est la suivante : si nous n'incluons pas les allocations en espèces dans notre soumission de base, où devons-nous les indiquer pour les comptabiliser?

R19) Notre intention est d'évaluer toutes les soumissions en fonction d'un prix qui exclut les allocations en espèces indiquées. Après avoir déterminé la soumission retenue, nous incluons alors les allocations en espèces dans le prix contractuel.

Q20) Veuillez confirmer que les modifications envoyées par télécopieur ou par courriel sont acceptées avant la clôture de l'appel d'offres.



- a. En raison du système de présentation des demandes de soumissions (2 enveloppes), nous devons expédier les formulaires de soumission entièrement remplis et signés à Ottawa. Les prix commerciaux finaux ne seront pas confirmés avant la clôture.
  - b. Nous prévoyons inscrire un montant plus élevé au titre du montant forfaitaire dans les copies papier fournies dans les enveloppes et de présenter par télécopieur une modification à la soumission contenant un prix réduit. Est-ce acceptable? Veuillez confirmer.
  - c. Nous ne trouvons pas d'instructions à jour sur le processus de modification acceptable dans les liens actifs fournis. Autre que GI08 (2011-05-16) Révision de la soumission
  - d. Numéro de télécopieur pour la modification des soumissions : Veuillez confirmer.
    - i. N° de télécopieur de la GRC : 614-825-0082
    - ii. Le numéro de télécopieur de l'administration centrale de TPSGC : 819-997-9776
- R20) Veuillez consulter S106 de l'appel d'offres – Une soumission peut être révisée par lettre ou par télécopie conformément à la clause R2710T ou R2410T « Instructions générales aux soumissionnaires ». Le numéro du télécopieur pour la réception des révisions est le 613-825-0082.

**TOUS LES AUTRES TERMES ET CONDITIONS DEMEURENT INCHANGÉES.**



17225 – 102 Avenue  
Edmonton, Alberta, T5S 1J8, Canada  
Ph: 780-486-6400, Fax: 780-486-6401

**ADDENDUM No. 04**

Date: January 26, 2018

Number of Pages: 26

This Addendum varies the Contract Documents entitled:

**GOVERNMENT OF CANADA  
WABASCA-DESMARAIS GOVERNMENT BUILDING**

Project No.: 9031

This Addendum forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts. The cost of all work contained herein is to be included in the Contract sum. The following revisions supersede the information contained in the original drawings and specifications issued for the above named project to the extent referenced and shall become part thereof. Acknowledge receipt of this Addendum by inserting its number and date on the Tender form. Failure to do so may subject bidder to disqualification.

**ADDENDUM NO. 04**

Architectural Addendum Includes: Architectural Addendum No. 04 (4 pgs), Mechanical Addendum M1 (10 pgs), Electrical Addendum E1 (2 pgs), Electrical Addendum E2 (4 pgs), Section 07 23 10 (6 pgs).

**PREVIOUSLY ISSUED ADDENDUM 1**

- .1 Section 07 52 00 – Modified Bituminous Membrane Roofing
  - .1 Article 2.6.1  
Delete wording: “Less than 500 unrated”.
  - .2 Revise article 2.7.1 to read:
    - “.1 Expanded polystyrene (EPS) insulation to CAN/UCL-S701, Type 2, thickness as indicated, square edges.”
  - .3 Revise article 2.10.1 to read:
    - “.1 Sopraply Traffic Cap 560.”

.2 Item.2: Drawing A2.3 – ROOF PLAN

- .1 Delete: .2 in its entirety.

**ADDENDUM 4**

**SPECIFICATIONS**

.3 Section 05 05 19 – Common Work Results for Metalwork Finishing

- .1 Article 2.2.1.1 and 2.2.2.1 – Replace references to “SP3” with “SP6”.

.4 Section 06 08 99 – Rough Carpentry for Minor Works

- .1 Article 2.1.1.3 – Delete reference to “or FSC or SFI certified”.

.5 Section 07 42 33 – Plastic Wall Cladding

- .1 Article 2.1.1 add: 2.1.1.3

“.3 Acceptable Substitution: Fundermax (HPL) Exterior F-Quality Panels. Minimum 8mm thick as distributed by Pilot Group Inc. Fundermax 0428NT Cave in place of Trespa NW25, Hesbania, Wood Decors; Fundermax 0075 NT Dark Grey in place of Trespa A05.5.0 Quartz Grey, Uni Colours; Fundermax 0935 NT Voyager in place of Trespa NW18 Light Mahogany, Wood Decors”

.6 Section 07 23 10 – Foam in Place Insulation

- .1 Add: Section in its entirety.

.7 Section 10 28 10 – Washroom Accessories

- .1 Articles 2.2 add .17

“.17 Acceptable Substitution: “ASI 1-1/4” Diameter Grab Bar Series With Snap-on Flange Covers” of the same dimension and orientation as originally specified are an accepted substitution.

- .1 Individual Correction: Proposed Substitution towel bar ASI 7630 should read ASI 7360.”

**DRAWINGS**

.8 Item: Drawing A2.3 Roof Plan

- .1 Roof Legend (Revised)

**R1r** - MEMBRANE CAP SHEET  
- SBS MEMBRANE LAMINATED TO ASPHALT CORE BOARD



- POSITIVE SLOPE RIGID INSULATION (EXPANDED POLYSTYRENE) (AS REQUIRED FOR BACK SLOPES AND SLOPING INSULATION)
- 150 EXTERIOR GRADE SHEATHING (POLYISO)
- VAPOUR BARRIER MEMBRANE
- 13 EXTERIOR GRADE SHEATHING
- STEEL ROOF DECK
- STEEL STRUCTURE SLOPED

- R2r**
- STANDING SEAM ROOF
  - ICE AND WATER SHIELD
  - 160Z-BARS PARALLEL WITH ROOF SLOPE
  - 13 EXTERIOR GRADE SHEATHING (DENS DECK)
  - 150 RIGID INSULATION (POLYISO)
  - AIR VAPOUR BARRIER MEMBRANE (SOPREMA SOPRAVAP'R)
  - 13 EXTERIOR GRADE SHEATHING (DENS DECK)
  - STEEL ROOF DECK
  - STEEL STRUCTURE SLOPED

- R3r**
- MEMBRANE CAP SHEET
  - SBS MEMBRANE LAMINATED TO ASHALT CORE BOARD
  - POSITIVE SLOPE RIGID INSULATION (EXPANDED POLYSTYRENE) (AS REQUIRED FOR BACK SLOPES AND SLOPING INSULATION)
  - 150 RIGID INSULATION (POLYISO)
  - VAPOUR BARRIER MEMBRANE
  - 13 EXTERIOR GRADE SHEATHING
  - STEEL ROOF DECK
  - STEEL STRUCTURE
  - COMPOSITE PHENOLIC SOFFIT PANEL ON SUPPORT STRUCTURE.

- R4r**
- STANDING SEAM ROOF
  - VAPOUR BARRIER MEMBRANE (ICE AND WATER SHIELD)
  - 13 EXTERIOR GRADE SHEATHING (DENS DECK)
  - STEEL ROOF DECK
  - STEEL STRUCTURE - SLOPED

.9 Item: Drawing A3.1 Exterior Elevations

.1 Item: Legends

- .1 Add: “ Substitute colours for the following:  
CPP1 – Allowed Substitute: Fundermax 0935 NT VOYAGER  
CPP2 – Allowed Substitute: Fundermax 0428 NT CAVE  
CPP3 – Allowed Substitute: Fundermax 0075 NT DARK GREY.”

.10 Item: Drawing A10.1 Finish Plan

.1 Add: “16. Rooms 114, 115, 119 and 127 do not have wall protection on the walls.”

