



REQUEST FOR QUOTATIONS

Title: Pondside Café HVAC Upgrade

Reference No.: 1220-040-2020-036

MINOR WORKS SERVICES

(Construction Services)
Issue Date: May 28, 2020

REQUEST FOR QUOTATIONS

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REQUEST FOR QUOTATIONS

1. INTRODUCTION

The City of Surrey (the "City") invites contractors to provide a quotation on the form attached as Schedule C (the "Quotation") for the supply of the goods (if any) and services described in Schedule A (the "Work"). The description of the Work sets out the minimum requirements of the City. A person that submits a Quotation (the "Contractor") should prepare a Quotation that meets the minimum requirements, and may as it may choose, in addition, to also include goods, services or terms that exceed the minimum requirements.

2. ADDRESS FOR DELIVERY

A Quotation should be labelled with the Contractor's name, RFQ title and reference number. A Quotation should be submitted in the form attached to this RFQ as Schedule C – Form of Quotation.

The Contractor should submit the Quotation electronically in a single pdf file which must be received by City by email at: purchasing@surrey.ca

PDF emailed Quotations are preferred and the City will confirm receipt of emails. Note that the maximum file size the City can receive is 10Mb. If sending large email attachments, Contractors should phone [604-590-7274] to confirm receipt. A Contractor bears all risk that the City's computer equipment functions properly so that the City receives the Quotation.

3. DATE

The City would prefer to receive Quotations on or before June 18, 2020. The City's office hours are 8:30 a.m. to 4:00 p.m., Monday to Friday, except statutory holidays.

4. INQUIRIES

All inquiries related to this Request for Quotations ("RFQ") should be directed in writing to:

Name: Richard D. Oppelt, Manager, Procurement Services
Email: purchasing@surrey.ca

Reference: **1220-040-2020-036.**

5. ADDENDA

If the City determines that an amendment is required to this RFQ, the City's Representative will issue a written addendum by posting it on the BC Bid Website at www.bcbid.gov.bc.ca (the "BC Bid Website") and the City Website at www.surrey.ca (the "City Website") that will form a part of this RFQ. It is the responsibility of Contractor to check the BC Bid Website and the City Website for addenda. The only way this RFQ may be added to, or amended in any way, is by a formal written addendum. No other communication, whether written or oral, from any person will affect or modify the terms of this RFP or may be relied upon by any Contractor. By delivery of a Quotation, the Contractor is deemed to have received, accepted and understood the entire RFQ, including any and all addenda.

6. NO CONTRACT

This RFQ is simply an invitation for quotations (including prices and terms) for the convenience of all parties. It is not a tender or a request for proposals and no obligations of any kind will arise from this RFQ or the submission of Quotations. The City may negotiate changes to any terms of a Quotation, including negotiation of amendments to Contractors' prices in Schedule C to a Quotation, and may negotiate with one or more Contractors or may at any time invite or permit the submission of quotations (including prices and terms) from other parties who have not submitted Quotations. This RFQ does not commit the City in any way to select a Contractor or to proceed to negotiations for a contract, or to award any contract, and the City reserves the complete right to at any time reject all Quotations and to terminate this RFQ process.

7. ACCEPTANCE

A Quotation will be an offer to the City which the City may accept at any time by signing the copy of the Quotation and delivering it to the Contractor. A Quotation is not accepted by the City unless and until both the authorized signatory of the Contractor and the authorized signatory of the City have signed. Delivery of the signed Contract by the City may be by fax, pdf e-mail or hard copy. In that event, the contract will be comprised of the documents included in the definition of Contract in Schedule B – Draft Contract – Minor Works.

8. CONTRACTOR'S EXPENSES

Contractors are solely responsible for their own expenses in preparing and submitting Quotations, and for any meetings, negotiations or discussions with the City or its representatives and consultants, relating to or arising from the RFQ. The City will not be liable to any Contractor for any claims, whether for costs, expenses, losses or damages, or loss of anticipated profits, incurred by the Contractor in preparing and submitting a Quotation, or participating in negotiations for a contract, or other activity related to or arising out of this RFQ.

9. CONTRACTOR'S QUALIFICATIONS

By submitting a Quotation, a Contractor represents that it has the expertise, qualifications, resources, and relevant experience with the requirements of the Work.

10. CONFLICT OF INTEREST

A Contractor should disclose in its Quotation any actual or potential conflicts of interest and existing business relationships it may have with the City, its elected or appointed officials or employees. The City may rely on such disclosure.

11. SOLICITATION OF COUNCIL MEMBERS, CITY STAFF AND CITY CONSULTANTS

Contractors and their agents will not contact any member of the City Council, City staff or City consultants with respect to this RFQ, other than the contact person named in Section 4, at any time prior to the award of a contract or the cancellation of this RFQ.

12. CONFIDENTIALITY

All Quotations become the property of the City and will not be returned to the Contractor. All Quotations will be held in confidence by the City unless otherwise required by law. Contractors should be aware the City is a "public body" defined by and subject to the Freedom of Information and Protection of Privacy Act of British Columbia.

13. SIGNATURE

The legal name of the person or firm submitting the Quotation should be inserted in the Quotation. The Quotation should be signed by a person authorized to sign on behalf of the Contractor and include the following:

- (a) If the Contractor is a corporation then the full name of the corporation should be included, together with the names of authorized signatories. The Quotation should be executed by all of the authorized signatories or by one or more of them provided that a copy of the corporate resolution authorizing those persons to execute the Quotation on behalf of the corporation is submitted;
- (b) If the Contractor is a partnership or joint venture then the name of the partnership or joint venture and the name of each partner or joint venturer should be included, and each partner or joint venturer should sign personally (or, if one or more person(s) have signing authority for the partnership or joint venture, the partnership or joint venture should provide evidence to the satisfaction of the City that the person(s) signing have signing authority for the partnership or joint venture). If a partner or joint venturer is a corporation then such corporation should sign as indicated in subsection (a) above; or
- (c) If the Contractor is an individual, including a sole proprietorship, the name of the individual should be included.

14. INFORMATION MEETING

An information meeting will be hosted by the Owner's Representative (or designate) to discuss the City's requirements under this RFQ (the "Information Meeting"). While attendance is at the discretion of Contractors, Contractors who do not attend will be deemed to have attended the Information Meeting and to have received all of the information given at the Information Meeting.

At the time of issuance of this RFQ a meeting has been scheduled as follows:

| | |
|----------------|--|
| Date: | Thursday, June 4 th , 2020 |
| Starting Time: | 9:00 a.m. [local time] |
| Location: | 14320 – 57 Ave, Surrey, British Columbia |

Contractors are to meet at the main entrance of the restaurant.

****** In order to facilitate proper social distancing, the City has decided to conduct several smaller walk-throughs. Depending on numbers attending, contractors should anticipate a wait time to allow for this.******

The City has scheduled the following Information Meeting Times:

Thursday, June 4, 2020 – 9:00 a.m. (1), 9:30 a.m. (2), 10:00 a.m. (3), and 10:30 a.m. (4).

Please provide your preference by email at purchasing@surrey.ca. The City will make every reasonable effort to accommodate your preferred time. The City will confirm your preferred time by return email.

With a 1, 2, 3, or 4 to indicate preference if more than one time works.

Following the conclusion of the 10:30 a.m. (4) meeting, the City's on-site project manager (or designate) will respond to any additional questions.

It is possible that some questions raised and information provided during the Information Meeting may be the only source of critical information essential to prepare and submit a successful Quotation. Contractors are responsible to ensure they are fully informed and have a clear understanding of the requirements.

Contractors are to examine the site prior to submitting a Quotation to fully acquaint themselves with all existing conditions reasonably inferable from examination of the site and its surroundings and the RFQ and to make allowance for such conditions in the Quotation. By submitting a Quotation, a Contractor represents that it has examined the site fully as to all conditions, contingencies, risks and circumstances, local or otherwise, which might influence or affect the performance of the Work.

Note: No minutes of the information meeting and site tour will be provided

The Contractor is responsible for parking fees, if applicable.

SCHEDULE A – SCOPE OF WORK AND DRAWINGS

PROJECT TITLE: Pondside Café HVAC Upgrade

PROJECT No.: 1220-040-2020-036.

1. DESCRIPTION OF SCOPE OF WORK

The Work covered under this project consists of the furnishing of all superintendence, overhead, labour, materials, tools, equipment, insurance, fuel, transportation and all things necessary for and incidental to the satisfactory performance and completion of construction and renovation of **Pondside Café HVAC Upgrade** located at Pondside Café - 14320 – 57 Ave, Surrey, British Columbia (the “Place of Work”) in strict accordance with the Specifications and accompanying Drawings and subject to all terms and conditions of the Contract.

The Work consists of but is not necessarily limited to the following:

- Removal and Disposal of three existing furnaces and installation of two new Rooftop Units using existing ductwork including all mechanical, upgraded electrical, and structural work.

The lack of and/or omission of detailed specifications does not minimize the acceptable levels of service and only the best commercial practices are acceptable.

Contractor to comply with all BC Plumbing Code, BC Fire Marshal, BC Workers' Compensation Board, National Building Code of Canada, BC Boiler Inspector, BC Electrical Inspector, National Fire Protection Association, and any other authorities having local jurisdiction. Failure to abide by these rules and regulations will result in being immediately escorted from the work site.

2. EXPECTED START AND COMPLETION DATES

The services of the Contractor will be commencing on award of the contract. The expected completion date of this project is September 30, 2020.

3. LIST OF DRAWINGS

The following Drawings are included as part of this RFQ.

| LIST OF DRAWINGS | | | | |
|------------------|---|-----------|--------------|----------------|
| | TITLE OF DRAWING | SHEET No. | REVISION NO. | REVISION DATE |
| MECHANICAL | General Notes, Legends, Schedules & Details | M-1 | 3 | 23 April, 2019 |
| | HVAC Demo Plan | M-2 | 3 | 23 April, 2019 |
| | HVAC New Plan | M-3 | 3 | 23 April, 2019 |
| | Mechanical Specifications | M-4 | 3 | 23 April, 2019 |

| LIST OF DRAWINGS | | | | |
|------------------|--------------------------------|-----------|--------------|----------------|
| | TITLE OF DRAWING | SHEET No. | REVISION NO. | REVISION DATE |
| ELECTRICAL | Electrical Specs & Legend | E-1 | 1 | 8 April, 2019 |
| | Electrical Demo Plan | E-2 | 1 | 8 April, 2019 |
| | Electrical Reno Plan | E-3 | 1 | 8 April, 2019 |
| | | | | |
| STRUCTURAL | Roof Plan, Section And Details | S2.1 | 1 | 22 April, 2019 |
| | | | | |

**SCHEDULE B
SAMPLE – CONSTRUCTION CONTRACT**

Title: Pondside Café HVAC Upgrade

Contract No.: 1220-040-2020-036

THIS AGREEMENT dated the _____ day of _____, 202__.

BETWEEN:

CITY OF SURREY

13450 – 104th Avenue
Surrey, B.C., V3T 1V8, Canada

(the "**City**")

OF THE FIRST PART

AND:

(Full legal name and address of Contractor)

(the "**Contractor**")

OF THE SECOND PART

WHEREAS the Contractor wishes to undertake the following project for the benefit of the City:

Removal and Disposal of three existing furnaces and installation of two new Rooftop Units using existing ductwork including all mechanical, upgraded electrical, and structural work.

NOW THEREFORE THIS CONTRACT WITNESSETH that in consideration of the premises and payment of One (\$1.00) Dollar and other good and valuable consideration paid by each of the parties to each other (the receipt and sufficiency of which each party hereby acknowledges), the parties hereby covenant and agree with each other as follows:

1. DEFINITIONS

1.1 For the purposes of this Contract, the following terms shall have the meanings set forth below:

- (a) "**Certification of Completion**" means a certificate issued indicating that Substantial Performance of the Work has been achieved;

- (b) **"Certificate of Total Performance"** means a certificate issued indicating that the Work has been achieved;
- (c) **"Change"** means an addition to, deletion from or alteration of the Work;
- (d) **"Change Order"** means a Change is approved, the Consultant shall issue a written approval, setting out a description of the Work covered by the Change, the price or method of valuation for the Work, the change in the Contract Price and adjustment, if any, to the Contract Time. The value of the Work performed in a Change shall be included for payment with the certificates for payment;
- (e) **"City"** means the City of Surrey;
- (f) **"Consultant"** is the person or entity engaged by the City and identified as such in the Contract. The Consultant is the Architect, the Engineer or entity licensed to practice in the province of British Columbia. The term Consultant means the Consultant or the Consultant's authorized representative;
- (g) **"Construction Schedule"** means a construction schedule indicating the planned start and completion dates of the major activities of the Work as set out in Appendix [], a future Appendix;
- (h) **"Contract"** means this Contract as set out and described in the Contract Documents;
- (i) **"Contract Documents"** means this Contract including all schedules and appendices, construction standards, specifications and drawings;
- (j) **"Contract Price"** means the price of the Work as set out Section 4.1 of this Contract;
- (k) **"Contract Time"** means the period of time for the completion of the Work as provided by the Contract Documents;
- (l) **"Contractor"** means the person, firm or corporation identified as such in this Contract and includes the Contractor's authorized representative as designated to the City in writing;
- (m) **"Contractor's Representative"** means the person appointed by the Contractor to represent the Contractor for the purposes of this Contract and so notified to the City in writing;
- (n) **"Drawings"** means the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details and diagrams;
- (o) **"Extra Work"** has the meaning set out in Section 33;

- (p) **“Overhead”** means all costs associated with management, supervision, insurance, as-built preparation and warranty, administration and supervision at the Place of Work (including the provision of and maintaining office coordination, office costs, supervision, site trailer, telephone service, and long distance charges) courier, permits, insurance and small tools and general office supplies as required for the performance of the Work.”
- (q) **“Payment Certifier”** is the person or entity identified as such in the Contract responsible for the issuance of certificates of payment;
- (r) **“Place of Work”** means the designated site or location where the Work products are to be finally or permanently constructed or installed;
- (s) **“Project Manager”** is the person or entity engaged by the City and identified as such in the Contract;
- (t) **“Substantial Performance”** is as defined in the lien legislation applicable to the province of British Columbia;
- (u) **“Total Performance”** means the date of the City’s acceptance of the Work in writing as fully performed according to the Contract Documents; and
- (v) **“Work”** means and includes anything and everything required to be done for the fulfillment and completion of this Contract.

2. THE WORK – START/COMPLETION DATES

- 2.1 The Contractor will perform all Work and provide all labour, equipment and material and do all things strictly as required by the Contract Documents, including without limitation the scope of work and drawings specified in Appendix [], a future Appendix and Appendix [], a future Appendix

2.1.1 PANDEMIC RESTRICTIONS

The parties acknowledge that this Agreement has been entered into during the on-going COVID-19 pandemic (the “Pandemic”). The Contractor advises that it is able to proceed with the Services under the Pandemic conditions and restrictions (collectively the “Pandemic Restrictions”) as they exist as of the date of this Agreement. The parties acknowledge that Pandemic Conditions may change so as to cause unavoidable interruptions or interference to the Contractor’s performance of the Services. The parties confirm:

(a) notwithstanding the known existence of the Pandemic, Section 2.1.1 will apply to new Pandemic Restrictions, which arise after the date of this Agreement, whether anticipated or not, which reasonably interfere with the Contractor’s performance of the Services, such that upon the Contractor giving required notice shall be entitled to an extension of the time to perform the Services, but shall not be entitled to reimbursement of any costs;

(b) notwithstanding any such new Pandemic Restrictions, the Agreement will remain valid and in force, subject to the terms of the Agreement including, without limitation Section 23 (Workers’ Compensation Board and Occupational Health and Safety); and

(c) if new Pandemic Restrictions occur that cause or threaten interruption of the Services the Contractor will give the City immediate notice, and a written plan of the interim steps the Contractor will take, if any, during the interruption of the Services, and when Pandemic Restrictions permit, provide the City with a written plan for the resumption of the Services.

2.2 The Contractor will commence the Work on or before August 1, 2020. The Contractor will proceed with the Work diligently, will perform the Work generally in accordance with the Construction Schedule as set out in Appendix [], a future Appendix as required by the Contract Documents and will achieve Substantial Performance of the Work on or before Sept 30 subject to the provisions of the Contract Documents for adjustments to the Contract Time.

2.3 Time shall be of the essence of the Contract.

3. CONTRACT DOCUMENTS

3.1 All of the Contract Documents shall constitute the entire Contract between the City and the Contractor.

3.2 The Contract supersedes all prior negotiations, representations or agreements, whether written or oral, and the Contract may be amended only in strict accordance with the provisions of the Contract Documents.

3.3 If there is any inconsistency or conflict between the provisions of the Contract Documents, then the Contract Documents shall govern and take precedence in the following order with this Contract taking precedence over all other Contract Documents:

- (a) Contract;
- (b) Addenda (if any);
- (c) Departmental Construction Standards (if any);
- (d) Specifications;
- (e) Drawings; and
- (f) all other Contract Documents.

4. CONTRACT PRICE

4.1 The Contract Price for the Work shall be the sum of <<insert figures here>> dollars, plus goods and services tax in the amount of <<insert figures here>> dollars, for a total Contract Price of <<insert figures here>> dollars in Canadian funds (the "Contract Price") plus any adjustments approved by the City, including any payments owing on account of Change Orders and agreed to Extra Work, approved in accordance with the provisions of the Contract Documents.

4.2 For greater certainty, the Contract Price shall be the entire compensation due to the Contractor for the Work and this compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, Overhead, financing, General Conditions and all other costs and expenses whatsoever incurred in performing the Work, even if the Contract Documents does not specifically mention such items. The Contract Price is a firm fixed price.

5. HOLDBACKS

- 5.1 The City shall hold back 10%, or other percentage as required by the *Builders Lien Act*, S.BC 1997, c. 45, as amended (the "*Builders Lien Act*"), of any amounts due to the Contractor as a builders lien holdback.
- 5.2 In addition to other holdbacks as provided by the Contract Documents, when considering Substantial Performance, the City may hold back from payments otherwise due to the Contractor 200% of a reasonable estimate, as determined by the City's Representative, on account of deficient or Defective Work already paid for. This holdback may be held, without interest, until such deficiency or defect is remedied. The items of defect or deficiency and the amounts of related holdback shall be listed separately on the invoice.
- 5.3 If after Substantial Performance is achieved the Contractor is unable to complete any of the Work because of climatic or other conditions beyond the Contractor's reasonable control, then the City may hold back from payments otherwise due to the Contractor the amount as estimated by the Consultant in consultation with the Contractor by which the cost to have others complete the Work exceeds the estimated Contract Price for such Work.
- 5.4 The City may, in addition to other holdbacks as provided by the Contract Documents, hold back an amount equal to any lien which has been filed with respect to the Work, plus 15% as security for costs. The City may, at its option, after five (5) days written notice to the Contractor, pay such amount into court to discharge the lien. If the lien is discharged without payment of the holdback into court, then the City shall pay such holdback to the Contractor, without interest.
- 5.5 **Holdback period of 55 days will follow the date of substantial performance.** The City will perform a court registry search on the 46th day, on a best effort basis.

6. INVOICING AND PAYMENT

- 6.1 Subject to applicable legislation, including without limitation the holdbacks referred to in above, and the provisions of the Contract Documents, the City shall make payments to the Contractor thirty (30) days after receipt of any invoice from the Contractor.
- 6.2 The Contractor shall submit invoice(s) for payment to the City, based on the completion of each phase of the Work. Any and all Extra Work as approved by the City, should be clearly identified and quantified on a separate invoice(s).
- 6.3 The invoice(s) submitted for the completion of each project phase shall be clearly itemized to the details of the phase completed or the amount of Work performed, the billing rates, show an invoice number, contractor's name, address, telephone number, reference the City's purchase order number or name and location of employee, and in an itemized manner the amount due for each phase completed, tax (if any) and a grand total. The grand total will be subject to holdbacks.
- 6.4 The payment by the City of any monthly or other payment shall not bind the City with respect to any subsequent payment or the final progress payment, but shall be taken as approximate only, and shall not mean, or be construed to mean, that the City has accepted Work that is not in accordance with the requirements of the Contract Documents, or that the Contractor is in any manner released from its obligation to comply with the Contract

Documents.

- 6.5 For earlier payment, the Contractor can offer a cash discount.
- 6.6 Payments to Contractors can be made through Electronic Funds Transfer (EFT), directly into the Contractor's bank account. An EFT application form can be provided to the successful Contractor for completion.

SUBMITTING YOUR ELECTRONIC INVOICE

Please send electronic invoices to the City of Surrey by email to surreyinvoices@surrey.ca.

In order to process your payment, the following submission guidelines must be met:

- Each Invoice must be sent as a separate attachment
- Attachment(s) must be in PDF format.
- PDF attachment(s) must be named: <<Company name>>_<<Invoice Number>>
- Include Purchase Order number (to be provided).
- Email(s) must not exceed 2MB.