Attachments:

- 1) Section 07 23 10 – Foam in Place Insulation
- 2) Mechanical Addendum M1
- 3) Electrical Addendum E1
- 4) Electrical Addendum E2

END OF ADDENDUM NO. 04

**1. General**

**1.1 SUMMARY**

- .1 Foam-in-place insulation to exterior hollow metal door frames and aluminum window and doorframes.
- .2 Foam-in-place insulation around protrusions through the exterior wall envelope and juncture of different cladding materials.
- .3 Install at additional locations as detailed on Drawings.

**1.2 SECTION INCLUDES**

- .1 This Section includes requirements for:
  - .1 A spray-applied rigid cellular polyurethane thermal insulation foam product applied where indicated on Drawings, so as to connect and provide a continuous air seal.
  - .2 A spray-applied thermal barrier over the polyurethane. Thermal barrier may or may not be required.

**1.3 RELATED WORK**

- .1 Section 04 05 00 – Common Work Results for Masonry.
- .2 Section 07 21 13 – Board Insulation.
- .3 Section 07 21 16 – Blanket Insulation.
- .4 Section 07 27 00 – Air Barriers.
- .5 Section 08 11 00 – Metal Doors and Frames.
- .6 Section 08 44 13 – Glazed Aluminum Curtain Walls and Aluminum Windows.

**1.4 REFERENCE DOCUMENTS**

- .1 American Society of Testing and Materials (ASTM):
  - .1 ASTM D1621-16 – Standard Test Method for Compressive Properties Of Rigid Cellular Plastics.
  - .2 ASTM D1622 / D1622M-14 – Standard Test Method for Apparent Density of Rigid Cellular Plastics.

*(Added by Addendum 4)*

- .3 ASTM D1623-17 – Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.
- .4 ASTM D2126-15 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
- .5 ASTM D2842-12 – Standard Test Method for Water Absorption of Rigid Cellular Plastics.
- .6 ASTM E84-17a – Standard Test Method for Surface Burning Characteristics of Building Materials.
- .7 ASTM E96 / E96M-16 – Standard Test Methods for Water Vapor Transmission of Materials.
- .2 Underwriters' Laboratories of Canada (ULC):
  - .1 CAN/ULC-S102-10 – Standard Method of Test for Surface Burning Characteristics of building Materials and Assemblies.

## 1.5 SUBMITTALS

- .1 Comply with requirements of Division 01.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications, and data sheets in accordance with Section 01 33 00 – Submittal Procedures.
  - .2 Provide copies of most recent data sheets describing materials' physical properties and include product characteristics, performance criteria, physical size, finish, and limitations.

## 1.6 QUALITY ASSURANCE

- .1 Regulatory Agency Approvals:
  - .1 Whichever of the following products is used, Contractor shall be responsible for obtaining approval for use in intended applications from Authority Having Jurisdiction:
    - .1 Spray applied polyurethane foam containing integral fire inhibitors.

## 1.7 MOCK-UPS

- .1 Erect mock-up in accordance with Division 01.
- .2 Refer to Contract Documents for applicable locations.
- .3 Allow twenty-four (24) hours for review of mock-up by Consultant before proceeding with coating work.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver and store materials undamaged, in original wrappings, in a suitable environment.
- .2 Store to protect materials from wind, moisture, sunlight, and accidental ignition.

## 1.9 PROTECTION

- .1 Ventilate area to receive insulation by introducing fresh air and exhausting air continuously during and twenty-four (24) hours after application to maintain non-toxic, unpolluted, safe working conditions.
- .2 Provide temporary enclosures to prevent spray from contaminating air beyond application area.
- .3 Protect adjacent surfaces and equipment from damage by overspray, fall-out, and dusting of insulation materials.

## 1.10 ENVIRONMENTAL REQUIREMENTS

- .1 Apply insulation only when surfaces and ambient temperatures are within manufacturer's prescribed limits for minimum twenty-four (24) hours before, during, and seventy-two (72) hours after completion of application.

## 2. Products

### 2.1 PRODUCT OPTIONS

- .1 Provide spray-applied polyurethane foam containing integral fire inhibitors. An additional separate thermal barrier is not required.

**2.2 SPRAY-APPLIED POLYURETHANE FOAM**

- .1 Spray-Applied Polyurethane Foam: Rigid, cellular thermal insulation with the following properties when applied:

Property	Test Method	Requirement
Density	ASTM D1622	42 kg/m <sup>3</sup> max. 10 kg/m <sup>3</sup> min.
Compressive Strength	ASTM D1621	104 kPa with maximum 10% deformation
Tensile Strength	ASTM D1623	138 kPa min.
Response to Thermal and Humid Aging	ASTM D2126	12% maximum volume change
Water Absorption	ASTM D2842	5% maximum by volume
Water vapour permeability	ASTM E96/E96M	Core: max 180 ng/(Pa.s.m <sup>2</sup> ) Skins: max 60 ng/(Pa.s.m <sup>2</sup> )

- .2 Spray-Applied Polyurethane Foam Containing Integral Fire Inhibitors: Same properties as specified in 2.1.1, with following additional fire hazard classification properties when tested to CAN/ULC-S102 or ASTM E96:

- .1 Flame Spread: Maximum 10.  
.2 Smoke Developed: Maximum 500.  
.3 Fuel Contributed: 0.

**2.3 THERMAL BARRIER**

- .1 Thermal Barrier: Spray-applied fire retardant overcoat meeting applicable requirements of the Alberta Building Code 2014 for a thermal barrier over foamed plastic.

### **3. Execution**

#### **3.1 VERIFICATION OF CONDITIONS**

- .1 Inspect areas to receive Work of this Section and ensure conditions are suitable to begin application.
- .2 Ensure that all work penetrating through air seal is complete.
- .3 Ensure that appropriate backup material has been installed in all large voids.

#### **3.2 PROTECTION OF EXISTING WORK**

- .1 Protect from overspray all finish surfaces which will be exposed to view.

#### **3.3 PREPARATION**

- .1 Examine substrates receiving foamed-in-place insulation to verify suitability.
- .2 Clean substrates of dirt, dust, grease, oil, loose material, and other matter which may affect bond of insulation.
- .3 If recommended by manufacturer, prime substrates in accordance with manufacturer's recommendations.
- .4 Remove oil from galvanized sheet steel substrates and apply prime coating in accordance with manufacturer's instructions.

#### **3.4 APPLICATION**

- .1 Spray-apply polyurethane foam in accordance with manufacturer's instructions. Use equipment recommended by manufacturer.
- .2 Apply material as indicated and in sufficient thickness to achieve a complete air seal.
- .3 Wall / Decking Junctures: Provide continuous gusset profiled seal extending 150mm vertically and horizontally from juncture. Ensure application leaves no voids.
- .4 Windows and Doors: Apply only enough product to form an effective air seal toward warm side of frames; do not fill entire cavity with foam. If application deforms frames, remove foam, restore frame alignment, and re-apply foam.
  - .1 Fill pressed steel doorframes 75% full with foam-in-place insulation prior to installation of doorframes. Fill the remainder of the frame after installation through the gap between the frame and the wall construction. In masonry walls,

fill the frame members as the wall is being built, at lifts no greater than 1200mm, unless otherwise permitted by the material manufacturer.