Please Note: failure to meet the guidelines above may result in payment processing delays or in your payment not being processed.

- 6.7 The City shall not be liable for interest or overdue charges on any invoice.
- 6.8 Unless otherwise provided, all dollar amounts referred to in this Contract are in lawful money of Canada.
- 6.9 If the Contractor is a non-resident of Canada and does not provide to the City a waiver of regulation letter, the City will withhold and remit to the appropriate governmental authority the greater of:
- (a) 15% of each payment due to the Contractor; or
 - (b) the amount required under applicable tax legislation.

7. PERFORMANCE OF THE WORK

- 7.1 The Contractor will perform and provide all labour, services and other acts, and provide all equipment, machinery, water, heat, power, and facilities required for performance of the Work.
- 7.2 The Contractor will not proceed with any work that is not part of the Work, except in accordance with the Contract.
- 7.3 The Contractor will apply for and pay for all necessary permits and licenses and pay all fees required for the performance of the Work.

8. CHANGES

- 8.1 The City may, without invalidating the Contract, change the Work by adding to or deducting from the Work in which event the Construction Schedule will be adjusted.

- 8.2 The Contractor will not proceed with any Change without a written Change Order signed by the City.
- 8.3 The Contractor's Overhead and profit will not be allowed on Change Orders paid for from allowances specified in the Contract.
- 8.4 The value of a change in the Work shall be determined by one or more of the following methods:
- (a) by estimate and acceptance in a lump sum; or
 - (b) by unit prices as set out in the Contract, or subsequently agreed upon; or
 - (c) by actual cost and an allowance for Overhead and profit as follows:
 - 1. Contractor's Overhead and profit on expenditures from cash allowances, shall be included in the Contract Price, except the Contractor is entitled to additional Overhead and profit only on the portion of the change greater than the cash allowance. If the change is less than the cash allowance the Contract Price shall be decreased by the amount of the change without adjustment for the Contractor's Overhead and profit;
 - 2. for changes in the Work not covered by cash allowances:
 - (i) if there is no increase or decrease in the Contract Price the Contractor is not entitled to any Overhead and profit on the change,
 - (ii) if the Contract Price is increased, the Contractor is entitled to an additional:
 - .1 10% Overhead and profit on Work performed directly by the Contractor, and
 - .2 5% on Work performed by the Subcontractor, only on the portion of the increase in the Contract Price, and
 - .3 0% on design services and work performed by the Contractor's consultants;
 - (iii) if the Contract Price is decreased by the change the Contractor is not entitled to Overhead and profit on the reduction in the Contract Price;
 - 3. the Subcontractor or the sub-subcontractor Overhead and profit shall be 5% of the actual cost of all Subcontractor's or sub-subcontractor's changes in the Work; and
 - 4. where the change involves the substitution of one type of Work and/or Product for another the actual cost of the change, shall be the net difference in the actual cost without any entitlement to Overhead and profit."

9. SITE CONDITIONS

- 9.1 The Contractor acknowledges and agrees that:
- (a) it has had the opportunity to undertake additional examinations or subsurface investigations, or both, of the Place of Work, including any buildings or structures involved with the Work, in order to satisfy itself as to site conditions, including subsurface conditions and the impact they could have on the Work and the Contract; and
 - (b) it is not entitled to any adjustment in the Contract, or to any other remuneration or damages whatsoever, in any way connected with the site conditions at the Place of Work, including subsurface conditions.

10. DOCUMENTS

- 10.1 The Contractor will keep one copy of the Contract, including the schedules and all Drawings, specifications and shop drawings, at the Place of Work in good order and available for review by the City's Representative, and deliver a complete set to the City upon Substantial Performance of the Work.
- 10.2 The Contractor agrees that the City is hereby granted an unconditional and irrevocable perpetual license to reproduce and use, in whole or in part, and for any purpose or other project or work the City desires, all matters contained in or set out in the Contract including all drawings and specifications and all models furnished by the Contractor, and the Contractor agrees that the license granted by this section comprises the copyright, industrial design, trademark and all other intellectual property therein.

11. TIME

- 11.1 The Contractor will proceed diligently and complete the Work in a good and workmanlike manner and strictly in accordance with the Construction Schedule.
- 11.2 If the Contractor is delayed in the performance of the Work by any act or neglect of the City, the Construction Schedule will be extended for such time as may be agreed by the City and the Contractor, acting reasonably.
- 11.3 The Contractor will, as required by the City, provide or up-date the Construction Schedule, showing the anticipated start and completion dates and durations of the major elements of the Work. Failure or refusal to provide a Construction Schedule or up-date will be a default.
- 11.4 Time is of the essence of the Contract.

12. TAXES AND DUTIES

- 12.1 The Contractor will pay all taxes, custom duties and other charges relating to the Work, and the supply and installation of all materials and equipment included in the Work.
- 12.2 Where an exemption of taxes, custom duties or other charges is applicable to the Contract by way of the Contractor filing claims for, or cooperating fully with the City and the proper authorities in seeking to obtain such refunds, the Contractor will make such applications and provide such cooperation. Refunds that are properly due to the City and have been recovered by the Contractor will be promptly refunded to the City.

13. BUILDER'S LIENS

- 13.1 The Contractor will immediately take steps to keep the Place of Work free of any builder's liens and certificates of pending litigation and the Contractor will defend and indemnify the City from any builder's lien or certificate of pending litigation filed as a result of the Work. The Contractor will pay all costs and expenses including actual legal costs incurred by the City as a result of any builder's lien or certificate of pending litigation related to the Work.

14. CITY DIRECTIONS

- 14.1 The Contractor will in all respects complete the Work in accordance with the City's requirements and standards and to the satisfaction of the City.
- 14.2 The City's Representative may at any time and from time to time inspect the Work.
- 14.3 The Contractor will comply with all directions from the City relating to the coordination of the Work with the activities of the City or with other contractors hired by the City, should there be any.
- 14.4 The Contractor will have total control of the Work and will be solely responsible for ensuring the Work is in accordance with the requirements of the Contract.

15. INSPECTIONS

- 15.1 The Contractor will retain one or more independent contractors with the relevant professional education, skill and experience, to carry out and report upon all testing and other inspection activities necessary to confirm the Work is in accordance with the requirements of the Contract. The Contractor will promptly provide copies of such reports to the City's Representative.
- 15.2 If Work is designated for tests, inspections or approvals by authorized agencies, the Contractor will give the City's Representative reasonable notice of when the Work will be ready for review and inspection.

16. USE OF PLACE OF WORK

- 16.1 The Contractor will confine its tools, machinery, equipment and materials to limits as may be established by the City's Representative, acting reasonably.
- 16.2 The Contractor will maintain the Place of Work in a tidy condition and free from the accumulation of waste products and debris, other than that caused by the City, other contractors or their employees.
- 16.3 Prior to application for the Certificate of Total Performance, the Contractor will remove all surplus products, tools, machinery and equipment, and any waste and debris, and leave the Place of Work clean and suitable for occupancy by the City.
- 16.4 The Contractor will not have exclusive use of the Place of Work, and will undertake the Work in cooperation with the City, and other users of the Place of Work as the City may permit or direct.
- 16.5 The Contractor will protect the property adjacent to the Place of Work from damage and will hold the City harmless from any claims which may arise as a result of the Contractor's operations under the Contract, or from failure to provide such protection, or both.
- 16.6 The Contractor will protect the Work, the Place of Work, the City's property from damage and will be responsible for any damage which may arise as a result of operations under the Contract, except damage which occurs as a result of actions of the City.

16.7 Should any damage occur to the Work, the Place of Work, or the City's property, or all of the aforementioned, for which the Contractor is responsible, the Contractor will:

- (a) make good such damage to the Work, and
- (b) if the City so directs, make good such damage to the City's property,

and the Construction Schedule will be extended for such time as may be agreed by the City and the Contractor, acting reasonably.

16.8 The City may take possession of and use any completed portion of the Work regardless of the time for completion of the Work. Such possession or use will not be construed as final acceptance of the Work or portion.

17. PERSONNEL

17.1 Superintendent: The Contractor shall employ a competent senior representative at the Place of Work (the "Superintendent") who shall have the responsibility to ensure that the Work is performed in compliance with the Contract Documents. The Contractor shall also employ necessary assistants for the Superintendent and the Superintendent and assistants shall be in attendance at the Place of Work while Work is being performed.

17.2 The Superintendent shall represent the Contractor at the Place of Work and instruction given to the Superintendent by the Consultant shall be held to have been given to the Contractor.

17.3 If the competence or performance of the Superintendent is not satisfactory to the Consultant then, on written request from the Consultant, the Contractor shall provide a satisfactory replacement. The Contractor shall not change the Superintendent without the consent of the Consultant, such consent not to be unreasonably withheld.

17.4 Workers: The Contractor shall maintain good order and discipline among the Contractor's employees and the subcontractors engaged in the Work. The Contractor shall not employ, or permit subcontractors to employ, workers who are not skilled in the assigned task. The Contractor shall employ sufficient workers to perform the Work in compliance with the Construction Schedule.

18. CODES AND REGULATIONS

18.1 The Contractor will perform the Work in full compliance with all applicable federal, provincial and municipal enactments, codes and regulations.

19. CONTRACTOR'S WARRANTY

19.1 The Contractor represents, warrants and guarantees to the City that:

- (a) the Work will, in all respects, be constructed in a good and workmanlike manner;
- (b) the Work will be constructed in accordance with all applicable laws in effect at the date of the Contract and in accordance with the best current and prevailing industry practices;
- (c) the Work will be supplied, procured, fabricated, installed, constructed and completed in accordance with all requirements of the Contract;
- (d) all Work will be free from defects or deficiencies arising from faulty construction, faulty material, faulty equipment, faulty installation or faulty workmanship;

- (e) the Work as constructed will be fit for the purpose intended;
 - (f) title to all Work and all parts thereof shall be free and clear of all liens, charges, encumbrances and adverse claims whatsoever; and
 - (g) no part of the Work shall constitute an infringement of any patent, trademark, copyright or other proprietary interest.
- 19.2 The Contractor agrees to correct any deficiency in the Work arising from faulty construction, faulty material, faulty equipment, faulty installation or faulty workmanship, which appear:
- (a) in the case of any roof, in the period of five (5) years after Substantial Performance of the Work;
 - (b) for other Work, excluding Work covered by a warranty greater than twelve (12) months, in the period of twelve (12) months after the date of Substantial Performance of the Work; and
 - (c) for other Work in the period of any warranties.
- 19.3 The Contractor shall undertake all repairs or replacements at times that will minimize interference with the City's operations.
- 19.4 Nothing contained herein limits the rights of the City in relation to recovery for latent deficiencies in the Work or otherwise limits the rights of the City at law or in equity.
- 19.5 The Contractor shall not be relieved of its warranty obligations by reason of inspection, testing or acceptance of the Work or any portion thereof, or the issuance of a Certification of Completion, or a Certificate of Total Performance, or payment to the Contractor of any money under the Contract.

20. WAIVERS

- 20.1 The Contractor's application for the Certification of Completion shall constitute a waiver and release by the Contractor of any and all claims arising out of or relating to the Contract to the date of Substantial Performance. This waiver shall include without limitation those that might arise from the negligence or breach of contract by the City, the City's Representative and their respective employees, agents, officers and contractors, but does not include claims made by the Contractor in writing prior to such application in accordance with the provisions of the Contract Documents and delivered to the City's Representative prior to date of Substantial Performance and still unsettled.
- 20.2 The Contractor's application for the Certificate of Total Performance shall constitute a waiver and release by the Contractor of any and all claims arising out of or relating to the Contract that have arisen between the date of Substantial Performance and the date of the Certificate of Total Performance. This waiver shall include those that might arise from the negligence or breach of contract by the City, the City's Representative, and their respective employees, agents, officers and contractors, but does not include claims by the Contractor in writing prior to such application in accordance with the provisions of the Contract Documents and delivered to the City's Representative and still unsettled.

21. SUBSTANTIAL PERFORMANCE

- 21.1 The City or its Consultant will, after receipt of a written application from the Contractor for a Certification of Completion, make an inspection and assessment of the Work and issue a Certification of Completion or if the City decides that Substantial Performance has not been

achieved, consult with the Contractor and advise the Contractor of the Work required to achieve Substantial Performance.

21.2 Prior to making application for Substantial Performance of the Work, the Contractor shall submit to the Consultant or City the following:

- (a) letters of assurance for professional design and review from those professionals engaged by the Contractor under the provisions of the Contract, including applicable sealed shop drawings;
- (b) all required manufacturer's inspections, certifications, guarantees, warranties as specified in the Contract Documents;
- (c) all maintenance manuals, operating instructions, maintenance and operating tools, replacement parts or materials as specified in the Contract Documents;
- (d) certificates issued by all permit issuing authorities indicating approval of all installations, work and improvements requiring permits;
- (e) certificates issued by all testing, commissioning, cleaning, inspection authorities and associations as applicable or specified in the Contract Documents; and
- (f) all required record Drawings and as built and as-installed documents in the form specified in the Contract Documents, including the as-built Drawings.

If it is impracticable, with reasonable diligence and attention, for the Contractor to have obtained one or more of the items listed above prior to making application for Substantial Performance of the Work, then delivery of such items may be deferred until the date that is 30 days following Substantial Performance of the Work.

21.3 Together with its request or application for the Certificate of Completion of the Work, the Contractor shall provide to the Consultant and the City the following:

- (a) a sworn declaration in a form acceptable to the Consultant that all amounts relating to the Work, due and owing as of the end of the month covered by the invoice to third parties including all subcontractors and suppliers, have been paid;
- (b) a current clearance letter from Workers' Compensation Board confirming that the Contractor is in good standing with and that all required remittances and assessments have been made to the Workers' Compensation Board;
- (c) a statement compiling and reconciling all Change Orders and Change Directives; and
- (d) any other documents to be submitted by the Contractor as specified in the Contract Documents or reasonably required by the Consultant or the City.

21.4 The City shall pay any builder's lien holdback as required by the *Builders Lien Act*, or on such other date as required by law, but the City may hold back the amounts for any deficiencies or filed builder's liens.

21.5 The Consultant shall be the payment certifier responsible for payment certification for the Contractor under the *Builders Lien Act*. The Contractor shall be the person responsible for payment certification for all subcontractors, including the subcontractors, as required under the *Builders Lien Act*.

22. TOTAL PERFORMANCE

22.1 Before applying for a Certificate of Total Performance, the Contractor will provide to the City the following:

- (a) complete sets of digital drawings and specifications, in reproducible form, showing the as-built Work;
 - (b) complete sets of maintenance manuals for any and all equipment comprised in the Work; and
 - (c) the results of quality control testing by the Contractor.
- 22.2 The Contractor may apply for a Certificate of Total Performance and the procedure and requirements for the issuance of the Certificate of Total Performance shall include the provision by the Contractor of the sworn declaration and Workers' Compensation Board compliance documentation.
- 23. WORKERS' COMPENSATION BOARD AND OCCUPATIONAL HEALTH AND SAFETY**
- 23.1 The Contractor agrees that it shall, at its own expense, procure and carry, or cause to be procured, carried and paid for, full Workers' Compensation Board coverage for itself and all workers, employees, servants and others engaged in the supply of the Goods and Services. The Contractor agrees that the City has the unfettered right to set off the amount of the unpaid premiums and assessments for the Workers' Compensation Board coverage against any monies owing by the City to the Contractor. The City will have the right to withhold payment under this Contract until the Workers' Compensation Board premiums, assessments or penalties in respect of the Goods and Services have been paid in full.
- 23.2 The Contractor will provide the City with the Contractor's Workers' Compensation Board registration number and a letter from the Workers' Compensation Board confirming that the Contractor is registered in good standing with the Workers' Compensation Board and that all assessments have been paid to the date thereof prior to the City having any obligations to pay monies under this Contract.
- 23.3 The Contractor agrees that it is the prime contractor for the Services as defined in the *Workers Compensation Act*. The Contractor will have a safety program in place that meets the requirements of the Workers' Compensation Board Occupational Health and Safety Regulation and the *Workers Compensation Act*. As prime contractor, the Contractor will be responsible for appointing a qualified coordinator for insuring the health and safety activities for the location of the Services. That person will be the person so identified in Schedule B of this Contract, and the Contractor will advise the City immediately in writing if the name or contact number of the qualified coordinator changes.
- 23.4 Without limiting the generality of any other indemnities granted by the Contractor in this Contract, the Contractor shall indemnify and save harmless the Indemnitees from and against all claims, demands, causes of action, suits, losses, damages, costs, liabilities, expenses, judgements, penalties and proceedings (including all actual legal costs) which any of the Indemnitees incur, suffer or are put to arising out of or in any way related to unpaid Workers' Compensation Board assessments owing from any person or corporation engaged in the performance of this Contract or arising out of or in any way related to the failure to observe safety rules, regulations and practices of the Workers' Compensation Board, including penalties levied by the Workers' Compensation Board.
- 23.5 The Contractor will ensure compliance with and conform to all health and safety laws, by-laws or regulations of the Province of British Columbia, including without limitation the *Workers Compensations Act* and Regulations pursuant thereto.

- 23.6 The City may, on twenty-four (24) hours written notice to the Contractor, install devices or rectify any conditions creating an immediate hazard existing that would be likely to result in injury to any person. However, in no case will the City be responsible to ascertaining or discovering, through inspections or review of the operations of the Contractor or otherwise, any deficiency or immediate hazard.
- 23.7 The Contractor understands and undertakes to comply with all Workers' Compensation Board Occupational Health and Safety Regulations for hazardous materials and substances, and in particular with the "Workplace Hazardous Materials Information System (WHMIS)" Regulations. All "Material Safety Data Sheets (MSDS)" shall be shipped along with the Goods and any future MSDS updates will be forwarded.

24. INSURANCE

- 24.1 The Contractor will obtain and carry, in forms and with insurers satisfactory to the City:
- (a) commercial general liability insurance in a wrap up form with a limit of five million (\$5,000,000) dollars inclusive per occurrence for bodily injury, death and damage to property;
 - (b) the insurance shall include the Contractor, the City, the project manager, all contractors, subcontractors, suppliers and tradesmen contributing to the Work;
 - (c) the insurance shall preclude subrogation claims by the insurer against anyone insured hereunder;
 - (d) the insurance shall include coverage for:
 - broad form products and completed operations,
 - City's and contractor's protective liability,
 - contractor's contingent liability,
 - blanket written contractual,
 - contingent employer's liability,
 - personal injury liability,
 - non-owned automobile,
 - cross liability,
 - employees as additional insured's, and
 - broad form property damage;
- and where such further risk exists:
- shoring, blasting, excavating, underpinning, demolition, removal, pile-driving and caisson work, work below ground surface, tunnelling and grading, as applicable, and
 - operation of attached machinery.
- (e) product and completed operations liability insurance, to remain in full force and effect for a period of not less than twelve (12) months following completion of the Work;
 - (f) course of construction insurance against "all risks" of physical loss or damage, and shall extend to cover all materials, property, structures and equipment while in transit or storage and during construction, erection, installation and testing, but such insurance shall not include coverage for the Contractor's equipment of any description. Such insurance shall be maintained until Substantial Performance of the Work;

- (g) Automobile Liability insurance on all vehicles owned, operated or licensed in the name of the Contractor in an amount not less than less three million (\$3,000,000 dollars);
 - (h) the insurance shall include as an insured, each contractor and subcontractor, project manager, architect and engineer who is engaged in the Work; and
 - (i) the insurance will contain a waiver of the insurer's rights of subrogation against all insured except where a loss is deemed to have been caused by or resulting from any error in design or any other professional error or omission.
- 24.2 The Contractor will provide proof of the required insurance coverage prior to commencing the Work. Such proof will be in the form of a City of Surrey certificate of insurance.
- 24.3 The Contractor acknowledges that any requirement or advice by the City as to the amount of coverage under any policy of insurance will not constitute a representation by the City that the amount required is adequate and the Contractor acknowledges and agrees that it is solely responsible for obtaining and maintaining policies of insurance in adequate amounts.
- 24.4 If requested to do so, the Contractor will provide the City with a copy of insurance policies relating to the Work.

25. INDEMNIFICATION

- 25.1 The Contractor shall indemnify and hold harmless the City, its elected officials, its officers, agents and employees (collectively the "Indemnitees") from and against claims, demands, losses, costs, damages, actions, suits or proceedings by third parties that arise out of, or are attributable to, any act or omission or alleged act or omission of the Contractor, the Contractor's agents, employees or subcontractors or suppliers in performance of the Contract.
- 25.2 The City shall indemnify and hold harmless the Contractor, it agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or which are attributable to a lack of or defect in title or an alleged lack of or defect in title to the Place of Work.

26. DEFECTIVE WORK

- 26.1 Work that is defective ("Defective Work"), whether the result of poor design, poor workmanship, use of defective materials or damage through carelessness or other acts, and whether incorporated in the Work or not, which has been rejected by the City as failing to conform to the Contract will be removed promptly by the Contractor and replaced and re-executed promptly and properly at the Contractor's expense.