- .5 Install foam-in-place insulation around protrusions through the exterior building envelope to achieve and maintain the continuity of air/vapour seal.
- .6 Install foam-in-place insulation through all structural elements that penetrate the building envelope. Install foam-in-place insulation to warm side of structural elements to provide a thermal barrier to interior of heated spaces where structural elements are continuous from interior to exterior of building envelope.
- .7 Spray-apply fire retardant overcoat to spray applied polyurethane foam surfaces, in sufficient thickness to provide a thermal barrier meeting the Alberta Building Code 2014 and requirements of authority having jurisdiction.
- .8 Cut back excess foam-in-place insulation once cured; flush with surrounding surfaces, or recess back for application of sealant.
- .9 Upon completion of foam-in-place insulation work, clean adjacent surfaces of over-spray and dusting to the satisfaction of the Consultant.
- .10 Allow Consultant to review installation prior to enclosing.

**END OF SECTION**



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This addendum forms part of the Bid and Contract Documents and modifies them as follows:

## SPECIFICATIONS

### 1. Section 21 05 29 – Hangers and Supports for Fire Suppression Piping and Equipment

.1 Refer to Item 1.3

**ADD:** Add item 1.3.12 as follows:

*“Hangers, supports, and anchor bolts to withstand seismic events as specified in Section 23 05 49.”*

**ADD:** Add item 1.3.13 as follows:

*“Hangers, supports, and anchor bolts shall meet the requirements of the 2014 Alberta Building Code for post-disaster buildings.”*

### 2. Section 21 13 13 – Wet Pipe Fire Suppression Systems

.1 Refer to Item 1.6

**ADD:** Add Item 1.6.1.4 as follows:

*“Design systems for earthquake protection for buildings in the seismic zone required to meet the seismic requirements of for a post-disaster building in Alberta at the location of the building”*

.2 Refer to Item 2.1.1

**ADD:** Add “Axe Fire Protection” to the list of approved fire protection contractors.

### 3. Section 22 05 29 – Hangers, Supports, and Access Doors for Plumbing and Equipment

.1 Refer to Item 1.3

**ADD:** Add item 1.3.13 as follows:

*“Hangers, supports, and anchor bolts to withstand seismic events as specified in Section 23 05 49.”*

**ADD:** Add item 1.3.14 as follows:

*“Hangers, supports, and anchor bolts shall meet the requirements of the 2014 Alberta Building Code for post-disaster buildings.”*

### 4. Section 22 05 48 – Vibration Controls for Plumbing Piping and Equipment

.1 Refer to Item 1.2

**ADD:** Add item 1.2.4 as follows:

*“Vibration controls shall be fully integrated and compatible with the seismic force resisting system specified in Section 23 05 49.”*

### 5. Section 23 05 29 – Hangers, Supports, Anchors, Seals, and Access Doors for HVAC and Equipment

.1 Refer to Item 1.3

**ADD:** Add item 1.3.13 as follows:

*“Hangers, supports, and anchor bolts to withstand seismic events as specified in Section 23 05 49.”*

**ADD:** Add item 1.3.14 as follows:

*“Hangers, supports, and anchor bolts shall meet the requirements of the 2014 Alberta Building Code for post-disaster buildings.”*

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6. **Section 23 05 48 – Vibration Controls for HVAC**  
.1 Refer to Item 1.2  
**ADD:** Add item 1.2.4 as follows:  
*“Vibration controls shall be fully integrated and compatible with the seismic force resisting system specified in Section 23 05 49.”*
7. **Section 22 40 00 – Commercial Plumbing Fixtures**  
.1 Refer to Item 2.22.1  
**REVISE:** Revise FD-3 model to be:  
*“Watts FD-100-A Floor Drain, epoxy coated cast iron body with anchor flange, reversible clamping collar with primary & secondary weepholes, no hub outlet, trap primer connection custom R-1-PERF strainer (28 custom drilled 9.5mm holes), Torx Centre Pin security screws c/w Loctite for secure installation”*
8. **Section 23 05 00 – Common Work Results Mechanical**  
.1 Refer to Item 1.37.10  
**ADD:** Add humidifiers to the Acceptable Manufacturers List with the following manufacturers: Dri-Steem, Nortec, Neptronic
9. **Section 23 05 49 – Seismic Control for Mechanical**  
**ADD:** Add Section 23 05 49 – Seismic Control for Mechanical as per attached.
10. **Section 23 64 15 – Air-Cooled Scroll Chillers**  
.1 Refer to Item 2.1  
**REVISE:** Revise item 2.1.11 as follows:  
*“Modules shall be complete with internal chilled water isolation valves and a chilled control valve. The isolation valves shall be accessible from front panel to allow for isolation of an individual module. The control valve shall be controlled by the chiller controller to open when the chiller module is in operation and close when the chiller module is not in operation. The lead module valve shall remain open to allow continuous flow. Flow shall be permitted through the chiller module when on the dry-cooler modules are in operation and the chiller modules are not in operation but the minimum flow of the unit shall be capable of being reduced to the minimum capacity of the pumps and not restricted by the minimum flow of the chiller module.”*  
.2 Refer to Item 2.6  
**DELETE:** Delete item 2.6.1.3. Chiller modules are being mounted on the roof exterior to the building.
11. **Section 23 82 40 – Fan Coils**  
.1 Refer to Item 2.1  
**ADD:** Add item 2.1.10 as follows:  
*“Fan Coil Manufacturer to provide 1800mm of wiring for the fan EC motor controls and terminal interface. Controls contractor shall be responsible for removing the control box and relocating it to another location on the Fan Coil cabinet, based on accessibility. All wiring between fan coil and final control*

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*box location shall be placed inside of conduit by the control contractors. Relocation of fan coil control box by controls contractor shall not affect warranty on the fan coil unit.”*

.1 Refer to Item 2.2

**REVISE:** Revise item 2.2.6 to indicate filters are to be 50mm disposable MERV 13 filters.

## DRAWINGS

### 1. Mechanical Drawing –M2.1, Main Floor Plumbing Plan

.1 Refer to Main Floor Plumbing Plan

**DELETE:** Delete non-freeze hose bib for patio north of Room 124. Delete associated DCW back to main in corridor.

.1 Refer to Main Floor Plumbing Plan

**ADD:** Add hose reel HR-1 tag for hose reel located in west wall of Corridor 143, south of Room 172.

**ADD:** Add washdown station WD-2 tag in Room 172 north of HR-1. Refer to Keynote #2.

**ADD:** Add washdown station WD-1 tag in Room 128 at location indicated by Keynote #1.

**CLARIFY:** Hose reel referenced in Keynote #2 is type HR-1.

**ADD:** Add General #6 as follows:

*“Install 20mm condensate drain piping from all fan coil unit drain pans to nearest hub drain or mop sink (refer to 12 on M.2). Increase to 25mm pipe when combining multiple drain pipes. Condensate pump to be installed at each fan coil unit to pump condensate. Gravity drainage can be utilized if site installation permits”*

### 2. Mechanical Drawing –M3.0, Main Floor Heating and Cooling Plan

.1 Refer to Main Floor Heating and Cooling Plan

**ADD:** Add General Note 4 as follows:

*“Controls contractor shall include for relocation of fan coil unit control boxes from fan coil unit factory installed locations to alternate locations on the fan coil cabinets within 1800mm of the original locations. Fan coil unit manufacturer is to provide 1800mm of wiring for the fan EC motor controls and terminal interface. All wiring between fan coil and final control box location shall be placed inside of conduit by the control contractors.”*

### 3. Mechanical Drawing –M6.0, Mechanical Room Plan

.1 Refer to Detail 2 - Two Compartment Sump with Oil Interceptor Detail

**REVISE:** Remove the following sentence *“Required where optional sump pump installed in oil interceptor pit.”* The sump pump is required.

**REVISE:** Remove the word *“Optional”* from the start of the sentence *“Optional sump pump with vertical float switch.”* The sump pump is required.

**REVISE:** Remove the words *“Where optional sump pump is required”* in reference to the note pointing at the sump drain line back to sump. The sump drain line is required.