27. DEFAULT

- 27.1 If the Contractor:
- (a) is adjudged bankrupt, makes a general assignment for the benefit of creditors, or a receiver is appointed on account of its insolvency;
 - (b) fails to supply competent supervision, properly skilled workers or proper materials;
 - (c) fails to make prompt payment to its contractors, suppliers or workers;
 - (d) fails to observe, or breaches the provisions of the Contract;

- (e) fails to remove and replace Defective Work;
- (f) abandons the Work; or
- (g) fails to adhere to the Construction Schedule;

the Contractor is in default of the Contract and the City may give the Contractor written notice to remedy such default. If the Contractor does not commence correction of such default within five (5) business days of receiving such notice and diligently pursue correction of such default, the City may suspend the Work or terminate the Contract, without prejudice to any other right or remedy the City may have.

27.2 The parties agree that if the City terminates the Contract under the conditions set out above, the City shall pay the Contractor:

- (a) for all Work performed, plus reimbursement for expenditures made on account of the remaining Work, but shall not pay for profit and Overhead on account of the remaining Work or any additional costs incurred because of the termination.

27.3 If the City terminates the Contract, the City may:

- (a) take possession of the Work and materials, and utilize the Contractor's machinery and equipment at the Place of Work to the extent third party rights are not impaired, and bring the Work to completion by whatever method the City may deem expedient; and
- (b) upon completion of the Work, charge the Contractor the full cost of completing the Work, as certified by the Consultant, including remedying any deficiencies in the Work.

28. CORRECTION BY CITY

28.1 In addition to the right of termination, if the Contractor fails to comply with a provision of the Contract, including failure to remove and replace Defective Work, the City may, without prejudice to any other remedy it may have, correct such default and charge the Contractor the full cost of correcting the default.

29. DISPUTE RESOLUTION

29.1 The parties will make reasonable efforts to resolve any dispute, claim, or controversy arising out of this Contract or related to this Contract ("Dispute") using the dispute resolution procedures set out in this section.

Negotiation

The parties will make reasonable efforts to resolve any Dispute by amicable negotiations and will provide frank, candid and timely disclosure of all relevant facts, information and documents to facilitate negotiations.

Mediation

If all or any portion of a Dispute cannot be resolved by good faith negotiations within 30 days, either party may by notice to the other party refer the matter to mediation. Within 7 days of delivery of the notice, the parties will mutually appoint a mediator. If the parties fail to agree on the appointment of the mediator, then either party may apply to the British Columbia International Commercial Arbitration Centre for appointment of a mediator. The

parties will continue to negotiate in good faith to resolve the Dispute with the assistance of the mediator. The place of mediation will be Surrey, British Columbia. Each party will equally bear the costs of the mediator and other out-of-pocket costs, and each party will bear its own costs of participating in the mediation.

Litigation

If within 90 days of the request for mediation the Dispute is not settled, or if the mediator advises that there is no reasonable possibility of the parties reaching a negotiated resolution, then either party may without further notice commence litigation.

30. ASSIGNMENT AND SUBCONTRACTS

- 30.1 The Contractor agrees to preserve and protect the rights of the parties under the Contract with respect to Work to be performed under subcontract and to:
- (a) enter into contracts or written agreements with subcontractors to require them to perform their work in accordance with and subject to the terms and conditions of the Contract Documents; and
 - (b) be as fully responsible to the City for acts and omissions of subcontractors and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by them. The Contractor agrees that he will incorporate the terms and conditions of the Contract Documents into all subcontract agreements entered into with subcontractors.
- 30.2 The Contractor agrees to employ those subcontractors proposed by in writing and accepted by the City at the signing of the Contract. The Contractor shall not, without the written consent of the City, change a subcontractor who has been engaged in accordance with the Contract.
- 30.3 The City may, for reasonable cause, object to the use of a proposed subcontractor and require the Contractor to employ one of the other subcontract tenderers.
- 30.4 In the event that the City requires a Change from a proposed subcontractor, the Contract Price shall be adjusted by the difference in cost and mark-up occasioned by such required Change.
- 30.5 The Contractor shall not be required to employ as a subcontractor a person or firm to whom he may reasonably object.
- 30.6 The Contractor may, upon reasonable request and at its discretion, provide to a subcontractor information as to the percentage or quantity of the subcontractor's work which has been certified for payment.
- 30.7 Nothing contained in the Contract Documents shall create a contractual relationship between a subcontractor and the City.

31. NOTICES

- 31.1 Any notice, report or other document that either party may be required or may wish to give to the other should be in writing, unless otherwise provided for, and will be deemed to be validly given to and received by the addressee, if delivered personally, on the date of such

(a) The City: City of Surrey – Civic Facilities
6651-148 St Avenue
Surrey, B.C., Canada, V3S 3C7

Attention: Clayton Welch
Project Coordinator

Business Fax: 604-599-8794
Business Email: cjwelch@surrey.ca

(b) The Contractor: [Insert full legal name and business address]

Attention: [Insert Contractor contact name]
[Insert title]

Business Fax: <<Insert>>
Business Email: <<Insert>>

(c) The Consultant (Payment Certifier): Flow Engineering
Suite 1080 – 1075 West Georgia Street,
Vancouver BC V6E 3C9

Attention: Bassam Yammine
Partner

Business Fax: 604-609-0588
Business Email: byammine@flowgroup.ca

32.1 Each party will be excused from performance under this Contract for any period and to the extent that it is prevented from or delayed in performing any obligations pursuant to this Contract, in whole or in part, by any Force Majeure Event. The affected party may invoke this section by promptly notifying the other party in writing of the nature and estimated duration of the suspension of the party's performance. In such event, the affected party will be excused from further performance of obligations so affected for so long as such Force Majeure Event prevails and such party continues to use its best efforts to recommence performance whenever and to whatever extent possible without delay (except that a party is not required by this Section to compromise its position with respect to or settle any labour dispute in order to satisfy its obligations hereunder). For the avoidance of doubt, nothing in this Section will affect the City's right to terminate this Contract for convenience as provided in Section 27.

32.2 For the purposes of this Contract, "Force Majeure Event" will mean the occurrence of an event or circumstance beyond the reasonable control of a party, provided that (i) the non-performing party is without fault in causing or preventing such occurrence and (ii) such

occurrence cannot be circumvented through the use of commercially reasonable alternative sources, workaround plans or other means. Force Majeure Events will include acts of federal, provincial, local or foreign governmental authorities or courts, war or insurrection, civil commotion, catastrophic events, including without limitation earthquakes, catastrophic weather conditions, pandemics, fires, floods, storms or other elements of nature or acts of God, and labour disturbances that affect the party claiming force majeure.

33. EXTRA WORK

- 33.1 The City may invite the Contractor to perform Extra Work as part of this Contract by issuing a Contemplated Change Order for the Extra Work.
- 33.2 It is a condition of a Contract that the City is not obligated at any time to make a request to the Contractor to perform Extra Work. The City reserves the right to retain the services of other independent contractor(s) or utilize its own employees to perform any Extra Work that is required to be performed and the Contractor and its subcontractors, if any, shall cooperate fully with other independent contractor(s) retained by the City to perform and/or complete any Extra Work and shall so carry on their work that other cooperating contractors shall not be hindered, delayed, or interfered with in the progress of their work, and so that all of such work shall be finished and complete of its kind.
- 33.3 The Contractor is under no obligation to accept an invitation to perform Extra Work and the City is under no obligation to offer work that might be undertaken by the Contractor as Extra Work.
- 33.4 If the City issues a Contemplated Change Order for Extra Work, the Contractor shall promptly either decline the opportunity to perform the Extra Work, or respond with a Quotation.
- 33.5 The City is under no obligation to accept the Contractor's Quotation for Extra Work and may elect to have the Extra Work performed by others.
- 33.6 In no event shall the Contractor proceed with any work that the Contractor intends or expects to be treated as Extra Work without first receiving a written Change Order approving the work as Extra Work.

34. LIQUIDATED DAMAGES FOR LATE COMPLETION

- 34.1 If the Contractor fails to meet the milestone date for Substantial Performance as set out in this Contract as may be adjusted pursuant to the provisions of the Contract Documents, then the City may deduct from any monies owing to the Contractor for the Work:
- (a) as a genuine pre-estimate of the City's increased costs for the Consultant and the City's own staff caused by such delay an amount of \$250.00 per day or pro rata portion for each calendar day that actual substantial performance is achieved after the Substantial Performance milestone date; plus
 - (b) all direct out-of-pocket costs, such as costs for safety, security, or equipment rental, reasonably incurred by the City as a direct result of such delay.

- 34.2 If the monies owing to the Contractor are less than the total amount owing by the Contractor to the City under (a) and (b) above then any shortfall shall immediately, upon written notice from the City, and upon Substantial Performance, be due and owing by the Contractor to the City.

35. NON ROAD DIESEL ENGINE EMISSION REGULATION

- 35.1 If you **own, operate, or hire** diesel powered equipment, Metro Vancouver's Non-Road Diesel Engine Emissions Regulation Bylaw No 1161, 2012 (the Bylaw) may impact your business. The Bylaw came into force on January 1, 2012 and requires owners or operators to register and label Tier 0 and Tier 1 non-road diesel engines that are 25 horsepower (19kW) or greater in order to operate within Metro Vancouver. Tier 0 engines must have **90 days** of registration purchased by **December 31, 2014** or the engine(s) will be **prohibited from ever operating** in Metro Vancouver. To be fully registered an owner/operator must:
- provide required information (machine/engine/company details),
 - pay fees, and
 - label machines with Metro Vancouver issued registration number.

The City may, at its discretion, give preference to equipment that meets higher emission standards.

Contact Metro Vancouver staff at 604-451-6655, visit www.metrovancouver.org/nonroaddiesel or email nonroaddiesel@metrovancouver.org for more information about the Bylaw, the rebate program, and for assistance with the registration process.

36. GENERAL

- 36.1 The Contract contains the entire agreement between the City and the Contractor and may not be amended except in writing and signed by both parties.
- 36.2 All schedules and appendices attached to the Contract will be read and construed as forming part of the Contract.
- 36.3 The Contract will be interpreted in accordance with the laws of the Province of British Columbia.
- 36.4 The headings are included in the Contract for convenience only and will not be referred to in interpreting the Contract.
- 36.5 No consent or waiver by either party to or of any breach or default by the other under the Contract will be effective unless in writing, nor will such consent or waiver be relied on as consent to or waiver of any other breach or default of the same or any other obligation.

36.6 Each party will, at its own expense, execute and deliver all such further agreements and documents and do such acts and things as may be reasonably required to give effect to the Contract.

IN WITNESS WHEREOF the parties hereto have executed the Contract on the day and year first above written.

CITY OF SURREY

by its authorized signatory(ies):

Insert Name of Person Signing

Insert Name of Person Signing

Insert Title of Person Signing

Insert Title of Person Signing

<<INSERT FULL LEGAL NAME OF CONTRACTOR>>

by its authorized signatory(ies):

Insert Name of Person Signing

Insert Name of Person Signing

Insert Title of Person Signing

Insert Title of Person Signing

SCHEDULE B – APPENDIX 1 SPECIAL PROVISIONS

S.P.1 Definitions

In these Special Provisions, unless the context otherwise requires,

“Section” means section of the Specifications or the Conditions of Contract.

“Item” means item of Fees and Payments – Schedule C – Form of Quotation.

S.P.2 Scope of Work

The Work covered under this project consists of the furnishing of all superintendence, overhead, labour, materials, tools, equipment, insurance, fuel, transportation and all things necessary for and incidental to the satisfactory performance and completion of **Pondside Café HVAC Upgrade** of Pondside Cafe, located at 14320 – 57 Ave, Surrey, British Columbia (the “Place of Work”) in strict accordance with the Specifications and accompanying Drawings and subject to all terms and conditions of the Contract.

The Work consists of but is not necessarily limited to the following:

- Removal and Disposal of three existing furnaces and installation of two new Rooftop Units using existing ductwork including all mechanical, upgraded electrical, and structural work.

The detailed scope of work is as described on the Drawings (listed below), Special Provisions (Schedule B – Appendix 1), and Supplementary Specifications (Project) (Schedule B- Appendix 2).

The lack of and/or omission of detailed specifications does not minimize the acceptable levels of service and only the best commercial practices are acceptable.

Contractor to comply with all BC Plumbing Code, BC Fire Marshal, BC Workers’ Compensation Board, National Building Code of Canada, BC Boiler Inspector, BC Electrical Inspector, National Fire Protection Association, and any other authorities having local jurisdiction. Failure to abide by these rules and regulations will result in being immediately escorted from the work site.

S.P.3 Consultant

The Consultant Flow Consulting, Telephone: 604-609-0500 Fax: 604-609-0588 E-mail: byamine@flowgroup.ca, represented by: Bassam Yammine will be the City’s representative during the performance of the Work until the Work is complete. The Consultant will advise and consult with the City. The City’s instruction(s) to the Contractor may be forwarded through the Consultant.

The Consultant may periodically visit the Work site(s) to become familiar with the progress of the Work, the quality of the Work being provided and to determine if the Work is proceeding in accordance with the Contract Documents.

S.P.4 Payment Certifier

The Payment Certifier is Flow Consulting, Suite 1080 – 1075 West Georgia Street, Vancouver BC V6E 3C9 Telephone: 604-609-0500 Fax: 604-609-0588 E-mail: byammine@flowgroup.ca, represented by: Bassam Yammine.

S.P.5 Project Manager

The Project Manager is Clayton Welch – City of Surrey, Telephone: 778-846-6081 Fax: 604-599-8794 E-mail: cjwelch@surrey.ca, represented by: Clayton Welch.

S.P.6 Schedule of Prices

This Contract is a combination of unit prices and lump sums.

Any Work item that is not implicitly described, or inferred, as being included in any regular item or optional item in the Schedule of Prices shall be included in the lump sum price proposed for 'Miscellaneous Work'.

For unit price items, the number of units for each item (i.e., quantities) as listed in the Schedule of Prices has been estimated. Actual quantities will vary. Payment will be made based on the measurement of the actual quantity of Work incorporated into the Contract.

The unit prices for each item will be applicable regardless of the variation in the actual quantity as compared to the estimated quantity. No adjustment to the unit price will be considered as a result of such variation.

S.P.7 Coordination

The Contractor will be responsible for coordinating with other contractors City forces, outside agencies and others as required throughout the Contract. While it is not an all-inclusive list of potential coordination requirements, the following list of known activities that the Contractor should be aware of when planning for coordination:

Other contractors

The Contractor will be required to coordinate their schedule and work program with the following construction activities, which will be tendered to other contractors by the City and will be construction concurrent with the Contract.

NONE

S.P.8 Availability of Place of Work

The Place of Work is available for the immediate commencement of the Work. The anticipated start date is August 1, 2020. The Contractor will schedule the Work accordingly.

S.P.9 Quality Assurance

The Work shall be performed by a Contractor experienced in Mechanical work of a similar nature and scope. Subject to approval of the City, the Contractor may subcontract any work to be performed under this Contract. However, the election to subcontract work shall not relieve the Contractor from responsibility or liability which it has assumed under this Contract and the Contractor shall remain liable to the same extent that its liability would attach, as if the Work had been performed by the Contractor's own employees.

All materials and hardware to be supplied by the Contractor, which are not specifically described herein, shall be of suitable construction, composition and quality to achieve their intended function.

S.P.10 Job Conditions

The Contractor shall be familiar with the project location and how the existing conditions will affect their work. This is so that no misunderstanding may arise afterwards as to the character or as to the extent of the work to be done; likewise, in order to advise and acquaint themselves with all precautions to be taken in order to avoid injury to person or property of another. No additional compensation will be granted because of any unusual difficulties or City's special requests that may be encountered in the execution of any portion of the work.

S.P.11 Environmental Protection

The Contractor warrants that it will not produce or discharge in any manner or form, directly or indirectly, chemicals or toxic substances into the environment and that all equipment used will not pose a hazard to, or harm or adversely affect anyone coming into contact with it and covenants and agrees to provide the City with an environmental plan (where applicable), acceptable to the City, which plan shall outline the procedures to be followed by the Contractor to prevent the production or discharge of chemicals or toxic substances into the environment and the actions to be taken should the discharge occur.

The Contractor will be responsible to take all necessary measures to comply with the requirements of the Federal and Provincial environmental protection agencies, City by-laws, the *Waste Management Act*, R.S.B.C. 1996, c. 482, as amended and any other applicable acts and regulations in respect to air, earth and water pollutants.

The Contractor will report to the City immediately if any hazardous or toxic materials are found or discovered. Such materials are to be left untouched and the area is to be marked and cordoned off to prevent any access to the workers and the public.

The Contractor will be responsible to establish and submit a waste disposal plan to the City for review prior to commencing the Work.

S.P.12 Safety

The Contractor shall be solely responsible for construction safety at the Place of Work as and to the extent required by applicable construction safety legislation, regulations and codes, including *Workers Compensation Act* and applicable regulations, and by good construction practice.

Safety – Fall Protection - The Contractor and any trade contractor shall include for all fall protection equipment and requirements necessary to complete scope of Work in a safe manner and in compliance with the site safety plan, which includes: Fall protection must be worn when working at a height over 6 ft. or as the hazards present necessity.

Safety – On-Site Hazards and Utilities Present – Before commencing any Work at the Place of Work, the Contractor is to make themselves aware of any and all on-site hazards including but not limited to underground and overhead utilities near to the Work area and to take every precaution necessary to eliminate any risk that may exist. If an on-site hazard exists that is causing or may cause injury to any person(s), the Contractor is to take immediate action to mitigate risk and damage, and then notify the City and the City's consultant (if any).

S.P.13 Traffic Management

The Contractor shall comply with all the requirements of applicable laws, rules, regulations, codes and orders of the City and other appropriate authorities concerned with work on streets or highways and shall post proper notices and/or signals, and provide necessary barriers, guards, lights, flagmen or watchmen as may be necessary for proper maintenance of traffic and protection of persons and property from injury or damage. All costs involved in respect to the above requirements will be deemed to be included in the Total Quotation Price.

S.P.14 Construction Access and Traffic Maintenance

The designated access to and from the construction site must be approved by the City. All construction traffic must use the designated access including heavy equipment, trucks and workers' personal vehicles.

Construction access to the Place of Work areas within existing building for workers and delivery of materials shall be designated by the City. No other existing exits or entrances shall be used by workers for access or for delivery of materials.

The Contractor shall conduct construction operations with minimum interference to adjacent roadways, sidewalks and access facilities in general and shall keep such areas free from materials, debris and equipment at all times. The Contractor shall not close or obstruct existing roadways, sidewalks, parking areas or delivery points and shall not place or store materials or park cars on same.

The Contractor shall cooperate in all ways with the City in all matters concerning necessary interference with normal operation of the Place of Work. Minimizing disruption of normal facility/site operation and vehicular movements at the Place of Work is an essential requirement of the Contract.

The Contractor shall:

- (a) Include project phasing strategies in the Construction Schedule to minimize traffic disruption on the Place of Work.
- (b) Should provide one (1) week minimum notice to the City, previous to any disruption or alteration of access to the Place of Work. The Contractor shall provide all signs,

- pylons and flag persons necessary to direct vehicular traffic around work in progress.
- (c) The Contractor shall maintain access to existing fire hydrants and Siamese connections and shall keep entrances and exits to existing and adjacent buildings clear at all times.

S.P.15 Proposed Substitutions

Acceptance of material specifications that are an equal or higher level of quality compared to the material specified will not be unreasonably withheld. Quotations for equipment substitutions to be made as separate line items and as additive or deductive alternates to the base equipment bid.

Evaluation of the substitutions to be made solely by the City whose decision shall be final.

S.P.16 Manuals

Installation and Operator's manuals should accompany equipment delivered. Electrical, mechanical, and plumbing booklets should be provided to the City, as per the specifications.

All manual(s) should be furnished prior to payment and delivered to the City. Failure to deliver all manual(s) that are ordered may result in non-payment until all manual(s) are received.

S.P.17 Hours of Work

Refer to the City of Surrey applicable bylaws for acceptable work hours.

No work is to be performed outside of these acceptable work hours without written approval from the City, and with approval by obtaining a noise variance if required.

All work shall conform to local bylaws, including building and parking bylaws and municipal guidelines and regulations. This includes Building Bylaws and Noise Restrictions, which will apply to all work being completed. Where work or the work schedule does not permit compliance with the Bylaws, the Contractor shall request permission from the City for special exemptions from the bylaws. No extra compensation, in any form (e.g. overtime, etc.) will be given without prior written approval from the City.

S.P.18 Damage

The Contractor will be responsible for any and all damages to property or persons and for any losses or costs to repair or remedy the Works as a result of any negligent act or omission, or misconduct in the performance of the Works and its subcontractor's Work and shall indemnify and hold harmless the City, its officers, agents and employees from all suits, claims, actions or damages of any nature whatsoever resulting therefrom unless such loss, damage, injury or loss results from or arises out of the error, omission and/or negligent acts of the City, or its officers, for subsequent correction of any such error, omission and/or negligent acts or of its liability for loss or damage resulting therefrom. Except as to professional liability, these indemnities shall not be limited by the listing of any insurance coverage.

S.P.19 Worksite Conduct

All labourers and workers, while working in and around the Pondside Café, 14320 57 Ave, Surrey, British Columbia, and the City facilities, shall act in a professional manner. The Contractor is to enforce proper discipline and decorum among all labourers and workers on the worksite and is to control, among other things: 1) noise, including music; 2) the use of offensive language; 3) smoking or drinking of alcoholic beverages on the worksite; 4) physical violence; 5) riding in the passenger elevators; 6) thievery; and 7) the transportation of articles or materials deemed hazardous. If the City determines, in its sole discretion, that any labourer need to be removed due to his or her failure to comply with the terms of this provision, the Contractor will remove such labourers from the worksite immediately.

Alcohol and drugs are not tolerated on this site at any time including anyone deemed to be under the influence shall be escorted off site.

S.P.20 Cleanliness and Disposal of Unwanted Materials

Continuous daily clean up of the work areas shall be performed by the Contractor and trade contractor throughout the performance of the Work and will be undertaken in accordance with the Contractor's waste management plan. Clean up of waste products and debris generated by the Contractor and any trade contractor outside of the building and on the site shall be the responsibility of the Contractor. Should the City be required to clean up the work of the Contractor or trade contractor the cost of such clean up will be recovered from the Contractor.

The Contractor is to dispose of all debris, trash and unsuitable materials collected under this Contract off site. The Contractor is solely responsible for any and all damages done, or regulations violated in the disposal of waste materials and for any other actions, which the Contractor performs.

The Contractor warrants that it will produce or discharge in any manner or form, directly or indirectly, chemicals or toxic substances into the environment and that all equipment used will not pose a hazard to, or harm or adversely affect anyone coming into contact with it and covenants and agrees to provide the City with an environmental plan (where applicable), acceptance to the City, which plan shall outline the procedures to be followed by the Contractor to prevent the production or discharge of chemicals or toxic substances into the environment and the actions to be taken should the discharge occur.

The Contractor is responsible to take all necessary measures to comply with the requirements of the Federal and Provincial environmental protection agencies, City by-laws, the *Waste Management Act*, R.S.B.C. 1996, c. 482, as amended and any other applicable acts and regulations in respect to air, earth and water pollutants.

S.P.21 Accidents; Equipment Safety

Any and all accidents, regardless of how minor, involving another person, private property, or vehicle, shall be reported immediately to the Surrey R.C.M.P. and a report requested. The City shall also be contacted immediately and be provided a copy of any reports.

The Contractor shall assume all responsibility for damages to property or injuries to persons, including accidental death, attorneys fee and costs of defense which may be

caused by Contractor's performance of this Contract, whether such performance be by itself, its subcontractor, or anyone directly or indirectly employed by Contractor or its subcontractors and whether such damage shall accrue or be discovered before or after termination of this Contract.

The Contractor's equipment operators shall maintain good safety and driving records, and use extreme caution during the performance of the Work.

S.P.22 Permits and Fees

The Contractor is to secure and pay for any additional permits, and governmental fees, licenses and inspection necessary for proper execution and completion of the Work which is customarily secured after execution of an agreement and which is legally required. The Contractor is to comply with and give notices required by laws applicable to performance of the Work.

S.P.23 Final Completion and Payment

When the Work is finally complete and the Contractor is ready for a final inspection, the Contractor is to notify the City and the Consultant, in writing. Thereupon, the Consultant will perform a final inspection of the Work. If the Consultant confirms that the project is complete including all deficiencies, is in full accordance with this Contract and the Contractor has performed all of its obligations, is hereby entitled to submit for final payment, subject to the *Builders Lien Act*.

S.P.24 Workmanship

- (a) General: Workmanship shall be of best quality, executed by workers experienced and skilled in respective duties for which they are employed. Do not employ any unfit person or anyone unskilled in their respective duties. The City reserves the right to dismiss for site, workers deemed incompetent, careless, insubordinate or otherwise objectionable. Decisions as to quality of fitness of workmanship in cases of dispute rest solely with the City, whose decision shall be final.
- (b) Coordination: Ensure cooperation of workers in laying out work. Maintain efficient and continuous supervision.
- (c) Protection of Work in progress: The Contractor is to adequately protect Work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by the City at no cost to the City.

Should any dispute arise regarding the quality of the workmanship, materials or products used in the performance of the Work, the final decision regarding the acceptable quality of the workmanship, and fitness of the materials and products rests strictly with the City.

Additionally, all Works required hereunder will be performed as promptly as possible, and in any event within the time stated by the City, and such Work will be subject to approval and acceptance of the City, but such approval and acceptance will not relieve the Contractor from the obligation to correct any incomplete, inaccurate or defective work, all of which shall be promptly remedied by the Contractor on demand, without cost to the City.

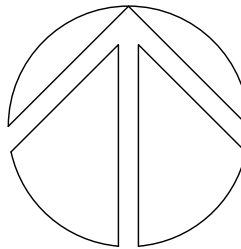
**SCHEDULE B - APPENDIX 2
SUPPLEMENTARY SPECIFICATIONS – (PROJECT)**

Refer to Appendix 2-A

SCHEDULE B - APPENDIX 2-A CONTRACT DRAWINGS - (PROJECT)

This drawing is the property of the Designer and may not be reproduced or used without the expressed consent of the Designer. All information shown on this drawings is for use on this project only and shall not be used otherwise. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Designer and obtain clarification prior to commencing work. Do not scale the drawings.

Project:
OCCASIONS AT
THE POND HVAC
UPGRADES
14320 57 AVENUE
SURREY BC



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| PROJECT: | 19-049 |
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GENERAL NOTES,
LEGENDS,
SCHEDULES &
DETAILS

Sheet

M-1

HVAC LEGEND

AIR DISTRIBUTION

NEW RECTANGULAR/ROUND DUCTWORK

EXISTING DUCTWORK

DUCTWORK TO BE REMOVED

NEW SINGLE LINE DUCTWORK

EXISTING SINGLE LINE DUCTWORK

SINGLE LINE DUCTWORK TO BE REMOVED

BRANCH TAKEOFF

SUPPLY DUCT (UP, DOWN)

RETURN OR TRANSFER DUCT (UP, DOWN)

EXHAUST DUCT (UP, DOWN)

ROUND DUCT (UP, DOWN)

DUCT TRANSITION, SINGLE LINE DUCT

CAPPED OFF EXISTING DUCT.

SUPPLY DIFFUSER, NEW/EXISTING

RETURN GRILLE, NEW/EXISTING

EXHAUST GRILLE, NEW/EXISTING

BALANCING DAMPER

FIRE DAMPER HORIZONTAL/VERTICAL DUCT

CONTINUATION OF DUCTWORK DOUBLE/SINGLE LINE

CONTROLS

NEW CONTROL WIRING

NEW THERMOSTAT

EQUIPMENT TAG FOR HVAC

BALANCE AIR QUANTITY A = CFM

PLUMBING LEGEND

PLUMBING

DIRECTION OF FLOW

GAS

EXISTING GAS LINE

NEW GAS LINE

PIPE CAPPED-OFF

ISOLATION VALVE

PRESSURE REDUCING VALVE

CONTINUATION OF PLUMBING PIPING

GENERAL NOTES

- LOCATION OF EXISTING EQUIPMENT SHOWN ON THIS DRAWING IS FOR INFORMATION ONLY. CONTRACTOR SHOULD REVIEW AND CHECK THE EXACT LOCATION, SIZE, ELEVATION AND INVERT OF ALL EXISTING EQUIPMENT, THERMOSTATS, DUCTWORK AND PIPING ON SITE PRIOR TO COMMENCING WITH WORK.
- CONTRACTOR TO COORDINATE EXACT DUCTWORK ROUTING WITH MECHANICAL DUCTING AND PIPING IN CEILING SPACE. MODIFY TO SUIT SITE CONDITIONS WITHOUT EXTRA COST TO THE OWNER. PROVIDE ADEQUATE OFFSETS, AND TRANSITIONS ON NEW DUCTWORK AS REQUIRED.
- CONTRACTOR TO PROVIDE A MAXIMUM OF 36" OF FLEXIBLE DUCT CONNECTION TO A DIFFUSER.
- CONTRACTOR TO PROVIDE SEISMIC RESTRAINT AND SEISMIC ENGINEER LETTER OF ASSURANCE FOR ALL NEW AND RELOCATED MECHANICAL EQUIPMENT (DIFFUSERS, FANS, ETC.).
- CONTRACTOR TO ENSURE ROOM THERMOSTAT LOCATIONS AS SHOWN ON DRAWINGS ARE COORDINATED WITH THE HVAC EQUIPMENT SERVING ALL PARTICULAR SPACES. .
- COORDINATE THERMOSTAT LOCATIONS TO AVOID CONFLICT WITH FURNITURE LAYOUT. DO NOT LOCATE NEAR HEAT EMITTING DEVICES, OR IN ACCESS OF DIRECT SUNLIGHT.
- PROVIDE BALANCING DAMPER FOR EACH TAKE OFF FROM NEW EQUIPMENT AND BALANCE AIR FLOW TO DESIGN RATE SHOWN ON DRAWING. CAP OFF PROPERLY ALL CONSTANT VOLUME BOX BRANCHES WHICH HAVE NOT BEEN USED.
- CONTRACTOR TO RETAIN BASE BUILDING APPROVED ROOFING CONTRACTOR FOR ALL ASSOCIATED ROOFING WORK.
- PROVIDE SHEET METAL CAPS FOR ALL UN-USED BRANCH CONNECTIONS. CAULK WITH HIGH PRESSURE MASTIC.
- PRIOR TO DEMOLITION OR CONSTRUCTION, PROVIDE TEMPORARY FILTER MATERIAL AT MAIN DUCTWORK TO PREVENT CONSTRUCTION DUST FROM ENTERING THE HVAC SYSTEM. REMOVE AT END OF JOB.
- PROVIDE 1" THICK INTERNAL ACOUSTIC DUCT INSULATION ON INTAKE/DISCHARGE DUCTWORK FOR ROOF TOP UNITS.
- COORDINATE WITH ALL EXISTING MECHANICAL INSTALLATIONS INSIDE CRU.
- MECHANICAL CONTRACTOR IS TO SEND A COMPLETE SET OF DRAWINGS TO THEIR SUB-TRADES ANY SUPPLIERS AT TIME OF TENDER. NO CHANGES WILL BE CONSIDERED BY ANY SUB-TRADE OR SUPPLIER CLAIMING THAT THEY WERE NOT AWARE OF THE COMPLETE PROJECT SCOPE.

PROJ. CLOSE-OUT DOCUMENTS BY CONTRACTOR

CONTRACTOR IS TO PROVIDE, AT END OF JOB, THE LISTED DOCUMENTS PRIOR TO SIGN OFF BY THE ENGINEER.

- ALL NECESSARY INTERIM AND FINAL INSPECTION CERTIFICATES FROM THE CITY OF SURREY.
- SCHEDULE CB FOR SEISMIC RELATED WORK.
- AIR BALANCE REPORT IN PDF (CAD) FORMAT. ACCEPTABLE AGENCIES: KD, WESTERN MECHANICAL AND BLUE COLLAR GROUP.
- AS-BUILT DRAWINGS BY CONTRACTOR, IN CAD FORMAT.
 - PROVIDE A SET FOR EACH DISCIPLINE (HVAC, CONTROLS)
 - INCLUDE STAMP INDICATING WHICH CONTRACTOR PREPARED THE MARKUPS WHICH THE AS-BUILT IS BASED.
 - FOR CONTROLS, PROVIDE SCREEN SHOTS OF UPDATED GRAPHICS.
- COMPLETE O&M MANUAL, IN BINDER FORMAT. INCLUDE NEW EQUIPMENT INFORMATION, PRINT OF CAD AS-BUILT COPIES, LETTERS OF ASSURANCE, WARRANTIES, ETC. TO BE SUBMITTED TO MECHANICAL CONSULTANT AND BASE BUILDING RECORDS.
- ANY ADDITIONAL DOCUMENTS REQUIRED AND LISTED IN FIELD REPORTS.
- 1 WEEK NOTICE IS TO BE PROVIDED TO ENGINEER THAT MECHANICAL SYSTEM IS COMPLETE AND COMMISSIONED SO THAT ENGINEER MAY PROVIDE CLIENT ORIENTATION OF SYSTEM OPERATION.

DRAWING LIST

M-1: GENERAL NOTES, LEGENDS, SCHEDULES & DETAILS

M-2: HVAC DEMO PLAN

M-3: HVAC NEW PLAN

M-4: MECHANICAL SPECIFICATION

| PACKAGED GAS-FIRED DX COOLING ROOFTOP UNIT SCHEDULE | | | | | | | | | | | | |
|--|--------------------|------|--------------------|-------------------------|---------------------------|------------------------------|-------------------------------|-----------------------|------|-----|-----------------|-------|
| TAG | SERVICE | MAKE | MODEL | AIR FLOW (CFM @ ESP) | TOTAL COOLING (MBH) | SENSIBLE COOLING (MBH) | TOTAL HEATING (MBH) | ELECTRICAL (V/A/ø) | MCA | MOP | WEIGHT (LBS) | NOTES |
| RTU-1 | CONFERENCE ROOM | YORK | ZE036H05B2C1AAA1A1 | 1200 @ 0.5 | 36.9 | 27.1 | 50 MBH INPUT 40 MBH OUTPUT | 208/60/3 | 19.6 | 25 | 663 | ALL |
| RTU-2 | SEATING AREA | YORK | ZF090N12S2B1AA1A2 | 2600 @ 0.5 | 94.5 | 94.1 | 120 MBH INPUT 96 OUTPUT | 208/60/3 | 40.5 | 50 | 1191 | ALL |
| NOTES : 1. R-410A REFRIGERANT 2. FREE COOLING ECONOMIZER C/W MODULATING VOLUME CONTROL 3. 7 DAY PROGRAMMABLE THERMOSTAT 4. 14" FLAT ROOF CURB 5. GAS CONNECTION 6. DOWN DISCHARGE MODEL 7. DIFFERENTIAL ENTHALPY CONTROL TO BE PROVIDED TO CONTROL ECONOMIZER 8. APPROVED ALTERNATES: LENNOX | | | | | | | | | | | | |

| AIR OUTLET SCHEDULE | | | | | | |
|---------------------|-------------------------|------------|-------|---------------------------|----------|-------------------------------------|
| TAG | SERVICE | MAKE | MODEL | COLOUR | SIZE | NOTES |
| SD-1 | SQUARE CONE DIFFUSER | E.H. PRICE | SCD | COORDINATE WITH ARCHITECT | 24"x24" | - T-BAR MOUNT, SQUARE CONE DIFFUSER |
| RG-1 | EGG GRATE RETURN GRILLE | E.H. PRICE | 80/TB | COORDINATE WITH ARCHITECT | AS SHOWN | - T-BAR MOUNT RETURN GRILLE |

INSULATE INSIDE OF METAL ENCLOSURE WITH 50mm [2"] RIGID INSULATION.

INSULATE CAVITY WITH R10 FIBERGLASS BATT INSULATION.

300mm [12"]

SHEET METAL ENCLOSURE-CROSS-BREAK OR SLOPE FOR DRAINAGE.

SHEET METAL COLLAR.

CAULK AND SEAL ALL AROUND COLLAR.

SLOPE COLLAR AND PIPES AWAY FROM HOOD.

CURB c/w FLASHING AND COUNTERFLASHING BY GENERAL CONTRACTOR.

WEATHER PROOF INSULATION COVER (REFER TO SPEC)

ROOFING MEMBRANE BY GENERAL CONTRACTOR.

CANT STRIP SET IN BITUMEN BY GENERAL CONTRACTOR.

SHEET METAL CLOSURE PANEL.

MINIMUM 100mm [4"] CLEARANCE FROM PIPE TO TOP OF CURB

MINIMUM 50mm [2"] BETWEEN PIPES.

NOTES:

- ALL WORK BY DIV. 15, UNLESS OTHERWISE NOTED.

A PIPE PENETRATIONS THROUGH ROOF

M1 SCALE: N.T.S.

ROOFTOP MECHANICAL UNIT

SEISMIC CONNECTIONS FROM UNIT TO CURB BY EQUIPMENT MANUFACTURER

NEOPRENE GASKET BETWEEN UNIT AND ROOF MOUNTING CURB

NAILER STRIP

RIGID INSULATION INSIDE CURB

ROOF MOUNTING CURB

COUNTER-FLASHING

ROOFING

ROOF DECK

P.E.N.G. CERTIFIED SEISMIC CONNECTION TO STRUCTURE

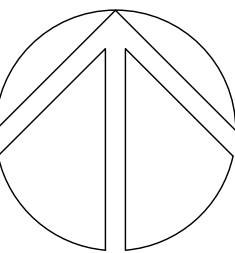
INSTALL TO R.C.A.B.C. STANDARDS

ROOFTOP UNIT MOUNTING FRAME INSTALLATION

A SCALE: N.T.S.

M1

Project:
OCCASIONS AT
THE POND HVAC
UPGRADES
14320 57 AVENUE
SURREY BC



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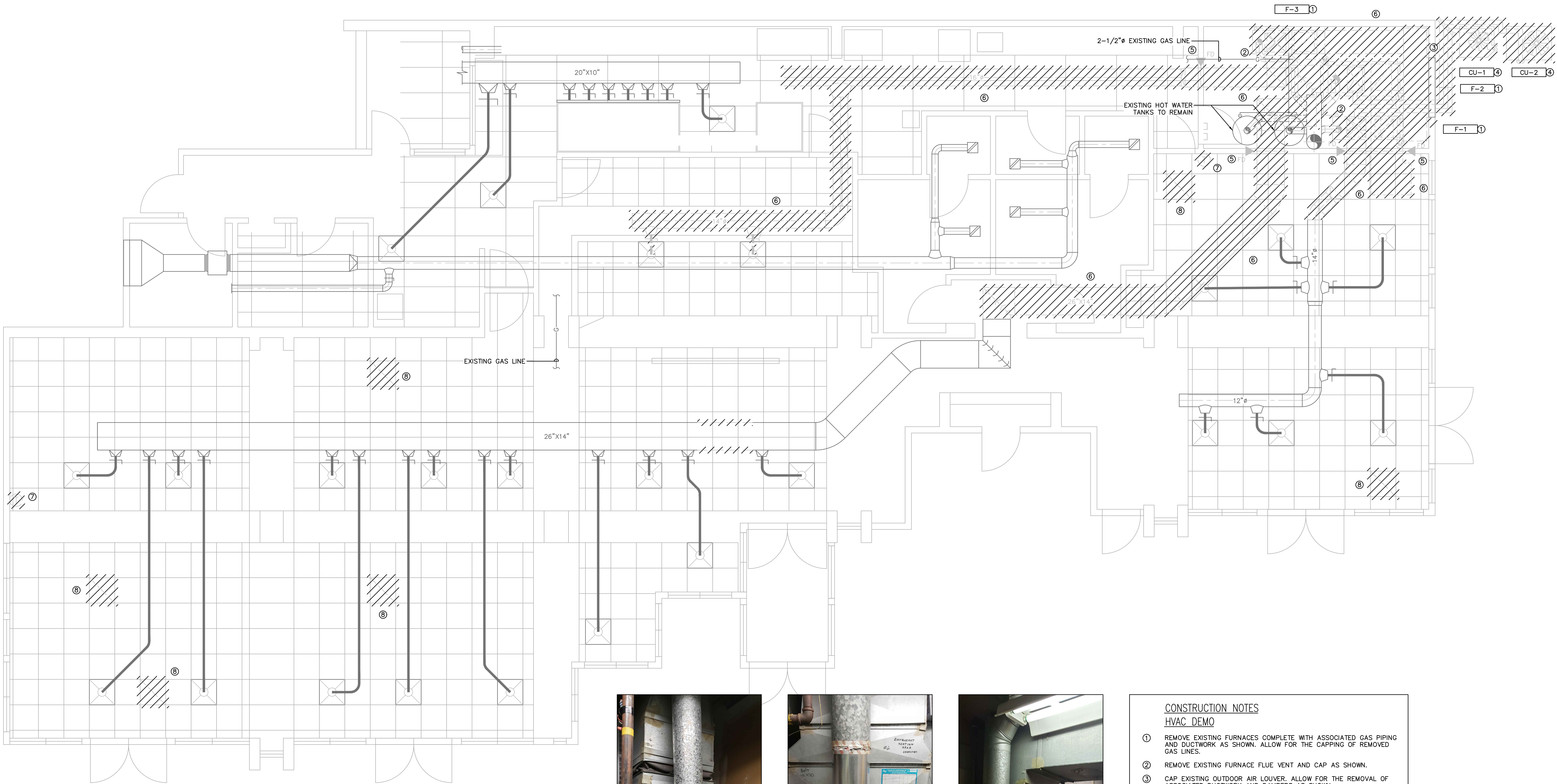
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HVAC DEMO PLAN
Sheet

M-2

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 EXISTING CONDENSING UNIT
 SCALE: N.T.S




 EXISTING F-1
 SCALE: N.T.S




EXISTING F-2

SCALE: N.T.S




 D EXISTING F-3
 M2 SCALE: N.T.S

- ① REMOVE EXISTING FURNACES COMPLETE WITH ASSOCIATED GAS PIPING AND DUCTWORK AS SHOWN. ALLOW FOR THE CAPPING OF REMOVED GAS LINES.
- ② REMOVE EXISTING FURNACE FLUE VENT AND CAP AS SHOWN.
- ③ CAP EXISTING OUTDOOR AIR LOUVER. ALLOW FOR THE REMOVAL OF ASSOCIATED DUCTWORK AND DAMPERS AS SHOWN.
- ④ REMOVE EXISTING D/X COOLING COILS COMPLETE WITH ALL ASSOCIATED REFRIGERANT PIPING, CONDENSING UNITS AND STEEL SUPPORT FRAMES AS SHOWN. ALLOW FOR THE MAKING GOOD OF PENETRATIONS. ALLOW FOR DISPOSAL AND FOR PROPER REFRIGERANT & OIL RECOVERY. ELEMENT IS TO BE DISPOSED OF BY CONTRACTOR WITHIN ENVIRONMENTALLY FRIENDLY PRACTICES AND TO ALL CITY OF SURREY GUIDELINES. PROVIDE OIL AND HALOCARBON DISPOSAL CERTIFICATES.
- ⑤ ALLOW FOR THE REMOVAL OF FIRE DAMPERS AS SHOWN. ALLOW FOR THE MAKING GOOD OF PENETRATIONS, PENETRATION TO BE CLOSED TO MATCH THE FIRE RATING OF EXISTING PARTITION.
- ⑥ REMOVE EXISTING DUCTWORK AS CAP AS SHOWN.
- ⑦ REMOVE EXISTING THERMOSTATS, ALLOW FOR THE REPLACEMENT WITH NEW.
- ⑧ REMOVE EXISTING RETURN GRILLES AS SHOWN. ALLOW FOR THE MAKING GOOD OF CEILING.