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4. **Mechanical Drawing –M8.1, Mechanical Schematics**  
.1 Refer to Main Ventilation System ERV-1 Detail  
**ADD:** Add second filter section in ERV S/A downstream of energy wheel.  
**REVISE:** Revise note “Heat Wheel c/w VFD on Motor” to be “Energy Wheel c/w VFD on Motor”.
5. **Mechanical Drawing –M8.2, Mechanical Details**  
.1 Refer to Detail 12 – Fan Coil Unit Detail  
**REVISE:** Revise note about condensate pump to be:  
*“Fan coil pump to be provided by mechanical contractor if specified. Power to pump by Division 26”.*
6. **Mechanical Drawing –M9.1, Mechanical Equipment Schedules**  
.1 Refer to Energy Recovery Ventilator Schedule  
**ADD:** Add second filter section in ERV S/A downstream of energy wheel. Filter section to be for MERV 15 cartridge filters.  
**ADD:** Add note that the exhaust air fan VFD is to be capable of modulating down to 8% airflow.
7. **Mechanical Drawing –M9.1, Mechanical Equipment Schedules**  
.1 Refer to Humidifier Schedule  
**REVISE:** Revise HU-1 model to be GTS-100. Input to be 29kW. Water usage to be 34L/hr.
8. **Mechanical Drawing –M9.1, Mechanical Equipment Schedules**  
.1 Refer to Fan Coil Unit Schedule  
**REVISE:** Revise fan coil unit schedule as per attached sketch M9.1-MSK-01.
9. **Mechanical Drawing –M9.1, Mechanical Equipment Schedules**  
.1 Add Condensate Pump Schedule  
**ADD:** Add condensate pumps CP-1 through CP-15 (one for each fan coil unit).  
Condensate pumps to be as specified below (or approved equal):  
**Model:** Sauermann Si-10  
**Max Flow:** 19L/hr  
**Max Head:** 10m  
**Voltage:** 120V/60hz  
**Notes:** Automatic on/off

## ATTACHMENTS

The following are attached hereto and form part of this addendum:

1. M9.1-MSK-01, Specification Section 23 05 49 – Seismic Control for Mechanical

**END OF ADDENDUM M1**

**Part 1            General**

**1.1                SCOPE**

- .1    Seismic force resisting systems (SFRS) for statically supported and vibration isolated equipment and systems; including but not limited to fume hoods, fire protection, piping, ductwork, cable trays, HVAC equipment, plumbing equipment.
- .2    Seismic force resisting systems (SFRS) shall meet the requirements of the Alberta Building Code for Post Disaster Buildings.

**1.2                REFERENCES**

- .1    Canadian Standards Association (CSA International)
  - .1    CSA G40.20/G40.21, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
- .2    Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1    Material Safety Data Sheets (MSDS).
- .3    Alberta Building Code of Canada (ABC) – 2014

**1.3                DEFINITIONS**

- .1    SFRS: acronym for Seismic Force Resisting System.

**1.4                GENERAL REQUIREMENTS**

- .1    SFRS fully integrated into, and compatible with:
  - .1    Noise and vibration controls specified elsewhere.
  - .2    Structural, mechanical, electrical design of project.
- .2    The contractor is to provide the services of a registered Professional Structural Engineer who specializes in seismic force resisting systems. The structural engineer, herein referred to as the seismic engineer, shall provide all required engineering services related to seismic force resisting systems, seismic restraints, and anchorage for all mechanical equipment and systems.
- .3    The SFRS is to be designed to permit the mechanical systems to continue to function in the event of a seismic event.
- .4    The seismic engineer shall review the completed installation and shall submit a statutory declaration to the consultant stating that the complete SFRS installation is installed in accordance with the SFRS design intent and that it complies with the NFPA and Alberta Building Code Post-Disaster Building requirements.
- .5    The seismic engineer shall aid the contractor as necessary during the course of the SFRS installation.
- .6    Submit Alberta Building Code Schedule B-1, B-2, and C-2 for seismic restraint of mechanical systems.

**1.5 SUBMITTALS**

- .1 Submit shop drawings of each factory fabricated component.
- .2 Shop drawings to be stamped by professional engineer registered or licensed in Province of Alberta, Canada.
- .3 Submit design data including:
  - .1 Full details of design criteria.
  - .2 Design calculations (including restraint loads resulting from seismic forces in accordance with Alberta Building Code, detailed work sheets, tables).
  - .3 Separate shop drawings for each SFRS and devices for each system, equipment.
  - .4 Identification of location of devices.
  - .5 Schedules of types of SFRS equipment and devices.
  - .6 Details of fasteners and attachments to structure, anchorage loadings, attachment methods.
  - .7 Installation procedures and instructions.
- .4 Submit additional copy of shop drawings and product data to Structural Engineer for review of connection points to building structure.

**Part 2 Products**

**2.1 SRS MANUFACTURER**

- .1 SRS from one manufacturer regularly engaged in SRS production.

**2.2 GENERAL**

- .1 SRS to provide gentle and steady cushioning action and avoid high impact loads.
- .2 SRS to restrain seismic forces in every direction.
- .3 Fasteners and attachment points to resist same load as seismic restraints.
- .4 SFRS to be fully integrated into, and compatible with:
  - .1 Noise and vibration controls specified elsewhere.
  - .2 Structural, mechanical, electrical design of project.
- .5 SRS of Piping systems compatible with:
  - .1 Expansion, anchoring and guiding requirements.
  - .2 Equipment vibration isolation and equipment SRS.
- .6 SRS utilizing cast iron, threaded pipe, other brittle materials not permitted.
- .7 Attachments to structure:
  - .1 Use high strength mechanical expansion anchors.
  - .2 Drilled or power driven anchors not permitted.
- .8 Wet pipe sprinkler systems: refer to Section [21 13 13 - Wet Pipe Sprinkler Systems].
- .9 Seismic control measures not to interfere with integrity of firestopping.

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**2.3 SFRS FOR STATIC EQUIPMENT, SYSTEMS**

- .1 Floor-mounted equipment, systems:
  - .1 Anchor equipment to equipment supports.
  - .2 Anchor equipment supports to structure.
  - .3 Use size of bolts scheduled in approved shop drawings.
  - .4 Ensure house-keeping pads, if being used to anchor equipment, are anchored to the floor.
- .2 Suspended equipment, systems:
  - .1 Use one or combination of following methods:
    - .1 Install tight to structure.
    - .2 Slack cable restraint system.
    - .3 Cross-brace in every direction.
    - .4 Brace back to structure.
  - .2 SFRS is to be designed to meet or exceed force/deflection requirements as indicated in the Alberta Building Code.
  - .3 SFRS to prevent sway in horizontal plane, "rocking" in vertical plane, sliding and buckling in axial direction.
  - .4 Hanger rods to withstand compressive loading and buckling.

**2.4 SFRS FOR VIBRATION ISOLATED EQUIPMENT**

- .1 Floor mounted equipment, systems:
  - .1 Use one or combination of following methods:
    - .1 Vibration isolators with built-in snubbers.
    - .2 Vibration isolators and separate snubbers.
  - .2 SFRS to resist complete isolator unloading.
  - .3 SFRS not to jeopardize noise and vibration isolation systems. Provide 4-8 mm clearance between seismic restraint snubbers and equipment during normal operation of equipment and systems.
  - .4 Cushioning action: gentle and steady by utilizing elastomeric material or other means in order to avoid high impact loads.
- .2 Suspended equipment, systems:
  - .1 Use one or combination of following methods:
    - .1 Slack cable restraint system.
    - .2 Brace back to structure via vibration isolators and snubbers.