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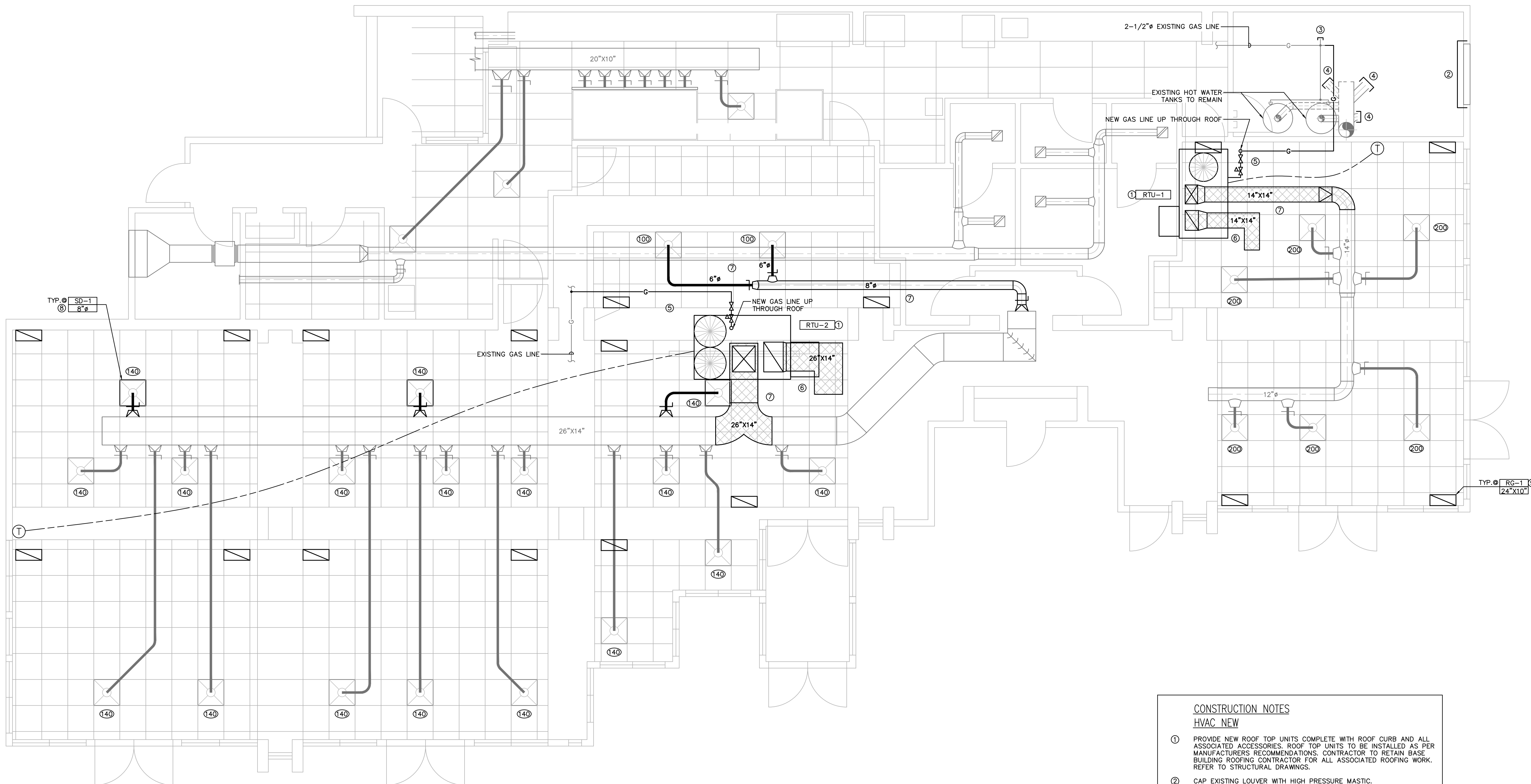
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Title

M-3

Page 40 of 59



HVAC NEW

- ① PROVIDE NEW ROOF TOP UNITS COMPLETE WITH ROOF CURB AND ALL ASSOCIATED ACCESSORIES. ROOF TOP UNITS TO BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS. CONTRACTOR TO RETAIN BASE BUILDING ROOFING CONTRACTOR FOR ALL ASSOCIATED ROOFING WORK. REFER TO STRUCTURAL DRAWINGS.
- ② CAP EXISTING LOUVER WITH HIGH PRESSURE MASTIC.
- ③ CAP EXISTING GAS LINES AS SHOWN.
- ④ CAP REMOVED DUCTWORK WITH HIGH PRESSURE MASTIC.
- ⑤ PROVIDE NEW GAS LINE AS SHOWN COMPLETE WITH NEW ISOLATION VALVES AND PRVS.
- ⑥ PROVIDE NEW ACOUSTICALLY LINED RETURN ELBOWS AS SHOWN
- ⑦ PROVIDE NEW DUCTWORK COMPLETE WITH DUCT LINER AS SHOWN.
- ⑧ PROVIDE NEW SUPPLY DIFFUSERS COMPLETE WITH BRANCH DUCTWORK AND DAMPERS AS SHOWN.
- ⑨ PROVIDE NEW RETURN GRILLES AS SHOWN.
- ⑩ ALLOW FOR BALANCING OF DIFFUSERS AS SHOWN.

TYPE

MECHANICAL SPECIFICATION

1. GENERAL
- 1.1. INTENT
- 1.1.1. THE INTENT OF THIS SPECIFICATION AND THE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL MECHANICAL SYSTEM IN COMPLETE ACCORD WITH APPLICABLE CODES. THE MECHANICAL CONTRACTOR SHALL MAKE PROVISIONS FOR LABOUR, MATERIAL, AND EQUIPMENT NECESSARY TO COMPLETE THE MECHANICAL WORK.
- 1.1.2. THE WORD "PROVIDE" SHALL MEAN "SUPPLY AND INSTALL" THE PRODUCTS AND SERVICES SPECIFIED. "AS INDICATED" MEANS THAT THE ITEM(S) SPECIFIED ARE SHOWN ON THE DRAWINGS.
- 1.1.3. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER AND WHAT IS CALLED FOR IN ONE IS BINDING AS IF CALLED FOR IN BOTH. SHOULD ANY DISCREPANCY APPEAR BETWEEN DRAWINGS AND SPECIFICATIONS WHICH LEAVES DOUBT AS TO THE TRUE INTENT AND MEANING, OBTAIN A RULING FROM THE ENGINEER TEN (10) DAYS BEFORE SUBMITTING TENDER. FAILING THIS, ALLOW FOR MOST EXPENSIVE ALTERNATIVE.
- 1.1.4. CONTRACT DOCUMENTS ARE DIAGRAMMATIC ONLY. THEY ARE TO ESTABLISH SCOPE, MATERIAL AND QUALITY. THEY ARE NOT DETAILED INSTALLATION DRAWINGS. MINOR DETAILS USUALLY NOT SHOWN OR SPECIFIED AND ANY INCIDENTAL ACCESSORIES REQUIRED FOR PROPER INSTALLATION OF THE SYSTEM ARE TO BE INCLUDED IN THE WORK.
- 1.1.5. CONTRACTOR IS TO ENSURE THAT ALL INTENDED EQUIPMENT WILL FIT WITHIN GIVEN SPACES. MAKE REFERENCE TO THE ELECTRICAL, MECHANICAL, ARCHITECTURAL AND STRUCTURAL DRAWINGS, WHEN SETTING OUT WORK AND BEFORE ORDERING EQUIPMENT.
- 1.1.6. THE CONTRACTOR SHALL VISIT THE SITE BEFORE TENDERING, EXAMINE ALL LOCAL AND EXISTING CONDITIONS ON WHICH THE WORK IS DEPENDENT. NO CONSIDERATION WILL BE GRANTED FOR ANY MISUNDERSTANDING, OF WORK TO BE DONE, RESULTING FROM FAILURE TO VISIT THE SITE.
- 1.2. CODES, REGULATIONS AND STANDARDS
- 1.2.1. ALL WORK SHALL CONFORM TO CURRENT EDITION OF NATIONAL, PROVINCIAL AND MUNICIPAL CODES, STANDARDS AND OTHER LEGAL REGULATIONS AND BYLAWS APPLICABLE TO THE WORK AND WILL MEET THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
- 1.3. RESPONSIBILITIES
- 1.3.1. ASSUME RESPONSIBILITY FOR LAYOUT OF WORK; AND FOR ANY DAMAGE CAUSED TO THE OWNER OR OTHER TENANTS BY IMPROPER EXECUTION OF WORK.
- 1.3.2. PROTECT ALL NEW AND EXISTING WORK FROM DAMAGE.
- 1.3.3. TAKE RESPONSIBILITY FOR CONDITION OF MATERIALS AND EQUIPMENT SUPPLIED AND PROTECT UNTIL WORK IS COMPLETED AND ACCEPTED. COORDINATE DELIVERIES WITH THE GENERAL CONTRACTOR.
- 1.3.4. COORDINATE WORK WITH ALL TRADES AND MAKE CHANGES TO FACILITATE A SATISFACTORY INSTALLATION. MAKE NO DEVIATIONS TO THE DESIGN INTENT INVOLVING EXTRA COST TO THE OWNER, WITHOUT THE CONSULTANT'S WRITTEN APPROVAL.
- 1.4. CERTIFICATES
- 1.4.1. GIVE NOTICES, OBTAIN ALL REQUIRED PERMITS AND APPROVALS, AND PAY ALL FEES SO WORK SPECIFIED MAY BE CARRIED OUT. FURNISH CERTIFICATES IF REQUESTED, AS EVIDENCE THAT WORK CONFORMS WITH LAWS AND REGULATIONS OF THE AUTHORITIES HAVING JURISDICTION.
- 1.5. STANDARD OF MATERIALS AND WORKMANSHIP
- 1.5.1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH WELL ESTABLISHED PRACTICE AND STANDARDS ACCEPTED AND RECOGNIZED BY THE CONSULTANT AND THE TRADE.
- 1.5.2. THE CONSULTANT SHALL HAVE THE RIGHT TO REJECT ANY ITEM OF WORK THAT DOES NOT CONFORM TO THE CONTRACT DOCUMENTS AND ACCEPTED STANDARDS OF PERFORMANCE, QUIETNESS OF OPERATION, FINISH AND APPEARANCE.
- 1.5.3. EMPLOY ONLY TRADESMEN HOLDING VALID PROVINCIAL TRADE QUALIFICATION CERTIFICATES. TRADESMEN SHALL PERFORM ONLY WORK THAT THEIR CERTIFICATE PERMITS.
- 1.5.4. MAKE AND QUALITY OF MATERIALS USED ARE SUBJECT TO APPROVAL BY THE ENGINEER. REMOVE UNACCEPTABLE MATERIALS AND INSTALL SUITABLE MATERIALS IN THEIR PLACE.
- 1.5.5. MATERIALS SHALL BE NEW AND OF UNIFORM PATTERN THROUGHOUT, UNLESS NOTED OTHERWISE.
- 1.6. CORE DRILLING AND CUTTING
- 1.6.1. ALL WORK SHALL BE CO-COORDINATED WITH OTHER TRADES ESPECIALLY THAT RELATED TO CUTTING AND PATCHING OF REQUIRED OPENINGS; AND LOCATIONS AND INSTALLATION OF SLEEVES, INSERTS, SUPPORT, AND ACCESS DOORS.
- 1.6.2. ALL OPENINGS THROUGH EXISTING CONCRETE STRUCTURE SHALL BE CORE DRILLED. LAY OUT REQUIREMENTS FOR REVIEW AND APPROVAL BY THE OWNER AND STRUCTURAL ENGINEER PRIOR TO CORING.
- 1.6.3. PROVIDE X-RAY OF ALL REQUIRED PENETRATIONS OF THE FLOOR AND WALLS. X-RAY USE FOR LOCATING IN FLOOR REBAR AND CONDUIT TO BE DONE AFTER NORMAL WORKING HOURS. TAKE NECESSARY PRECAUTIONS TO PROTECT COMPUTER EQUIPMENT WHEN X-RAYING FLOORS. CO-ORDINATE WITH OWNER. REPAIRS TO EXISTING SERVICES DAMAGED AS A RESULT OF CORE DRILLING IS INCLUDED IN THIS SECTION OF THE WORK.
- 1.7. ALTERNATIVE MATERIALS AND EQUIPMENT
- 1.7.1. CONTRACT PRICE SHALL BE BASED ON MATERIALS AND EQUIPMENT SPECIFIED. APPROVAL BY ENGINEER IS REQUIRED FOR ANY SUBSTITUTION OF MATERIALS OR EQUIPMENT TO THAT SPECIFIED DOES NOT RELIEVE THE MECHANICAL TRADE OF ANY RESPONSIBILITY. MATERIAL/PRODUCTS CONSIDERED TO SATISFY THE SPECIFICATION, BUT OF A MANUFACTURER OTHER THAN THOSE NAMED, MAY BE SUBMITTED TO THE CONSULTANT FOR CONSIDERATION NOT LATER THAN FIVE (5) WORKING DAYS PRIOR TO CLOSING OF TENDER. REVISIONS REQUIRED TO ADAPT ACCEPTED EQUIVALS AND ALTERNATIVES SHALL BE INCLUDED IN THE CONTRACT PRICE. NO INCREASE IN THE CONTRACT PRICE WILL BE CONSIDERED TO ACCOMMODATE EQUIPMENT OTHER THAN THAT SPECIFIED.
- 1.7.3. CERTAIN ITEMS OF EQUIPMENT AND ITEMS OF WORK (SUCH AS WATER TREATMENT, BALANCING) MAY BE APPROVED EQUAL, DUE TO THE NEED TO HAVE A CONSISTENT TYPE OR SOURCE OF MAINTENANCE. REFER TO SPECIFIC CLAUSES IN THIS SPECIFICATION.
- 1.8. COMPLIANCE WITH ENERGY BY-LAW
- 1.8.1. ALL EQUIPMENT INSTALLED ON THIS PROJECT SHALL COMPLY WITH THE 1992 PERFORMANCE RECOMMENDATIONS OF ASHRAE STANDARD 90.1 (LATEST EDITION) AS TO COMPLY WITH THE CITY OF SURREY BUILDING BY-LAW ENERGY UTILIZATION REQUIREMENTS.
- 1.9. GUARANTEE
- 1.9.1. PROVIDE THE OWNER WITH A WRITTEN GUARANTEE THAT THE EQUIPMENT INSTALLED AND THE WORK PERFORMED SHALL REMAIN IN A SERVICEABLE CONDITION FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER. THE WARRANTY SHALL COVER MATERIAL AS WELL AS LABOR.
- 1.10. SHOP DRAWINGS/PRODUCT DATA
- 1.10.1. SUBMIT THREE (3) SETS OF DETAILED EQUIPMENT AND PLUMBING FIXTURE SHOP DRAWINGS FOR REVIEW PRIOR TO ORDERING. DO NOT ORDER EQUIPMENT OR MATERIALS UNTIL ENGINEER HAS REVIEWED SHOP DRAWINGS.
- 1.10.2. SHOP DRAWINGS SHALL BE SPECIFIC AND REFLECT ALL SPECIFIED AND SCHEDULED REQUIREMENTS.
- 1.11. OPERATION AND MAINTENANCE MANUALS
- 1.11.1. PROVIDE FOUR (4) COPIES OF MANUALS PREPARED BY QUALIFIED AND EXPERIENCED PERSONNEL FOR USE BY THE OWNER. MANUALS FORM PART OF THE CONTRACT AND MUST BE DELIVERED TO THE ENGINEER BEFORE WORK WILL BE CONSIDERED COMPLETE. EACH MANUAL SHALL PROVIDE THE FOLLOWING:
- 1.11.1.1. LAYMAN'S DESCRIPTION OF ALL MECHANICAL SYSTEMS INCLUDING OPERATING, MAINTENANCE AND LUBRICATION INSTRUCTIONS.
- 1.11.1.2. CERTIFICATION OF ALL EQUIPMENT WHERE REQUIRED BY LOCAL CODES AND AUTHORITIES.
- 1.11.1.3. SHOP DRAWINGS AND MAINTENANCE BULLETINS.
- 1.11.1.4. LIST ADDRESSES AND TELEPHONE NUMBERS OF ALL EQUIPMENT SUPPLIERS AND CONTRACTORS.
- 1.11.1.5. PERFORMANCE DETAILS FOR ALL EQUIPMENT INCLUDING CURVES FOR FANS AND PUMPS WITH ACTUAL OPERATING POINTS NOTED.
- 1.12. OWNER'S STOCK
- 1.12.1. SPECIFIED ITEMS OF MECHANICAL EQUIPMENT MAY BE AVAILABLE FROM THE OWNER'S STOCK. PRIOR TO SUBMITTING THE TENDER PRICE, REVIEW THESE ITEMS TO ENSURE THEIR AVAILABILITY AND USABILITY FOR THE PROJECT. THE TENDER PRICE SHALL INCLUDE THE COST OF SERVICING, MOVING IN PLACE, AND INSTALLING TO MAKE THESE ITEMS COMPLETELY OPERATIONAL, OR PROVISION OF NEW ONES IF REQUIRED.
- 1.12.2. WHERE EQUIPMENT IS REMOVED AND NOT RE-USED IT SHALL BE HANDED OVER TO THE OWNER'S REPRESENTATIVE, OR DISPOSED OF IF DIRECTED BY THE OWNER.
- 1.13. RECORD DRAWINGS
- 1.13.1. MAINTAIN ONE SET OF CONTRACT DRAWING WHITE PRINTS, INCLUDING ALL SUPPLEMENTARY AND REVISION DRAWINGS ON SITE, SOLELY FOR THE PURPOSE OF RECORDING, IN RED, ANY CHANGE AND / OR DEVIATION FROM THE CONTRACT DRAWINGS AS IT OCCURS. INCLUDE ELEVATIONS AND DETAILED LOCATIONS OF BURIED SERVICES.
- 1.12.1.1. A SET OF CAD FILES MAY BE PURCHASED FROM THE CONSULTANT. ALLOW A SINGLE PER PROJECT COST OF \$450.00 FOR ALL MECHANICAL PROJECT CAD FILES. OBTAIN THE SERVICES OF AN APPROVED CAD DRAFTSPERSON TO TRANSFER ALL CHANGES TO AMEND THE CAD FILES IN THE LATEST VERSION OF AUTOCAD. THE CONSULTANT MAY BE RETAINED TO DRAFT MARKUPS INTO CAD AT A COST NOT TO EXCEED \$600.00. ALLOW FOR DRAFTSPERSON OR CONSULTANT DRAFTING COST.
- 1.12.2. INCLUDE ALL DETAILS FROM REVISION DRAWINGS, ADDENDA, AND CHANGE ORDERS. LABEL EACH DRAWING IN THE LOWER RIGHT CORNER IN LETTERS OF AT LEAST 12MM [1/2"] HIGH AS FOLLOWS:

- 1.12.2.1. "AS BUILT DRAWINGS", CONTRACTORS NAME AND DATE.
- 1.12.3. PROVIDE ONE SET OF CHECK PRINTS FOR REVIEW BY CONSULTANT.
- 1.12.4. UPON ACCEPTANCE BY THE CONSULTANT, PROVIDE COMPUTER CAD FILES.
- 1.12.5. NOTE: THE CONTRACTOR WILL BE REQUIRED TO SIGN A STANDARD FLOW CONSULTING GROUP INC. / CONTRACTOR AGREEMENT ENTITLED "AUTHORIZATION TO USE CAD DRAWING FILES". THE AGREEMENT RESTRICTS THE USE OF THE CAD FILES TO THE PURPOSE OF "AS-BUILT" ONLY AND DETERMINES THE EDITING PROCEDURES.
- 1.13. COORDINATION WITH ELECTRICAL DIVISION
- 1.13.1. CONTRACTOR SHALL REVIEW ALL EQUIPMENT REQUIRING ELECTRICAL HOOK-UP WITH ELECTRICAL CONTRACTOR AND ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT. ENSURE PROPER ELECTRICAL CHARACTERISTICS ARE DETERMINED FOR ALL AFFECTED AND RELATED WORK.
- 1.14. SERVICE PENETRATIONS IN RATED FIRE SEPARATIONS
- 1.14.1. ALL PIPING, TUBING, DUCTS, WIRING, CONDUITS, ETC. PASSING THROUGH RATED FIRE SEPARATIONS SHALL BE SMOKE AND FIRE PROOFED WITH ULC APPROVED MATERIALS IN ACCORDANCE WITH CAN4--S115-M85 AND ASTM E814 STANDARDS AND WHICH MEET THE REQUIREMENTS OF THE BUILDING CODE IN EFFECT. THIS INCLUDES NEW SERVICES WHICH PASS THROUGH EXISTING RATED SEPARATIONS AND ALSO ALL EXISTING SERVICES WHICH PASS THROUGH A NEW RATED SEPARATION OR EXISTING SEPARATIONS WHOSE RATING HAS BEEN UPGRADED.
- 1.14.2. FIRE RESISTANCE RATING OF INSTALLED FIRESTOPPING ASSEMBLY SHALL NOT BE LESS THAN FIRE RESISTANCE RATING OF SURROUNDING ASSEMBLY INDICATED ON ARCHITECTURAL DRAWINGS.
- 1.14.3. ALL SMOKE AND FIRE STOPPING SHALL BE INSTALLED BY A QUALIFIED CONTRACTOR WHO SHALL SUBMIT A LETTER CERTIFYING THAT ALL WORK IS COMPLETE AND IN ACCORDANCE WITH THIS SPECIFICATION.
- 1.14.4. INSTALL FIRE STOPPING AND SMOKE SEAL MATERIAL AND COMPONENTS IN ACCORDANCE WITH ULC CERTIFICATION AND MANUFACTURER'S INSTRUCTIONS IN FORMED, SLEEVED OR CORED PENETRATIONS.
- 1.14.5. FIRESTOP MATERIALS:
- 1.14.5.1. FIRESTOPPING AND SMOKE SEAL SYSTEMS: ASBESTOS--FREE MATERIALS AND SYSTEMS CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME, SMOKE AND GASES IN COMPLIANCE WITH REQUIREMENTS OF ULC CAN4--S115-M85, OR ULJ 1479 AND ASTM 814, AND NOT TO EXCEED OPENING SIZES FOR WHICH THEY ARE INTENDED.
- 1.14.5.2. FIRE RESISTANCE RATING OF INSTALLED FIRESTOPPING ASSEMBLY SHALL BE NOT LESS THAN THE FIRE RESISTANCE RATING OF SURROUNDING FLOOR AND WALL ASSEMBLY.
- 1.14.5.3. ACCEPTABLE PRODUCTS:
- 1.14.5.3.1. DOW CORNING, FS2000 SILICONE.
- 1.14.5.3.2. HILTI FIRESTOP CS2400.
- 1.14.5.3.3. TREMCO Fyre-Sil.
- 1.15. SERVICE PENETRATIONS IN NON-RATED SEPARATIONS
- 1.15.1. ALL PIPING, TUBING, DUCTS, WIRING, CONDUITS, ETC. PASSING THROUGH NON-RATED FIRE SEPARATIONS AND NON-RATED WALLS AND FLOORS SHALL BE TIGHTLY FITTED AND SEALED ON BOTH SIDES OF THE SEPARATION WITH SILICON SEALANT TO PREVENT THE PASSAGE OF SMOKE AND/OR TRANSMISSION OF SOUND. REFER TO "PIPE SLEEVE" CLAUSE IN THIS SECTION FOR PACKING AND SEALING OF PIPE SLEEVES.
- 1.16. PIPE SLEEVES
- 1.16.1. PROVIDE PIPE SLEEVES FOR ALL PIPING PASSING THROUGH WALLS AND FLOORS. SLEEVES TO BE CONCENTRIC WITH PIPE.
- 1.16.2. PIPE SLEEVES FOR FLOORS AND INTERIOR WALLS SHALL BE MINIMUM 0.61 [24 GA] THICK GALVANIZED SHEET STEEL WITH LOCK SEAM JOINTS.
- 1.16.3. PIPE SLEEVES SHALL EXTEND 6 MM [1/4"] ABOVE FLOORS IN FINISHED AREAS.
- 1.17. ESCUTCHEONS AND PLATES
- 1.17.1. PROVIDE ON PIPES PASSING THROUGH FINISHED WALLS, PARTITIONS, FLOORS AND CEILINGS. PLATES SHALL BE STAMPED STEEL, SPLIT TYPE, CHROME PLATED, OR STAINLESS STEEL, CONCEALED HINGE COMPLETE WITH SPRINGS, SUITABLE FOR EXTERNAL DIMENSIONS OF PIPING/INSULATION. SECURE TO PIPE OR FINISHED SURFACE. FOR ALL PIPES PASSING THROUGH SUSPENDED CEILINGS AND UNINSULATED PIPING PASSING THROUGH WALLS. OUTSIDE DIAMETER SHALL COVER OPENING OR SLEEVE.
- 1.17.3. WHERE DIAMETER SLEEVE EXTENDS ABOVE FINISHED FLOOR, ESCUTCHEONS OR PLATES SHALL CLEAR SLEEVE EXTENSION. DO NOT INSTALL ESCUTCHEONS AND PLATES IN CONCEALED LOCATIONS.
2. TESTING BALANCING & COMMISSIONING
- 2.1. BALANCING
- 2.1.1. CONTRACTOR IS TO PROVIDE THE SERVICES OF AN APPROVED PROFESSIONAL TESTING & BALANCING AGENCY.
- 2.1.2. PROVIDE A BALANCE REPORT OF ALL AIR & WATER BALANCE POINTS AND PERFORMANCE TESTING & BALANCING OF ALL EQUIPMENT AS PER THE AABC.
- 2.1.3. PROVIDE ALL REQUIRED SHEAVE, BELT AND IMPELLER CHANGES TO ACHIEVE THE REQUIRED FAN AND PUMP FLOW RATES.
- 2.1.4. MEASURE AND BALANCE THE FOLLOWING (WHERE APPLICABLE):
- 2.1.4.1. SUPPLY, EXHAUST AND RETURN FAN VOLUMES AND SPEEDS.
- 2.1.4.2. AIRFLOW AT EACH AIR OUTLET AND BRANCH CONNECTION.
- 2.1.4.3. MOTOR AMPERAGE DRAW ON ALL MOTORS AND COMPARE WITH MOTOR RATING.
- 2.1.4.4. WATER FLOW AT EACH BALANCE VALVE AND TERMINAL HEATING MANIFOLD.
- 2.1.4.5. BALANCE DOMESTIC WATER RE-CIRCULATION.
- 2.1.5. ADDITIONAL TESTING OF THE SYSTEM MAY BE REQUESTED BY THE CONSULTANT TO SPOT CHECK AIR AND WATER FLOW QUANTITIES. (10% OF THE SYSTEM WILL BE RE-CHECKED AT THE DISCRETION OF THE CONSULTANT) AT THE CONTRACTORS COST.
- 2.1.6. SUBMIT TWO (2) COPIES OF THE BALANCING REPORT TO THE ENGINEER WITHIN TWO (2) WEEKS AFTER SUBSTANTIAL COMPLETION. FAILURE TO SUBMIT THE REPORT WITHIN THE SPECIFIED TIME WILL RESULT IN THE WORK BEING DONE BY THE OWNER AND THE COSTS DEDUCTED FROM THE FINAL PAYMENT.
- 2.1.7. BALANCING SHALL BE PERFORMED TO THE FOLLOWING ACCURACIES:
- 2.1.7.1. AIR TERMINAL OUTLETS +/- 10%
- 2.1.7.2. AIR CENTRAL EQUIPMENT +/- 5%
- 2.1.7.3. HYDRONIC TERMINALS +/- 10%
- 2.2. COOPERATE WITH THE BALANCING AGENCY AS FOLLOWS:
- 2.2.1. MAKE CORRECTIONS AS REQUIRED BY THE BALANCING AGENCY.
- 2.2.2. ALLOW BALANCING AGENCY FREE ACCESS TO SITE DURING CONSTRUCTION PHASE. INFORM BALANCING AGENCY OF ANY MAJOR CHANGES MADE TO SYSTEMS DURING CONSTRUCTION AND PROVIDE A COMPLETE SET OF RECORD DRAWINGS FOR THEIR USE.
- 2.2.3. OPERATE AUTOMATIC CONTROL SYSTEM AND VERIFY SETPOINTS DURING BALANCING.
- 2.2.4. PROVIDE BALANCING AGENCY A COMPLETE SET OF MECHANICAL DRAWINGS AND SPECIFICATIONS.
- 2.3. BALANCING VALVES AND DAMPERS
- 2.3.1. PROVIDE AND INSTALL BALANCING VALVES, DAMPERS AND OTHER MATERIALS REQUESTED FROM THE BALANCING AGENCY AND/OR NECESSARY TO PROPERLY ADJUST OR CORRECT THE SYSTEMS TO DESIGN FLOWS, WITHOUT ADDITIONAL COST TO THE OWNER.
- 2.4. COMMISSIONING AND DEMONSTRATION
- 2.4.1. BE RESPONSIBLE FOR THE PERFORMANCE AND COMMISSIONING OF ALL EQUIPMENT SUPPLIED AND RE-USED UNDER THE HVAC SECTIONS OF DIVISION 15.
- 2.4.2. AT THE CONCLUSION OF COMMISSIONING, DEMONSTRATE THE OPERATION OF THE SYSTEMS TO THE CONSULTANT AND THEN TO THE OWNER'S OPERATING STAFF.
- 2.4.3. AT THE COMPLETION OF THE COMMISSIONING, TESTING, BALANCING AND DEMONSTRATION SUBMIT TO THE CONSULTANT A LETTER CERTIFYING THAT ALL WORK SPECIFIED UNDER THIS CONTRACT IS COMPLETE, CLEAN AND OPERATIONAL IN ACCORDANCE WITH THE SPECIFICATION AND DRAWINGS.
- 2.5. DEFICIENCY HOLDBACKS AND DEFICIENCY INSPECTIONS
- 2.5.1. WORK UNDER THIS DIVISION WHICH IS STILL OUTSTANDING WHEN SUBSTANTIAL PERFORMANCE IS CERTIFIED WILL BE CONSIDERED DEFICIENT AND A SUM EQUAL TO AT LEAST TWICE THE ESTIMATED COST OF COMPLETING THAT WORK WILL BE HELD BACK.
- 2.5.2. IT IS EXPECTED THAT OUTSTANDING WORK WILL BE COMPLETED IN AN EXPEDITIOUS MANNER AND THE ENTIRE HOLDBACK SUM WILL BE RETAINED UNTIL THE REQUIREMENTS FOR TOTAL PERFORMANCE OF DIVISION 15 WORK HAVE BEEN MET AND VERIFIED.
3. SEISMIC RESTRAINTS
- 3.1. SCOPE
- 3.1.1. PROVIDE SEISMIC RESTRAINTS ON PIPING, DUCTS AND EQUIPMENT. RESTRAINTS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SEISMIC RESTRAINT DESIGN MANUAL, MECHANICAL SYSTEMS PRODUCED BY SMACTA (SEISMIC HAZARD LEVEL B) AND THE ASHRAE HANDBOOK APPLICATIONS CHAPTER 49 SEISMIC RESTRAINT DESIGN.
- 3.2. EQUIPMENT - SEISMIC RESTRAIN
- 3.2.1. PROVIDE SEISMIC RESTRAINTS IN ACCORDANCE WITH DETAILS IN SMACTA GUIDELINES OR ALTERNATIVELY SLACK CABLES MAY BE USED. ORIENT RESTRAINT CABLES AT APPROXIMATELY 90° TO EACH OTHER IN PLANE, AND TIE BACK TO THE CEILING SLAB AT AN ANGLE NOT EXCEEDING 45° TO THE SLAB.
4. VIBRATION ISOLATION
- 4.1. GENERAL

- 4.1.1. PROVIDE VIBRATION ISOLATION ON ALL MOTOR DRIVEN EQUIPMENT WITH MOTORS OF ½ HP AND GREATER
- POWER OUTPUT (AS INDICATED ON THE MOTOR NAMEPLATE) AND ON PIPING AND DUCTWORK, AS SPECIFIED HEREIN. FOR EQUIPMENT LESS THAN ½ HP, PROVIDE NEOPRENE GROMMETS AT THE SUPPORT POINTS.
- 5.THERMAL AND ACOUSTIC INSULATION
- 5.1.GENERAL
- 5.1.1. AS APPLICABLE, USE THE LATEST EDITION OF THE "BC INSULATION CONTRACTORS ASSOCIATION (BOICA) STANDARDS MANUAL" AS A REFERENCE STANDARD IF SUFFICIENT DETAIL/INFORMATION IS NOT SPECIFIED HEREIN.
- 5.1.1.1. FLAME SPREAD RATINGS AND SMOKE DEVELOPED CLASSIFICATIONS SHALL BE AS REQUIRED BY THE 2015 NATIONAL BUILDING CODE. GENERALLY THE FLAME SPREAD RATING THROUGHOUT THE MATERIAL SHALL NOT EXCEED 25 AND THE SMOKE DEVELOPED CLASSIFICATION SHALL NOT EXCEED 50.
- 5.2. PREFORMED PIPE COVERING
- 5.2.1. GLASS FIBRE PREFORMED PIPE INSULATION:
- 5.2.1.1. GLASS FIBRE PREFORMED PIPE INSULATION (TESTED ASTM C-411-61) COMPLETE WITH INTEGRAL REINFORCED VINYL FOIL LAMINATED VAPOUR BARRIER JACKET (THERMAL CONDUCTIVITY AT 240C = 0.040 W/M/DEG.C.)
- 5.2.2. ACCEPTABLE PRODUCTS: KNAUF, ASI, FIBREGLAS ASI, MANVILLE MICRO-LOOK AP.
- 5.3. ACCESSORIES
- 5.3.1. FIRESTOP MATERIALS:
- 5.3.1.1. FIRESTOPPING AND SMOKE SEAL SYSTEMS: ASBESTOS--FREE MATERIALS AND SYSTEMS CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME, SMOKE AND GASES IN COMPLIANCE WITH REQUIREMENTS OF ULC CAN4--S115-M85, OR ULJ 1479 AND ASTM 814, AND NOT TO EXCEED OPENING SIZES FOR WHICH THEY ARE INTENDED.
- 5.3.1.2. FIRE RESISTANCE RATING OF INSTALLED FIRESTOPPING ASSEMBLY SHALL BE NOT LESS THAN THE FIRE RESISTANCE RATING OF SURROUNDING FLOOR AND WALL ASSEMBLY.
- 5.3.1.3. ACCEPTABLE PRODUCTS: DOW CORNING FS2000 SILICONE, HILTI FIRESTOP CS2400, TREMCO Fyre-Sil, 3M CP25WB.
- 5.3.2. ADHESIVES:
- 5.3.2.1. FLEXIBLE ELASTOMERIC AND FLEXIBLE CLOSED CELL INSULATION ADHESIVE: ARMSTRONG 620, THERMA--CEL 1590, RUBATEX--373, ZIPCOAT 8A.
- 5.3.3. COATINGS:
- 5.3.3.1. FLEXIBLE ELASTOMERIC AND FLEXIBLE CLOSED CELL INSULATION FINISH COATING: ARMSTRONG, BAKELITE 120-13, RUBATEX, ZIPCOAT.
- 5.4. SCOPE OF PIPING INSULATION
- 5.4.1. HEATING WATER PIPING, DOMESTIC HOT AND COLD WATER PIPING, FITTINGS AND VALVES:
- 5.4.1.1. INSULATE AND VAPOUR SEAL THE FOLLOWING FITTINGS:
- 5.4.1.1.1. ELBOWS, TEES, REDUCERS.
- 5.4.1.1.2. VALVE BODIES AND BONNETS) EXCEPT CHECK VALVE COVERS.
- 5.4.1.1.3. STRAINERS.
- 5.4.1.1.4. FLANGES.
- 5.4.1.1.5. UNIONS.
6. PIPING
- 6.1. STEEL PIPE: TO ASTM A53 GRADE B AS FOLLOWS:
- 6.1.1. TO NPS 10, SCHEDULE 40.
- 6.1.2. FOR THE FOLLOWING SYSTEMS:
- 6.1.2.1. HOT WATER HEATING
- 6.1.2.2. RELIEF VALVE VENTS
- 6.2. COPPER PIPE: TO ASTM B88--86, TYPE K, OR L HARD DRAWN COPPER TUBING.
- 6.2.1. TYPE L HARD DRAWN DOMESTIC HOT AND COLD WATER.
- 6.2.1.2. PRESSURE DRAINS (TO NPS 2).
- 6.3. PIPE JOINTS - STEEL PIPING
- 6.4. NPS 2 AND UNDER: SCREWED FITTINGS, EXCEPT WHERE OTHERWISE NOTED, WITH TEFLON TAPE OR PULVERIZED LEAD PASTE.
- 6.5. PIPE FITTINGS, SCREWED, FLANGED OR WELDED:
- 6.5.1. CAST IRON SCREWED FITTINGS: CLASS 125 TO ANSI B16.3.
- 6.5.2. UNIONS, MALLEABLE IRON GROUND JOINT TYPE: CLASS 150 TO ANSI B16.3.
- 6.6. GATE VALVES NPS 2 AND UNDER, SOLDERED:
- 6.6.1. BRONZE BODY, RISING STEM, SOLID WEDGE DISC, UNION OR SCREWED BONNET.
- 6.6.2. ACCEPTABLE PRODUCTS: CLASS 125 [860 kPa] - CRANE 428, GRINNELL 3010, JENKINS 810, KITZ 24, NEWMAN HATTERSLEY 607, NIBCO T-111, TOYO 293.
- 6.7. GATE VALVES NPS 2 AND UNDER, SOLDERED:
- 6.7.1. BRONZE BODY, RISING STEM, SOLID WEDGE DISC, SCREWED BONNET.
- 6.7.2. ACCEPTABLE PRODUCTS: CLASS 200 W.O.G. [1380 kPa] - CRANE 1334, GRINNELL 3080SJ, JENKINS 813, KITZ 44, NEWMAN HATTERSLEY 607C, NIBCO S-134, TOYO 299.
- 6.8. BALANCE FITTINGS (SCREWED) - NPS 1 1/2 AND UNDER:
- 6.8.1. BRONZE BODY AND BRONZE TRIM, RISING STEM, RENEWABLE COMPOSITION DISC, GLOBE TYPE WITH MEMORY STOP, LOCKSHIELD, MALE UNION CONNECTION, ANGLE AND STRAIGHT TYPE.
- 6.9. GLOBE VALVES
- 6.9.2. ACCEPTABLE PRODUCTS: CLASS 100 [690 kPa] - DAHL 13000--M SERIES, TOYO 250 OR 251.
- 6.9.1. NPS 2 AND UNDER, SCREWED:
- 6.9.1.1. BRONZE BODY, RISING STEM, SOLID WEDGE DISC, UNION OR SCREWED BONNET.
- 6.9.1.2. ACCEPTABLE PRODUCTS: CLASS 125 [860 kPa] - CRANE 428, GRINNELL 3010, JENKINS 810, KITZ 24, NEWMAN HATTERSLEY 607, NIBCO S-134, TOYO 293.
- 6.9.2. NPS 2 AND UNDER, SOLDERED:
- 6.9.2.1. BRONZE BODY, RISING STEM, SOLID WEDGE DISC, SCREWED BONNET.
- 6.9.2.2. ACCEPTABLE PRODUCTS: CLASS 200 W.O.G. [1380 kPa] - CRANE 1334, GRINNELL 3080SJ, JENKINS 813, KITZ 44, NEWMAN HATTERSLEY 607C, NIBCO S-134, TOYO 299.
- 6.10. HANGER SPACING
- 6.10.1. SPACING AND MIDDLE ATTACHMENT (ROD) DIAMETER AS SPECIFIED IN PARAGRAPHS BELOW OR AS IN TABLE BELOW. HOWEVER IS MORE STRINGENT THAN THE FOLLOWING.
- 6.10.1.1. PLUMBING PIPING: MOST STRINGENT REQUIREMENTS OF BC PLUMBING CODE, PROVINCIAL CODE, OR AUTHORITY HAVING JURISDICTION.
- 6.10.1.2. FIRE PROTECTION: TO APPLICABLE FIRE CODE; TOGGLE HANGERS ARE UNACCEPTABLE.
- 6.10.1.3. FOR GAS PIPING REFER TO GAS CODE CAN/COA-8149.1.
- 6.10.1.4. FLEXIBLE JOINT ROLL GROOVE PIPE: IN ACCORDANCE WITH TABLE BELOW, BUT NOT LESS THAN ONE HANGER AT JOINTS.
- 6.10.1.5. WITHIN 300 MM [12"] OF EACH HORIZONTAL ELBOW.
- 6.10.2. MAXIMUM HANGER SPACING TABLE.