**2.5 SLACK CABLE RESTRAINT SYSTEM (SCS)**

- .1 Use elastomer materials or similar to avoid high impact loads and provide gentle and steady cushioning action.
- .2 SCS to prevent sway in horizontal plane, "rocking" in vertical plane, sliding and buckling in axial direction.
- .3 Hanger rods to withstand compressive loading and buckling.

**2.6 SERVICE UTILITIES ENTRANCE INTO BUILDING AND UNDERGROUND PIPING**

- .1 Provide hangers/support to prevent breakage in the event of seismic activity .

**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 datasheet.

**3.2 INSTALLATION**

- .1 Attachment points and fasteners:
  - .1 To withstand same maximum load that seismic restraint is to resist and in every direction.
- .2 Slack Cable Systems (SCS):
  - .1 Connect to suspended equipment so that axial projection of wire passes through centre of gravity of equipment.
  - .2 Use appropriate grommets, shackles, other hardware to ensure alignment of restraints and to avoid bending of cables at connection points.
  - .3 Piping systems: provide transverse SCS at 10 m spacing maximum, longitudinal SCS at 20 m maximum or as limited by anchor/slack cable performance.
  - .4 Small pipes may be rigidly secured to larger pipes for restraint purposes, but not reverse.
  - .5 Orient restraint wires on ceiling hung equipment at approximately 90 degrees to each other (in plan), tie back to structure at maximum of 45 degrees to structure.
  - .6 Adjust restraint cables so that they are not visibly slack but permit vibration isolation system to function normally.
  - .7 Tighten cable to reduce slack to 40 mm under thumb pressure. Cable not to support weight during normal operation.
- .3 Install SFRS at least 25 mm from equipment, systems, services.
- .4 Miscellaneous equipment not vibration-isolated:
  - .1 Bolt through house-keeping pad to structure.
  - .2 Provide steel support above centre of gravity anchored back to structure.
- .5 Co-ordinate connections with other disciplines.
- .6 Vertical tanks:
  - .1 Anchor through house-keeping pad to structure.
  - .2 Provide steel support above centre of gravity anchored back to structure..
- .7 Horizontal tanks:
  - .1 Provide at least two straps with anchor bolts fastened to structure.



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**3.3 FIELD QUALITY CONTROL**

- .1 Manufacturer's Field Services:
  - .1 Arrange with manufacturer's representative to review work of this Section and submit written reports to verify compliance with Contract Documents.
  - .2 Manufacturer's Field Services: consisting of product use recommendations and periodic site visits to review installation, scheduled as follows:
    - .1 Upon completion of installation.
  - .3 Submit manufacturer's reports to Consultant within 3 days of manufacturer representative's review.
- .2 Inspection and Certification:
  - .1 SFRS: inspected and certified by Seismic Engineer upon completion of installation.
  - .2 Provide written report to Consultant with certificate of compliance.

**END OF SECTION**

FAN COIL SCHEDULE


TAG	MAKE	MODEL	LOCATION	SERVICE	DIMENSIONS (mm)			AIR FLOW RATE (L/s)	HEATING COIL							HEATING CAPACITY (kW)	COOLING COIL							COOLING CAPACITY (kW)	FAN ESP (Pa)	FAN DRIVE	MOTOR POWER (W)	ELECTRICAL (VOLT/PH/HZ)
					LENGTH	WIDTH	HEIGHT		EAT (°C)	LAT (°C)	FLUID	FLUID FLOW RATE (L/S)	EWT (°C)	LWT (°C)	FLUID PD (kPa)		EAT (°C)	LAT (°C)	FLUID	FLUID FLOW RATE (L/S)	EWT (°C)	LWT (°C)	FLUID PD (kPa)					
FC-01	TRANE	BCHD-36	ROOM 102	ROOM 103	860	1020	460	490	21.4	30.0	WATER	0.04	60	32	0.6	5.11	25	14.5	GLYCOL	0.4	7.2	12.8	42.3	7.9	75	DIRECT	375	115/1/60
FC-02	TRANE	BCHD-36	ROOM 104	ROOM 105	860	1020	460	465	21.4	30.0	WATER	0.05	60	36	2.1	4.85	25	16	GLYCOL	0.27	7.2	12.8	19.2	5.43	75	DIRECT	375	115/1/60
FC-03	TRANE	BCHD-24	ROOM 119	ROOMS 107, 108, 138	860	710	460	240	21.0	30.0	WATER	0.03	60	39	0.7	2.62	25	14	GLYCOL	0.22	7.2	12.8	16.8	4.36	75	DIRECT	375	115/1/60
FC-04	TRANE	FCCB-20	ROOM 115	ROOMS 109, 110	790	610	360	70	18.9	30.0	WATER	0.01	60	40	0.5	1.0	25	15.7	GLYCOL	0.05	7.2	12.8	10	1.0	75	DIRECT	375	115/1/60
FC-05	TRANE	BCHD-54	ROOM 114	ROOM 112	860	1020	560	675	21.5	30.0	WATER	0.13	60	47.5	0.2	7.0	25	15	GLYCOL	0.5	7.2	12.8	9	9.92	75	DIRECT	375	115/1/60
FC-06	TRANE	BCHD-36	ROOM 114	ROOM 114	860	1020	460	390	21.1	30.0	WATER	0.04	60	35	1.5	4.2	25	14	GLYCOL	0.35	7.2	12.8	37.4	7.03	75	DIRECT	375	115/1/60
FC-07	TRANE	BCHD-24	ROOM 114	ROOMS 116, 117	860	710	460	200	21.1	30.0	WATER	0.02	60	38	0.5	2.2	25	13.5	GLYCOL	0.2	7.2	12.8	15.1	3.95	75	DIRECT	375	115/1/60
FC-08	TRANE	BCHD-36	ROOM 118	ROOM 118	860	1020	460	405	21.4	30.0	WATER	0.04	60	35	1.5	4.2	25	14.1	GLYCOL	0.36	7.2	12.8	38.2	7.17	75	DIRECT	375	115/1/60
FC-09	TRANE	BCHD-24	ROOM 124	ROOM 124	860	710	460	315	20.8	30.0	WATER	0.04	60	41	1.4	3.5	25	14.5	GLYCOL	0.25	7.2	12.8	19.4	4.99	75	DIRECT	375	115/1/60
FC-10	TRANE	BCHD-24	ROOM 126	ROOM 126	860	710	460	240	20.7	30.0	WATER	0.03	60	39	0.7	2.7	25	14	GLYCOL	0.22	7.2	12.8	16.8	4.36	75	DIRECT	375	115/1/60
FC-11	TRANE	BCHD-24	ROOM 130	ROOMS 165, 167, 168, 170	860	710	460	200	12.8	30.0	WATER	0.06	60	43.5	2.5	4.2	25	13.5	GLYCOL	0.2	7.2	12.8	15.1	3.95	75	DIRECT	375	115/1/60
FC-12	TRANE	BCHD-24	ROOM 130	ROOMS 158, 159,161,162,164	860	710	460	250	12.8	30.0	WATER	0.1	60	47	6	5.2	25	14.1	GLYCOL	0.22	7.2	12.8	17.2	4.45	75	DIRECT	375	115/1/60
FC-13	TRANE	BCHD-24	ROOM 135	ROOMS 150, 152,153,155,156	860	710	460	250	12.8	30.0	WATER	0.1	60	47	6	5.2	25	14.1	GLYCOL	0.22	7.2	12.8	17.2	4.45	75	DIRECT	375	115/1/60
FC-14	TRANE	BCHD-54	ROOM 135	ROOM 139	1060	1020	560	610	22.0	30.0	WATER	0.11	60	47	0.2	5.9	25	14.8	GLYCOL	0.48	7.2	12.8	8.5	9.46	75	DIRECT	375	115/1/60
FC-15	TRANE	BCHD-24	ROOM 135	ROOM 140,141, 142,144,148,173	860	710	460	280	16.1	30.0	WATER	0.08	60	45.5	3.8	4.75	25	14.4	GLYCOL	0.24	7.2	12.8	18.2	4.72	75	DIRECT	375	115/1/60