| PIPE SIZE | ROD DIAMETER | MAXIMUM SPACING | MAXIMUM SPACING |
|-------------|--------------|-----------------|--------------------|
| | STEEL PIPE | COPPER PIPE | NPS MM [IN] M [FT] |
| ½ | 10 [3/8] | 1.8 [6] | 1.5 [5] |
| ¾ | 10 [3/8] | 1.8 [6] | 1.5 [5] |
| 1 | 10 [3/8] | 3.0 [10] | 1.8 [6] |
| 1 ¼ | 10 [3/8] | 3.0 [10] | 1.8 [6] |
| 2 | 10 [3/8] | 3.0 [10] | 3.0 [10] |
| 2 ½ , 3 , 4 | 12 [1/2] | 3.0 [10] | 3.0 [10] |
| 5 , 6 , 8 | 16 [5/8] | 3.0 [10] | |
| 10 , 12 | 22 [7/8] | 3.0 [10] | |

7. DUCTWORK
- 7.1. GENERAL
- 7.1.1. THE CONSTRUCTION AND INSTALLATION OF DUCTWORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING REFERENCED SMACTA MANUALS AND ASHRAE HANDBOOKS.
- 7.1.0.1. SMACTA - HVAC DUCT CONSTRUCTION STANDARDS, 2005.
- 7.1.1.2. SMACTA - HVAC AIR DUCT LEAKAGE TEST MANUAL, 2012.
- 7.1.0.3. ASHRAE - HANDBOOK - EQUIPMENT VOLUME.
- 7.1.1. THE PROJECT DRAWINGS ARE DIAGRAMMATIC AND ALTHOUGH EFFORTS HAVE BEEN MADE TO PROVIDE INFORMATION REGARDING THE NUMBER OF OFFSETS AND TRANSITIONS, NOT ALL ARE NECESSARILY SHOWN. CHANGES MAY BE REQUIRED IN DUCT ROUTINGS, ELEVATION AND DUCT SHAPE TO DUCT SHAPE TO ELIMINATE INTERFERENCE WITH STRUCTURE AND OTHER SERVICES. ALL REQUIRED ADJUSTMENTS SHALL BE ESTABLISHED WHEN COORDINATING AND FIELD MEASURING THE WORK PRIOR TO FABRICATION AND MUST BE PROVIDED AS PART OF THE CONTRACT AND ALL ASSOCIATED COSTS MUST BE CONSIDERED AND INCLUDED.
- 7.2. GALVANIZED STEEL
- 7.2.1. GALVANIZED STEEL SHALL HAVE A 380 G/SQ.M. [1-1/4 OZ./SQ.FT] GALVANIZING COAT BOTH SIDES TO ASTM A525 G90.
- 7.3. DUCTWORK - ALUMINUM
- 7.3.1. THE EXHAUST DUCTWORK SHALL BE FABRICATED FROM ALUMINUM:
- 7.3.1.1. EXHAUST DUCT WORK FROMSHOWERS/BATHS, TO THE EXTENT NOTED ON THE DRAWINGS.
- 7.3.2. LOW PRESSURE ALUMINUM DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH CLAUSE 2.2 "DUCTWORK - 500 PA [2"] STATIC PRESSURE".
- 7.3.3. FOR ROUND AND RECTANGULAR ALUMINUM DUCTWORK, USE FOUR GAUGES HIGHER THAN THAT SCHEDULED IN TABLE 1-5 OR TABLE 1-14, 1-15, 1-16 OF THE SMACTA DUCT STANDARDS FOR GALVANIZED DUCTWORK.

- 7.3.4. ALUMINUM SHALL BE UTILITY GRADE.
- 7.3.5. SUPPORT ALUMINUM DUCTWORK USING ALUMINUM STRAPS, CADMIUM PLATED THREADED RODS, ALUMINUM FLAT BAR OR ALUMINUM ANGLE HANGERS. SUPPORT SHALL BE SIMILAR TO THAT SPECIFIED FOR GALVANIZED IRON DUCTWORK.
- 7.4. DUCTWORK PRESSURES
- 7.4.1. PROVIDE DUCTWORK FABRICATED FROM GALVANIZED STEEL FOR THE STATIC PRESSURE CATEGORIES LISTED BELOW.
- 7.4.1.1. 500 PA [2" W.G.] STATIC PRESSURE: ALL SUPPLY DUCTWORK DOWNSTREAM FROM FAN/ING BOXES/AIR VALVES TO TERMINAL AIR OUTLETS; ALL RETURN AIR DUCTWORK.
- 7.4.1.2. 750 PA [3" W.G.] STATIC PRESSURE: ALL SUPPLY DUCTWORK DOWNSTREAM FROM SMOKE DAMPERS (LEAVING DUCT SHAFTS OR LEAVING MECHANICAL ROOM WALL) UP TO THE UPSTREAM CONNECTIONS TO MIXING BOXES/AIR VALVES.
- 7.4.2. DUCTWORK SHALL BE CONSTRUCTED, REINFORCED, SEALED AND INSTALLED TO WITHSTAND 1 1/2 TIMES THE WORKING STATIC PRESSURE.
- 7.5. DUCTWORK CLEANING
- 7.5.1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR AND ENSURE THAT ALL DUCTWORK, INSTALLED UNDER THIS CONTRACT IS INTERNALLY CLEAN WHEN HANDED OVER TO THE OWNER.
- 7.5.2. ALL DUCTWORK SHALL BE WIPED CLEAN OF ALL OIL AND OTHER SURFACE FILMS WITH SUITABLE SOLVENT PRIOR TO INSTALLATION.
- 7.5.3. SEAL ALL OPENINGS AT THE END OF EACH DAY AND AT SUCH OTHER TIME AS SITE CONDITIONS DICTATE.
- 7.5.4. OTHER OPENINGS TO BE COVERED WITH 0.15 MM [6 MILS] THICK POLY SHEET TAPED SO AS TO BE AIR TIGHT.
- 7.5.5. WHERE CONNECTING TO EXISTING DUCTWORK, CLEAN RE-USED DUCTWORK UPSTREAM FOR SPOT CHECKS WILL BE MADE BY THE CONSULTANT DURING THE CLEANING PROCESS TO VERIFY THAT THE REQUIRED STANDARD IS BEING WHEN SUBSTANTIAL PERFORMANCE IS CLAIMED, FINAL SPOT CHECKS WILL BE MADE TO VERIFY THAT THE DUCTS ARE GENERALLY IF ANY DUCTS ARE FOUND TO BE UNCLEAN, THEN THEY SHALL BE RECLEANED.
8. DUCT ACCESSORIES
- 8.1. BALANCING DAMPERS
- 8.1.1. CONSTRUCTION IN ACCORDANCE WITH SMACTA DUCT STANDARDS - FIGS. 2-14 AND 2-15.
- 8.1.2. PROVIDE BALANCING DAMPERS AT POINTS ON LOW PRESSURE SUPPLY, RETURN AND EXHAUST SYSTEMS WHERE BRANCHES ARE TAKEN FROM LARGER DUCT AS REQUIRED FOR PROPER AIR BALANCING.
- 8.2. DUCT CONNECTORS - VIBRATION ISOLATION
- 8.2.1. PROVIDE FLEXIBLE DUCT CONNECTIONS TO PROVIDE VIBRATION ISOLATION AT ALL DUCT AND PLENUM CONNECTIONS TO FAN AND AIR HANDLING SEE FIGURE 2-19 SMACTA DUCT STANDARDS.
- 8.2.2. MINIMUM REQUIREMENTS:
- 8.2.2.1. PRE-ASSEMBLED 75 MM [3"] MINIMUM LONG FLEXIBLE CONNECTION WITH 75 MM [3"] LONG 0.62 MM [24 GA] GALVANIZED STEEL DUCT CONNECTORS ON EACH SIDE OF THE FLEXIBLE CONNECTION. FLEXIBLE CONNECTOR - FIBER GLASS FABRIC WITH ELASTOMER COATING.
- 8.2.3. STANDARD OF ACCEPTANCE: DURO DYNE "DUROLON", DYNAIR "HYPALON", VENTFABRICS "VENTLON".
9. AIR DISTRIBUTION EQUIPMENT
- 9.1. FANS - GENERAL
- 9.1.1. SUBMIT FAN SOUND POWER LEVELS WITH SHOP DRAWINGS, MEASURED TO AMCA300 AND CALCULATED TO AMCA301, OR OTHER DATA ACCEPTABLE TO THE CONSULTANT. PROVIDE TEST DATA IF REQUESTED. FANS EXCEEDING DESIGN LEVELS MAY BE REJECTED.
- 9.1.1. DESIGN IS BASED ON FAN SOUND POWER LEVELS, DISCHARGE ONLY, PREDICTED BY THE ASHRAE GUIDE/1987 SYSTEMS, PAGE 52.8.
- 9.1.2. STATICALLY AND DYNAMICALLY BALANCED, CONSTRUCTED IN CONFORMITY WITH AMCA99-83.
- 9.1.4. DYNAMICALLY BALANCE FANS TO 1.5MM/S VIBRATION AMPLITUDE, MAXIMUM MEASURED ON BEARING HOUSINGS. PROVIDE FAN SHAFTS WITH CRITICAL SPEED AT LEAST 1.5 TIMES OPERATIONAL SPEED.
- 9.1.5. RATINGS: BASED ON TESTS PERFORMED IN ACCORDANCE WITH AMCA 210--74, AND ASHRAE 51--85. UNITS SHALL BEAR AMCA CERTIFIED RATINGS/SEAL.
- 9.1.6. REFER TO DRAWINGS FOR MOTOR POSITION, ROTATION AND DISCHARGE ARRANGEMENTS.
10. CONTROLS
- 10.1. RELATED WORK
- 11.1.1. THIS SECTION OF THE SPECIFICATION FORMS PART OF THE CONTRACT DOCUMENTS AND IS TO BE READ, INTERPRETED AND COORDINATED WITH ALL OTHER PARTS.
- 10.2. GENERAL
- 10.2.1. RELOCATE EXISTING CONTROL DEVICES AS INDICATED.
- 11.2.2. WHERE EXISTING DEVICES ARE REUSED, VERIFY OPERATION AND RE-CALIBRATE AS REQUIRED.
- 10.2.3. VERIFY CORRECT OPERATION OF CONTROLLED DEVICES INCLUDING PUMPS, CONTROL VALVES, ETC. WITHIN THE SCOPE OF THE PROJECT.
- 10.2.4. REPORT ANY EXISTING CONTROL DEVICE WHICH NEED REPLACEMENT. REPLACEMENT WILL BE BY BUILDING MANAGER OR VIA CHANGE ORDER, AT THE DISCRETION OF THE OWNER, REPORT OF DEFICIENCIES SHOULD BE SUBMITTED PRIOR TO FINAL COMMISSIONING SO AS TO NOT DELAY THE SCHEDULED COMPLETION DATE.
- 10.2.5. EXISTING AND NEW CONTROLS SYSTEMS SHALL BE UTILIZED TO ACHIEVE SPECIFIED PERFORMANCE.
- 10.2.6. THE CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS AND VISIT THE SITE PRIOR TO TENDER CLOSING TO CONFIRM ALL NECESSARY ITEMS HAVE BEEN INCLUDED.
- 11.7.2. ALL THERMOSTATS TO BE PROGRAMMABLE TYPE WITH DISPLAY AND READ IN CELSIUS
- END OF SECTION

STAMP/SEAL:

Revisions

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|-----|-------------------------|------------|
| 3 | ISSUED FOR FINAL REVIEW | 2019/04/23 |
| 2 | ISSUED FOR REVIEW | 2019/04/11 |
| 1 | ISSUED FOR COORDINATION | 2019/03/26 |

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| CHECKED: | BY | |
| APPROVED: | BY | |
| Title | | |

MECHANICAL SPECIFICATIONS

Sheet

M-4

ELECTRICAL SPECIFICATION

1 SCOPE OF WORK

1. PROVIDE A COMPLETE AND OPERABLE ELECTRICAL SYSTEM. PROVIDE ALL EQUIPMENT, WIRING, DEVICES, ETC., NECESSARY TO ENABLE THE ELECTRICAL SYSTEM TO OPERATE IN THE INTENDED MANNER.

2 SITE VISIT

1. E.C. SHALL VISIT THE SITE TO REVIEW EXISTING CONDITIONS AND AMOUNT OF CONDUITS BEFORE SUBMITTING A BID. ALLOW FOR ALL EXTENSIONS AND/OR MODIFICATIONS TO SUIT THE PROPOSED LAYOUTS.

2. EXISTING DEVICES AND INSTALLATION SHOWN ON DEMOLITION PLAN IS APPROXIMATE ONLY. E.C. TO VERIFY EXACT AMOUNT ON SITE AND MAKE ALLOWANCE IN THE TENDER FOR ANY VARIATIONS.

3 MATERIAL REUSE & SALVAGE

- 1. ALL WIRING DEVICES INDICATED ARE TO BE NEW IN ACCORDANCE WITH SPECIFIED ITEMS.
- 2. COMPLETELY REMOVE ELECTRICAL WIRING INDICATED TO BE REMOVED.
- 3. REMOVE AND DISPOSE OF ALL REDUNDANT WIRING AND EQUIPMENT.
- 4. MAKE GOOD EXISTING FINISHES (WALLS, CARPET, ETC).
- 5. REMOVE ALL UNUSED MATERIAL.

4 EXISTING SERVICES

1. PROTECT ALL EXISTING SERVICES ENCOUNTERED. REMOVE, REROUTE, EXTEND AS REQUIRED TO ACCOMMODATE THE INTENDED SCOPE.

5 CODES AND STANDARDS

- 1. MINIMUM STANDARDS TO BE IN ACCORDANCE WITH CSA C22.1-2015 (ELECTRICAL CODE).
- 2. COMPLY WITH CSA ELECTRICAL BULLETINS AND LOCAL BY-LAWS.
- 3. BC BUILDING CODE 2018.
- 4. BC ELECTRICAL SAFETY CODE
- 5. ELECTRICAL INSPECTION AUTHORITY HAVING JURISDICTION
- 6. SPECIAL REGULATIONS BY SERVICE PROVIDERS AS APPLICABLE.

6 PERMITS AND FEES

1. SUBMIT TO THE ELECTRICAL INSPECTION DEPARTMENT AND ELECTRICAL SUPPLY AUTHORITY NECESSARY NUMBER OF DRAWINGS AND SPECIFICATIONS FOR EXAMINATION AND APPROVAL PRIOR TO COMMENCEMENT OF WORK.

2. PAY ASSOCIATED FEES.

7 INSPECTION

1. FURNISH A CERTIFICATE OF ACCEPTANCE FROM THE LOCAL ELECTRICAL INSPECTION DEPARTMENT ON COMPLETION OF WORK.

2. THE ELECTRICAL CONTRACTOR SHALL ATTEND FIELD REVIEW INSPECTIONS IF REQUIRED BY THE CONSULTANT

8 ALTERNATIVE MATERIAL

1. WHERE PARTICULAR MANUFACTURERS ARE SPECIFIED OBTAIN APPROVAL FROM THE CONSULTANT BEFORE BASING THE BID ON ALTERNATIVE MATERIAL.

9 EQUIPMENT AND MATERIALS

1. EQUIPMENT AND MATERIAL TO BE CSA CERTIFIED AND MANUFACTURED TO STANDARD SPECIFIED.

2. ELECTRICAL EQUIPMENT UNDER SPRINKLER TO BE c/w SPRINKLER PROOF/NEMA-3R ENCLOSURE.

10 SCHEDULE

1. CO-ORDINATE SCHEDULED AND POSSIBLE POWER SHUT DOWN WITH BUILDING MANAGER/LANDLORD.

2. ALLOW FOR OVERTIME AS REQUIRED.

3. EC TO COORDINATE PHASING WITH LANDLORD.

11 EQUIPMENT IDENTIFICATION

1. PROVIDE PLASTIC COVERED PANEL DIRECTORIES FOR NEW PANELBOARDS WITH CIRCUITS AND AREAS SERVED TYPED IN, AND MOUNT ON INSIDE OF DOOR.

2. ANY CHANGES TO ELECTRICAL PANEL SCHEDULES/DIRECTORIES MUST BE NEW RETYPED, HAND WRITTEN OR STICKERS WILL NOT BE ACCEPTED.

12 WORKMANSHIP

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH WELL ESTABLISHED PRACTICE AND STANDARDS ACCEPTED AND RECOGNIZED BY CONSULTANTS AND THE TRADE.

2. THE CONSULTANT SHALL HAVE THE RIGHT TO REJECT ANY ITEM OF WORK THAT DOES NOT CONFORM TO ACCEPTED STANDARDS OF PERFORMANCE, QUIETNESS OF OPERATION, FINISH AND APPEARANCE.

13 SUB CIRCUIT WIRING

1. SUBCIRCUIT WIRING TO BE COPPER CONDUCTOR MINIMUM SIZE #12 AWG, ENCLOSED IN EMT. BX WIRING MAY BE USED IN CONCEALED LOCATIONS WHERE METALLIC CONDUIT IS NOT PRACTICAL.

2. VOLTAGE DROP HAS NOT BEEN TAKEN INTO CONSIDERATION FOR CONDUCTOR SIZING. ELECTRICAL CONTRACTOR TO RE-SIZE CONDUCTOR IF VOLTAGE DROP EXCEEDS 3%.

14 CONDUITS, BOXES & FITTINGS

1. UNLESS OTHERWISE SPECIFIED ALL CONDUIT SHALL BE EMT. CONDUIT AND BACK BOXES TO BE IN BASE PRICE.

2. E.M.T. COUPLINGS AND CONNECTORS SHALL BE STEEL. CAST TYPE COUPLINGS AND CONNECTORS (ZINC, IRON OR ANY ALLOYS) SHALL NOT BE USED ON THIS INSTALLATION. PROVIDE PLASTIC BUSHINGS FOR ALL CONNECTORS. PROVIDE RAIN TIGHT CONNECTORS AT SURFACE EQUIPMENT (E.G. PANEL BOARDS) IN ROOMS WHICH ARE SPRINKLER FIRE PROTECTED.

15 CONDUIT INSTALLATIONS

1. INSTALL CONDUITS TO CONSERVE HEADROOM IN EXPOSED LOCATIONS AND CAUSE MINIMUM INTERFERENCE IN SPACES THROUGH WHICH THEY PASS. CONDUITS TO GENERALLY BE INSTALLED PARALLEL OR AT RIGHT ANGLES TO THE BUILDING LINES. CONCEAL CONDUITS WHEREVER PRACTICAL.

2. USE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR ALL CONNECTIONS TO MOTORS AND EQUIPMENT.

3. PULL BOXES SHALL BE INSTALLED AS REQUIRED BY THE CANADIAN ELECTRICAL CODE. BOXES SHALL BE GALVANIZED LOCATED IN INCONSPICUOUS ACCESSIBLE SPACES.

4. CONDUIT SHALL BE STRAIGHT, SMOOTH, FREE FROM RAGS AND BURRS, ETC., AND WHERE EXPOSED INSTALLED TO RUN ON THE SQUARE AND AT RIGHT ANGLES TO OR PARALLEL TO THE BUILDING LINES, ACCURATE IN LINE AND LEVEL. FIELD-CUT CONDUITS SHALL HAVE ENDS REAMED TO REMOVE CUTTING RIDGE.

5. RUNS OF CONDUIT AND CABLES, WHERE SHOWN, ARE SCHEMATIC ONLY. EXACT LAYOUT SHALL BE DETERMINED ON SITE BY CO-ORDINATION WITH OTHER TRADES TO MINIMIZE INTERFERENCE.