TAG	NOTES
FC-01	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS BOTTOM PULLOUT FILTER SECTION.
FC-02	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS BOTTOM PULLOUT FILTER SECTION.
FC-03	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS SIDE PULLOUT FILTER SECTION.
FC-04	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS SIDE PULLOUT FILTER SECTION.
FC-05	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS SIDE PULLOUT FILTER SECTION.
FC-06	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS SIDE PULLOUT FILTER SECTION.
FC-07	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS SIDE PULLOUT FILTER SECTION.
FC-08	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS SIDE PULLOUT FILTER SECTION.
FC-09	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS BOTTOM PULLOUT FILTER SECTION.
FC-10	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS SIDE PULLOUT FILTER SECTION.
FC-11	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS BOTTOM PULLOUT FILTER SECTION.
FC-12	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS BOTTOM PULLOUT FILTER SECTION.
FC-13	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS BOTTOM PULLOUT FILTER SECTION.
FC-14	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS BOTTOM PULLOUT FILTER SECTION.
FC-15	ECM MOTOR, DIRECT DRIVE, PROVIDE MANUFACTURERS BOTTOM PULLOUT FILTER SECTION.

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**WILLIAMS ENGINEERING CANADA**

JOB. TITLE: **WABASCA/DESMARIS GOVERNMENT BUILDING WABASCA, AB**

DWG. TITLE: **MECHANICAL SCHEDULES REVISED FAN COIL SCHEDULE ADDENDUM M1**

DWN. BY: QK	DES. BY: QK	PROJ. MGR.: BT
PEER REVIEW:	DATE: (YY-MM-DD) 2018.01.25	SCALE: AS SHOWN
CLIENT PROJ. #	WE PROJ. # 34310.00	
DWG #	M9.1-MSK-01	of 1 REV #

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This addendum forms part of the Bid and Contract Documents and modifies them as follows:

## SPECIFICATIONS

**1. 26 24 16.01 Panelboards Breaker Type**

**REVISE: 2.1.1 Panelboards:** To CSA C22.2 No.20 and product of one manufacturer.

**2. 26 32 11 Emergency Diesel Generator Set**

**REVISE: 1.3 Acceptable Manufacturers:** The intent of the spec is to allow equal generator manufacturers to bid on the project.

**REVISE: 2.1.1 Rating:** Altitude is 550m.

**REVISE: 2.2.4 Performance:** Motor starting capability is to match the load profile of the facility. Generator suppliers are to provide the correct starting capability for their generator to support the load.

**REVISE 2.10.8.1 Alternator Control Function:** The generator set shall be provided with a main line mounted breaker sized to suit the generator capacity as per the manufacturer requirements.

**3. 26 09 23.01 Metering and Switchboard Instruments**

**REVISE: 2.1.1 Meter:** Main customer meter in new main switchboard refers to Single Line Diagram.

## DRAWINGS

**1. Drawing E3.0**

**CLARIFICATION:** Fixture type in Room 106 is type F9.

**2. Drawing E4.0**

**REVISE:** Drawing has been re-issued with this addendum to address alignment issues.

## ATTACHMENTS

The following are attached hereto and form part of this addendum:

1. E4.0

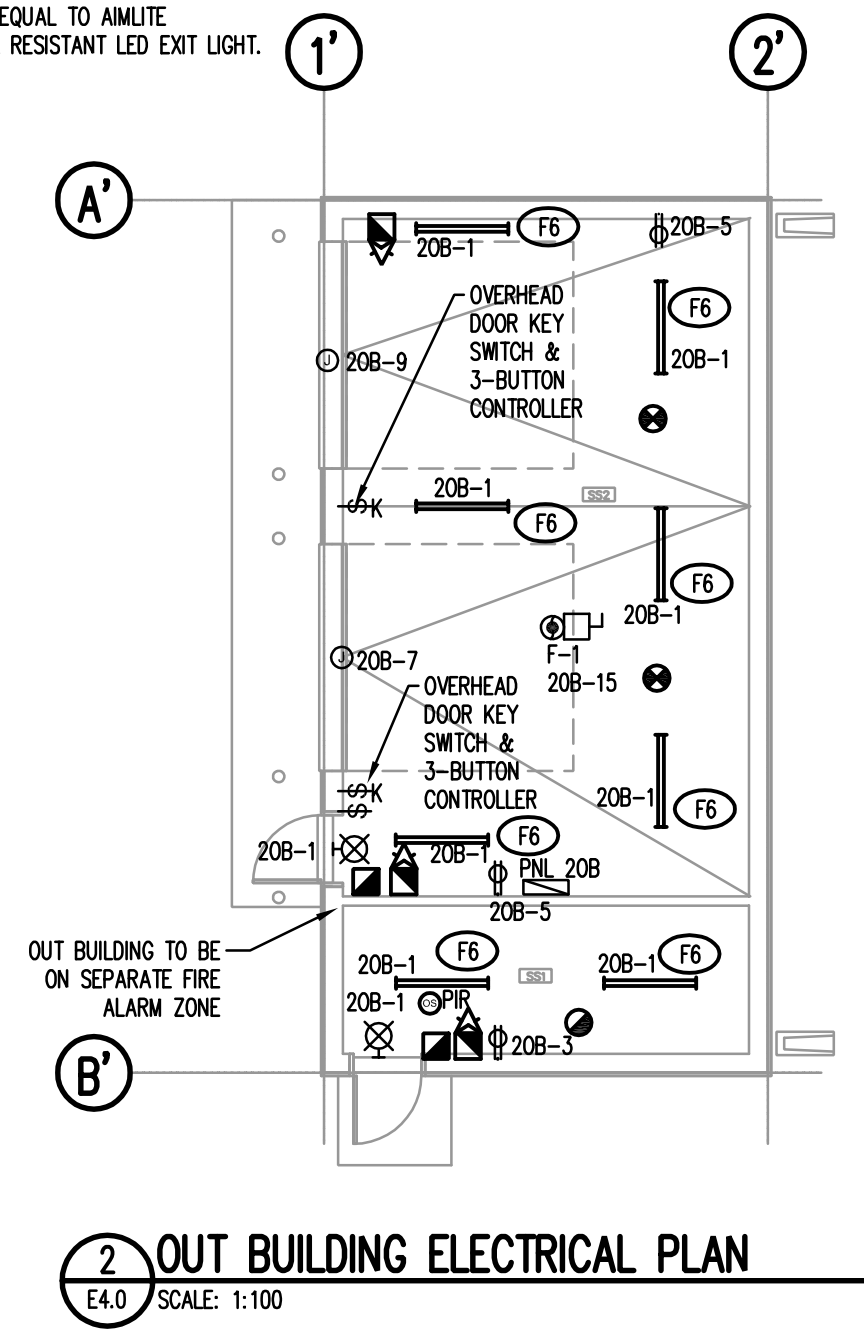
**END OF ADDENDUM E1**

- Notes:
- Do not scale drawing
  - It is the responsibility of the appropriate Contractor to check and verify all dimensions on site and report all errors and/or omissions to the Architect or Engineer
  - It is the responsibility of the appropriate Contractor to comply with all Codes and Regulations applicable to the performance of their work.
  - All Drawings and Specifications are instruments of service and are the property of the Architect or Engineer. This Drawing is the Copyright of STEPHENS KOZAK ACI ARCHITECTS AND PLANNERS or the Consultant named on this Drawing as at the date shown and may not be used or reproduced in whole or in part without the express written consent of the Architect or Engineer.
  - All dimensions are in mm unless noted otherwise.

ELECTRICAL SYMBOL LEGEND	
	MANUAL PULL STATION
	HORN/STROBE COMBO
	STROBE
	HEAT DETECTOR H = HIGH TEMPERATURE L = LOW TEMPERATURE R = RATE OF RISE
	SMOKE DETECTOR CG = SECURE CAGE AROUND DETECTOR
	CEILING MOUNT EXIT SIGN
	WALL MOUNT EXIT SIGN

**GENERAL NOTES:**

- SMOKE DETECTOR CAGES IN ROOMS 150, 152, 153, 155, 156, 158, 159, 161, 162, 164, 165, 167, 168, AND 170 TO BE ONE OF THREE TYPES: SIMPLEX GRINNELL GUARD MODEL 208B-9829C, GE SECURITY GUARD MODEL 6255-004 OR NOTIFIER GUARD MODEL SMOKE GIA-2.
- DUCT DETECTOR TO BE INSTALLED ON SUPPLY SIDE OF ERY-1 SUPPLY FAN DUCT IN STRAIGHT SECTION AS PER CAN/ULC 5-524. COORDINATE LOCATION ON SITE.
- EXIT SIGN TYPE EX-1 TO BE EQUAL TO AMLITE RPST-U-M-WHT-BAT LED EXIT SIGN.
- EXIT SIGN TYPE EX-2 TO BE EQUAL TO AMLITE RPR-1-W-WHT-BAT VANDAL RESISTANT LED EXIT LIGHT.



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REC JOB # 34010.00

WILLIAMS  
ENGINEERING  
**WE**

Issues/Revisions

No.	Description	Date	By
1	RE-ISSUED FOR WITH ELEC ADDENDUM 1	2018.01.22	BR
0	ISSUED FOR TENDER	2017.10.06	BR

Seal

PERMIT TO PRACTICE  
WILLIAMS ENGINEERING CANADA INC.  
PERMIT NUMBER  
P 10527  
The Association of Prof. Engineers  
and Geoscientists of Alberta.

Client  
**WABASCA-DESMARAIS**

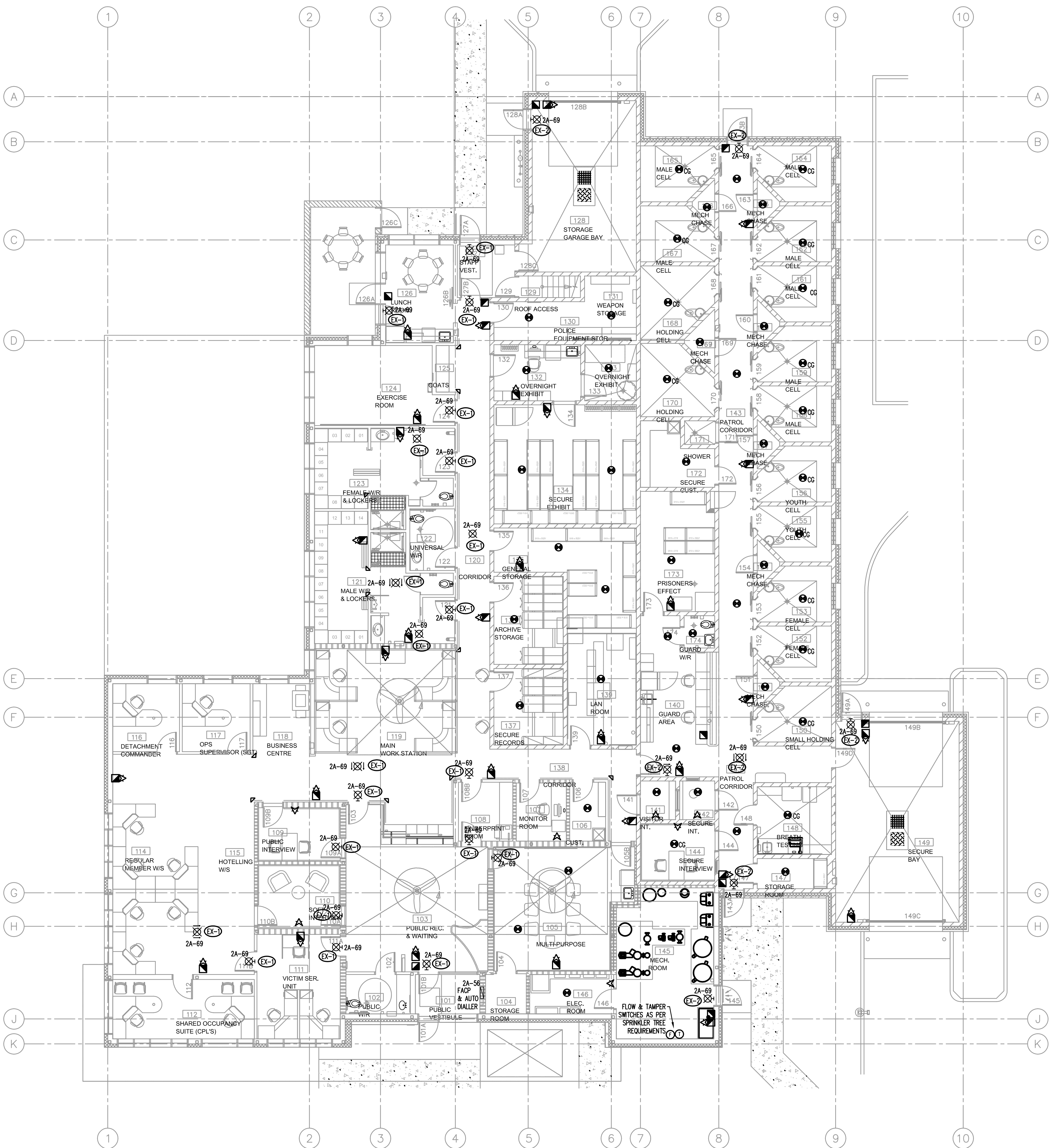
Project  
**WABASCA / DESMARAIS  
GOVERNMENT BUILDING**

Scale	AS NOTED	Designed By	AWM/MQK
Project No.	9031	Drawn By	AWM/MQK
Date	2001 JANUARY 00	Checked By	OK

Drawing Title  
**MAIN FLOOR  
LIFE SAFETY PLAN**

Drawing No.

**E4.0**



**1 LIFE SAFETY PLAN**  
E4.0 SCALE: 1:100

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This addendum forms part of the Bid and Contract Documents and modifies them as follows:

## SPECIFICATIONS

**1. 26 09 23.01 Metering and Switchboard Instruments**

**REVISE: 2.1.1:** Meter is to be a utility meter.

**2. 27 20 53 Seismic Restraint**

**ADD:** Specification section has been added. The building is to include seismic restraints as it is classified as a post disaster building.

## DRAWINGS

**1. Drawing E2.0**



**CLARIFICATION:** Symbol indicates auto door operator button.

**2. Drawing E6.2**

**REVISE:** Connected to each fan coil FC, provide power to new fan coil condensate pump. Condensate pump is 14W and can be fed off the same power source as fan coil.

## QUESTIONS

- a. What, if any, are the requirements for the **RD**'s-**R**oof **D**rain's heat tracing?

**RESPONSE:** Roof drains are not required to be heat traced.

1. Drawing E3.0 Main Floor Lighting Just to be clear, are there only Eight (8) Fixture Type F7 required in the Wheel Structure, in Room 103?

**RESPONSE:** Yes, not all spokes of the wheel structure are lit. Only those shown are electrical lighting fixtures as per the drawings.

**END OF ADDENDUM E2**

## Part 1 GENERAL

### 1.1 REGULATORY REQUIREMENTS

- .1 Restraints shall meet the requirements of the Alberta Building code for post disaster buildings.

### 1.2 SEISMIC RESTRAINT DESIGN AND INSPECTION

- .1 The contractor is required to provide the services of a registered Professional Structural Engineer who specializes in the restraint of building elements. This structural engineer, herein referred to as the seismic engineer shall provide all required engineering services related to seismic restraints and anchorage for all equipment and services.
- .2 The seismic engineer shall provide assistance to the contractor as necessary during the course of restraint of equipment.
- .3 The seismic engineer shall inspect the completed seismic installation and shall submit a statutory declaration to the consultant stating that the complete seismic installation is installed in accordance with his drawings and instructions and it complies with the regulatory requirements.
- .4 Contractor shall provide and submit Schedule B-C for Seismic Engineering.
  - .1 Schedule B-1: Letter of commitment by the Registered Professional
  - .2 Schedule B-2: Summary of Design and Field Review Requirements.
  - .3 Schedule C-2: Assurance of Professional Field Review and Compliance.

### 1.3 SCOPE OF WORK

- .1 All equipment shall be tested in an independent testing laboratory or shall be certified by a registered professional engineer to demonstrate that the equipment meets the requirements of all codes and bylaws in terms of "withstanding" the lateral forces in any direction to be expected in the project seismic zone. "Withstanding" shall generally mean remaining in one piece and not breaking away from moorings.
- .2 Provide certified, professionally sealed shop and placement drawings for all electrical equipment and equipment assemblies including runs of conduit/cable racks showing the methods of attachment to the particular structure for each piece of equipment and assembly and provide anchorage/attachment details approved and sealed by a registered professional engineer for review by the project structural engineer. Submit samples of materials required to complete the seismic restraint work for review if and when requested. Reports to the consultant throughout construction and to provide as required by the authorities having jurisdiction all required "letters of assurance and conformance" with the specified codes, standards and bylaws. If requested by the consultant, calculations sealed by a professional engineer registered in Alberta shall be provided for the seismic restraint design shown on the shop drawings. Shop drawings shall show the equipment type, manufacturer's name, model number and weight of the equipment restrained.

- .3 Free-standing equipment shall be fastened to the basic structure using anchorage / attachments to overcome seismic overturning forces as designed by a professional engineer as noted above.
- .4 Provide slack cable restraint systems as designed by a professional engineer as described previously but generally as follows:
  - .1 Connect slack cable restraints to suspended equipment in such a way that the axial projection of the wires passes through the centre of gravity of the equipment.
  - .2 Oriented restraint wires on suspended equipment at approximately 90° to each other (in plan), and tie back to the structure at an angle not exceeding 45° to the horizontal.
  - .3 Select each anchor in the structure for a load equal to twice the weight of the equipment with a safety factor of four.
  - .4 Install cable using appropriate grommets, shackles, thimbles, U-bolts, and other hardware to ensure alignment of the restraints and to avoid bending cables at connection points.
  - .5 Restraints shall be serviced at least 50 mm clear of all other equipment and services.
  - .6 Adjust restraint cables such that they are not visibly slack, but such that the flexibility is approximately 35 mm under thumb pressure for a 1500 mm cable length (equivalent ratio for other cable lengths).
  - .7 Provide transverse and axial restraints within four metres of a vertical bend.
  - .8 Trapeze hangers for cables, cable trays and raceways shall be restrained utilizing a minimum of 10 mm diameter slack cable restraints which shall be provided at a maximum transverse spacing of 12.5 m and longitudinal restraints at 25 m maximum spacing, or as otherwise limited by anchor/slack cable performance. Adjacent spacing of restraints on a run shall vary by approximately 20 percent to avoid coincident resonances.
  - .9 Transverse bracing for one raceway section may also act as longitudinal bracing for the raceway connected perpendicular to it, provided the bracing is installed within 610 mm of the elbow or junction box. Branch runs shall not be used to restrain main runs.
  - .10 Install a 900 mm length of flexible conduit and a braided bonding jumper in each surface mounted conduit where it crosses a building expansion or seismic joint.
  - .11 Rigid support systems shall not be braced to dissimilar parts of a building or two dissimilar building systems that may respond in a different mode during an earthquake.
  - .12 Provide loops in cables and flexible connections in raceways where such services leave a suspended trapeze rack or other support and extend down to floor braced equipment or wall mounted equipment. Freedom of movement shall be up to 300 mm in all directions.
  - .13 All recessed lighting luminaires in mechanical grid ceilings (i.e., t-bar) shall be restrained using at least two (2) #16 ASWG stranded stainless steel aircraft cable security bridles per fixture tied to the basic building structure. Attach security bridles at ends of each fixture using a further attachment to each corner of the luminaire and in such a manner that the luminaire cannot

- fall lower than 300 mm beneath the ceiling.
- .14 Surface-mounted lighting luminaires mounted on mechanical grid ceilings shall be attached to the ceiling system with positive clamping devices that completely surround the supporting members. Security bridles shall be minimum #16 ASWG stranded stainless steel aircraft cables and attached between the clamping devices and adjacent ceiling hanger or to their structure above in the same manner as described for recessed luminaire supports.
- .15 Pendant-hung or chain-hung lighting luminaires shall be provided with minimum #16 ASWG stranded stainless steel aircraft cables to the structure in the same manner as described for recessed luminaire supports.
- .16 Electrical outlet boxes flush mounted in mechanical grid ceilings shall be anchored to ceiling grid.

**END OF SECTION**



**Part 1            General**

**1.1                CASH ALLOWANCES**

- .1        Include in Contract Price specified cash allowances.
- .2        Cash allowances, unless otherwise specified, cover net cost to Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage installation and other authorized expenses incurred in performing Work.
- .3        Contract Price, and not cash allowance, includes Contractor's overhead and profit in connection with such cash allowance.
- .4        Contract Price will be adjusted by written order to provide for excess or deficit to each cash allowance.
- .5        Where costs under a cash allowance exceed amount of allowance, Contractor will be compensated for excess incurred and substantiated plus allowance for overhead and profit as set out in Contract Documents.
- .6        Amount of each allowance is as follows:
  - .1
  - .2        **Geotechnical Sitework Testing** including; All testing required to sitework specifications outlined in Section 31 00 10 – Geotechnical Sitework Testing and related sections: One Hundred Thousand (**\$100,000.00**) Dollars. Contractor will be compensated for the geotechnical testing once the test results have been submitted to the Engineer. The typical tests include the following;
    - .1        Sitework compaction testing for trench backfill and road construction, for all onsite and offsite construction.
    - .2        Sitework concrete material and strength tests for thrust blocks, sidewalks, curbs & gutters and sitework slabs, excluding structural slabs and structural stoops.
    - .3        Asphalt mix analysis and core analysis for all onsite and offsite construction.
    - .4        Material analysis for suitability analysis, proctor analysis and sieve analysis.
    - .5        Geotechnical engineer recommendations as requested by the Engineer and the Contractor, such as a proof roll or inspection of unforeseen conditions.
  - .3        **Utility Service Connections (Electrical)** including; power, phone and cable connections by utility company: Two Hundred Ten Thousand (**\$210,000.00**) Dollars. Work to be completed by the Contractor to be included in the Contract Price.

**Part 2            Products**

**2.1                NOT USED**

.1                Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1                Not Used.

**END OF SECTION**