6. CONDUITS SHALL BE SUPPORTED AT REGULAR INTERVALS WITH CORROSION-RESISTING CLAMPS.

7. DO NOT LOCATE CONDUITS LESS THAN 75 MM PARALLEL TO STEAM OR HOT WATER LINES WITH A MINIMUM OF 25 MM AT CROSSOVERS.

8. ALL HORIZONTAL RUNS TO BE IN CONDUIT, TWO 90° BEND ALLOWED MAXIMUM IN ANY CONDUIT RUN. PROVIDE PULL BOXES ACCORDINGLY.

9. ALL HORIZONTAL/VERTICAL RUNS TO BE BONDED TO COMPLY TO CEC AND CSA-C22.1.

16 FIREPROOFING

1. WHERE CABLES OR CONDUITS PASS THROUGH FLOORS AND FIRE RATED WALLS, PACK SPACE BETWEEN WIRING AND SLEEVE FULL AND SEAL WITH CAULKING COMPOUND CONFORMING TO CGSB 19-GP-9MA.

17 LIGHT FIXTURES

1. N/A

18 FIRE ALARM

1. N/A

19 POWER/PANELS

1. CONDUCTORS TO BE COPPER RW90 XLPE, MINIMUM #12. CABLE SHALL BE SIZED AT 75°C

2. MAKE GOOD EXISTING CIRCUITS, BREAKERS/PANEL, CONDUIT AND WIRING TO ACCOMMODATE SCOPE. PANELS TO HAVE 20% SPARE CAPACITY, UPDATE EXISTING IF NECESSARY.

20 RECORD DRAWINGS AND O&M MANUAL

1. PROVIDE PROJECT RECORD DRAWINGS AND O&M MANUAL AS SPECIFIED IN DIVISION 1.

2. DURING THE CONSTRUCTION PERIOD, KEEP ON SITE A CLEAN SET OF DRAWINGS MARKED UP TO REFLECT THE "AS-BUILT" STATE, FOR EXAMINATION BY THE CONSULTANT ON A REGULAR BASIS. INCLUDE ELEVATIONS AND DETAILED LOCATIONS OF BURIED AND HIDDEN SERVICES.

3. AT THE END OF THE PROJECT OBTAIN THE SERVICES OF FLOW CONSULTING GROUP INC. TO TRANSFER ALL CHANGES TO AMEND THE CAD FILES IN AUTOCAD VERSION 2007 OR LATER VERSION. INCLUDE ALL REVISIONS AND CHANGE ORDERS.

21 SEISMIC PROTECTION

1. ALL ELECTRICAL EQUIPMENT IN CEILING SPACES e.g. CONDUITS etc. ARE TO BE SUPPORTED AND BRACED WITH STRUTS OR WIRES AS REQUIRED TO RESIST SEISMIC FORCES AND AVOID INJURY TO OCCUPANTS.

3. ALL ELECTRICAL EQUIPMENT REQUIRING SPRING MOUNTING FOR VIBRATION ISOLATION, SHALL HAVE SPRING MOUNTS WITH INTEGRAL SEISMIC RESTRAINTS DESIGNED TO WITHSTAND SEISMIC FORCES IN ACCORDANCE WITH THE LATEST CODE AND/OR BYLAW.

4. ELECTRICAL CONTRACTOR TO INCLUDE IN THIS TENDER TO RETAIN SERVICES OF A SEISMIC CONSULTANT TO APPROVE SEISMIC INSTALLATION.

5. PROVIDE A SEISMIC CERTIFICATE FOR A LICENSED SEISMIC ENGINEER. PAY ALL ASSOCIATED FEE AS REQUIRED.

22 COMMUNICATION

1. N/A

23 DEMOLITION

1. COORDINATE SALVAGE OF REMOVED ELECTRICAL EQUIPMENT WITH LANDLORD.

24 COORDINATION

1. COORDINATE EQUIPMENT INSTALLATION LOCATIONS WITH DIVISION 15.

25 WIRING DEVICES

1. OUTLET TO BE LABELED WITH LABELING MACHINE. INDICATING CIRCUIT NUMBER.

26 EXISTING

1. E.C. TO ALTER THE EXISTING CIRCUITS, CONDUIT AND WIRING TO ACCOMMODATE THE SCOPE. ALTER EXISTING CIRCUITS TO AVOID OVERLAP.

2. MAKE GOOD EXISTING ELECTRICAL DEVICES IN DRYWALL CEILING AREA. (TYPICAL).

27 CORE DRILLING

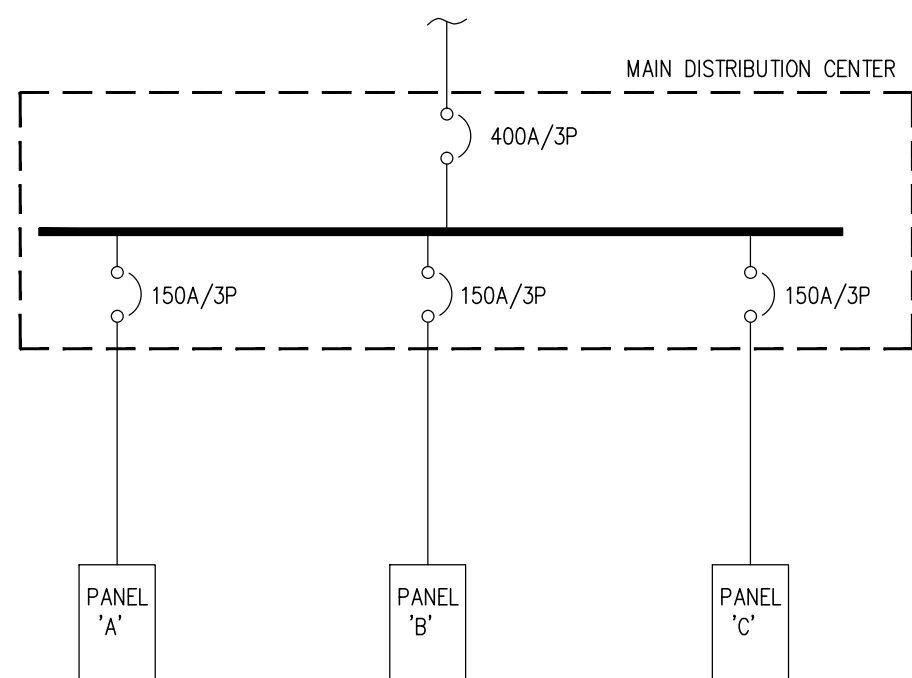
1. ALLOW FOR X-RAY AND BASE BUILDING STRUCTURAL ENGINEER'S APPROVAL PRIOR TO ANY CORE DRILLING.

MECHANICAL EQUIPMENT SCHEDULE

| TAG | DESCRIPTION | LOAD | VOLTAGE | PHASE | CIRCUIT | BREAKER SIZE | FEEDER | GENERAL |
|-------|-------------------|-----------------|---------|-------|------------|--------------|---------|-----------|
| RTU-1 | NEW ROOF TOP UNIT | 5.5kW (19.6MCA) | 208V | 3ø | B-2,4,6 | 30A,3P | 3#AWG10 | SEE NOTES |
| RTU-2 | NEW ROOF TOP UNIT | 11.5kW (40MCA) | 208V | 3ø | B-33,35,37 | 50A,3P | 3#AWG8 | SEE NOTES |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

MECHANICAL EQUIPMENT NOTES

- ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL MANUAL/MAGNETIC STARTERS C/W SINGLE PHASE PROTECTION FOR ALL MOTORS. (INSTALL IN NEAREST MECHANICAL, STORAGE OR ELECTRICAL ROOM FOR WALL MOUNTED TYPE).
- ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL DISCONNECT SWITCHES FOR ALL MOTORS.
- ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL ALL CONTROL WIRING AND EQUIPMENT AS REQUIRED. MECHANICAL CONTRACT DATA DRAWINGS AND SPECIFICATIONS MUST BE USED FOR REFERENCE. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT EQUIPMENT AMOUNT/LOCATION.
- ELECTRICAL CONTRACTOR MUST CHECK MECHANICAL DRAWINGS SPECIFICATIONS FOR EXACT AMOUNTS AND LOCATIONS FOR ALL MECHANICAL EQUIPMENT. REFER MECHANICAL DRAWINGS AND CONTRACT DOCUMENTS FOR EXACT EQUIPMENT AMOUNT/LOCATIONS/SIZES. PROVIDE ALL ELECTRICAL REQUIREMENT FOR EQUIPMENT CONNECTION.
- CHECK EXACT LOCATION OF ROUGH-INS WITH MECHANICAL PRIOR TO INSTALLATION.
- USE EXISTING MECHANICAL PANEL; MAKE GOOD PANEL. EC TO VERIFY ON SITE.
- LINE VOLTAGE OPERATED CONTROL DEVICES (VARIABLE SPEED SWITCH, TIME CLOCK, PROGRAMMABLE TIMER, REVERSE ACTING THERMOSTAT ETC.) TO BE SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR

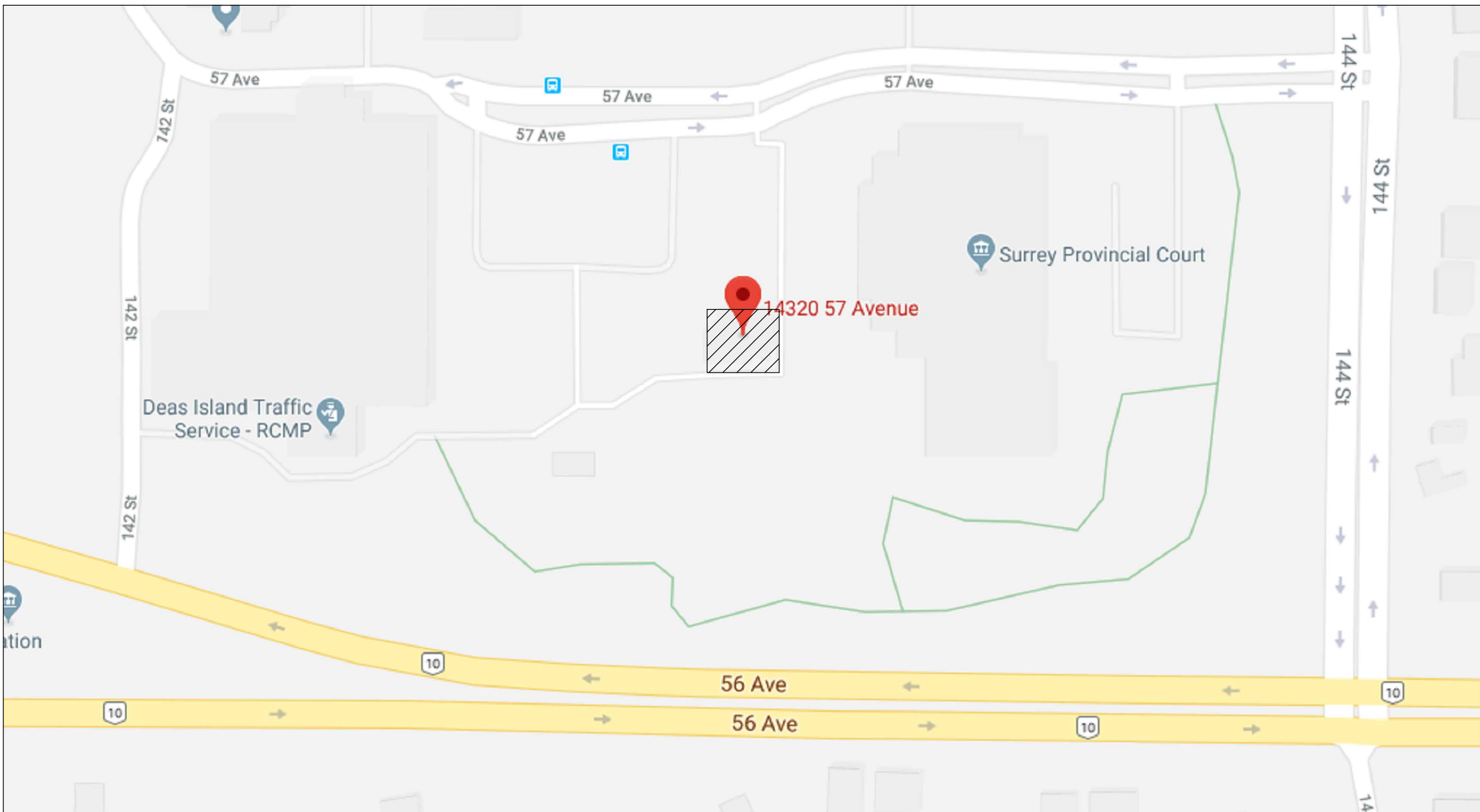


A
E1 EXISTING PARTIAL SINGLE LINE DIAGRAM
SCALE: N.T.S.

- WP 20A GROUND FAULT INTERRUPTER RECEPTACLE- 'WP' DENOTES WEATHERPROOF
- MOTOR
- DISCONNECT SWITCH
- PANELBOARD

- ETR EXISTING TO REMAIN
- RE EXISTING TO BE REMOVED
- RL EXISTING RELOCATED
- REL EXISTING TO BE RELOCATED
- N NEW

| LOAD CALCULATION OF EXISTING PANEL 'B' | | |
|--|---------------|------|
| REMOVED LOAD FROM PANEL 'B' | | |
| FURANCE#1 | 1.0 kW (est.) | |
| FURANCE#2 | 2.0 kW (est.) | |
| FURANCE#3 | 1.0 kW (est.) | |
| CU-1 | 4.0 kW | |
| CU-2 | 11.0 kW | |
| SUB TOTAL | | 19kW |
| NEW ADDED LOAD ON PANEL 'B' | | |
| RTU-1 | 5.5 kW | |
| RTU-2 | 11.5 kW | |
| SUB TOTAL | | 17kW |



B
E1 SITE PLAN
SCALE: N.T.S.

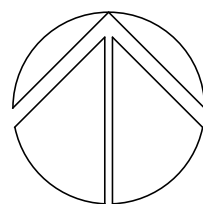
LEGEND



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Project:
OCCASIONS AT
THE POND HVAC
UPGRADES
14320 57 AVENUE
SURREY, BC



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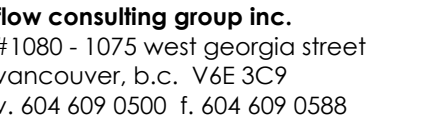
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| DRAWN: | SD | |
| CHECKED: | PL | |
| APPROVED: | OAB | |
| | | Title |

ELECTRICAL SPECS
& LEGEND

Sheet

E-1



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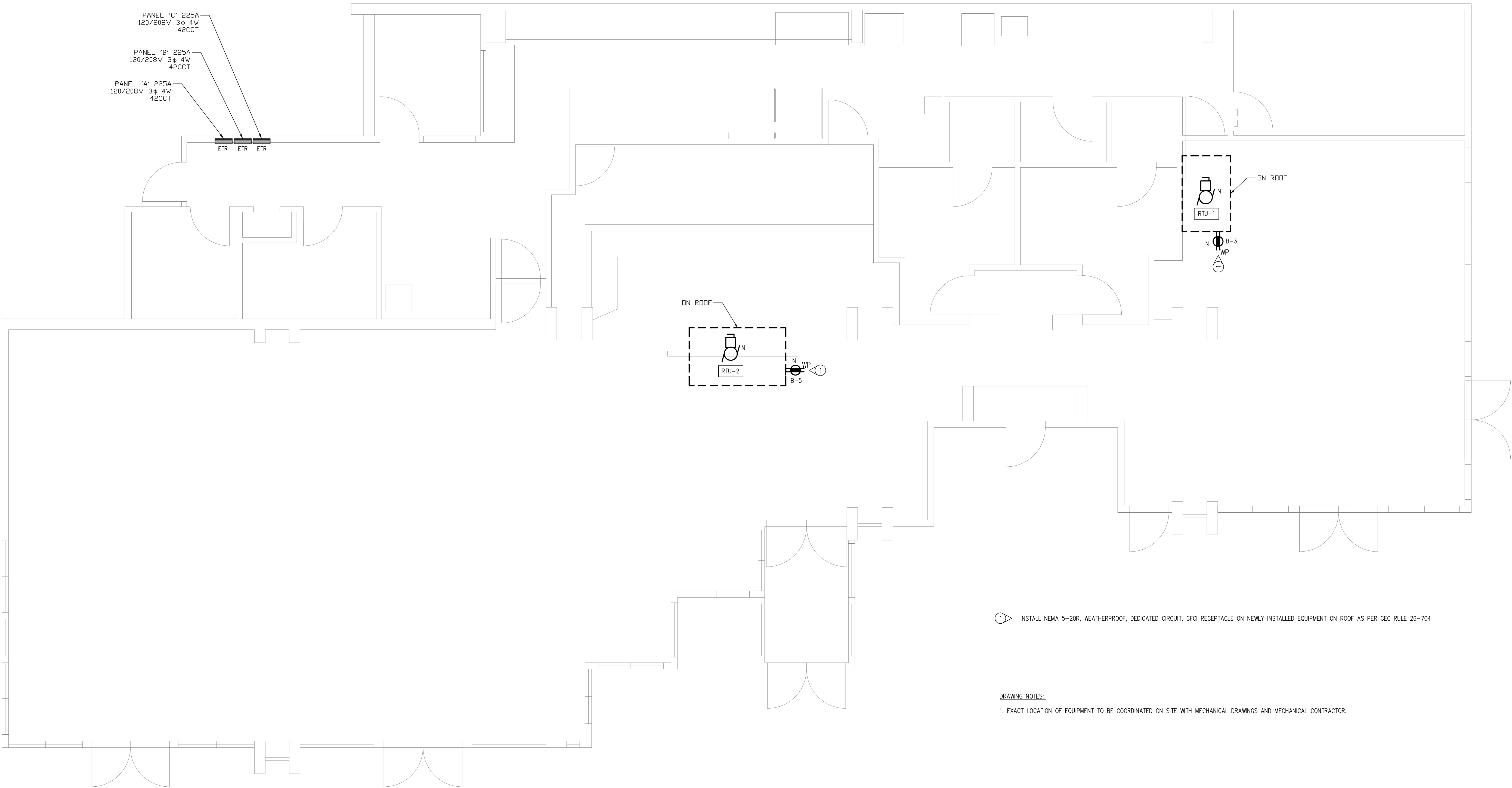
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| APPROVED: | OAB |
| | Title |

ELECTRICAL DEMO PLAN

E-2

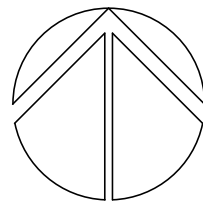
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1. DISCONNECT AND REMOVE POWER TO FURNACES c/w WIRING, CONTROLLERS, SWITCHES, JUNCTION BOXES AND CONDUITS ETC. COMPLETELY REMOVE WIRING FROM BOTH ENDS I.e. PANEL END AND TERMINATION END.



This drawing is the property of the Designer and may not be reproduced or used without the expressed consent of the Designer. All information shown on this drawings is for use on this project only and shall not be used otherwise. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Designer and obtain clarification prior to commencing work. Do not scale the drawings.

Project:
OCCASIONS AT
THE POND HVAC
UPGRADES
14320 57 AVENUE
SURREY, BC



STAMP/SEAL:

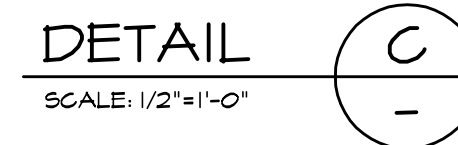
| Revisions | |
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| 1 | ISSUED FOR REVIEW | 08 APR 2019 |
| NO. | ISSUE | DATE |
| Sheet Info. | | |
| DATE: | 2019/04/08 | |
| PROJECT: | 19-049 | |
| SCALE: | 1/4"=1'-0" | |
| DRAWN: | SD | |
| CHECKED: | PL | |
| APPROVED: | OAB | |
| Title | | |

ELECTRICAL RENO
PLAN

Sheet

E-3



| | |
|---------------------|----------|
| PROJECT No.: P1901T | |
| SCALE: AS NOTED | |
| DRAWN BY: CN | |
| CHECKED BY: SST | |
| DRAWING No.: S2. | ISSUE: 1 |

**SCHEDULE B
APPENDICES 3 THROUGH 7**

Information from Schedule C of the RFQ will be inserted at the time of the award of the Contract:

- Appendix 3 Schedule of Prices
- Appendix 4 Construction Schedule
- Appendix 5 Key Personnel, Sub-Contractors, and Material Suppliers

The following forms to be included at the time of the award of the contract:

- Appendix 6 Prime Contractor Designation
- Appendix 7 Contractor Health & Safety Expectations (Responsibility of Contractor(s))



SCHEDULE C – FORM OF QUOTATION

RFQ Title: Pondside Café RTU Upgrade

RFQ No: 1220-040-2020-036

Legal Name of Contractor: _____

Contact Person and Title: _____

Business Address: _____

Business Telephone: _____

Business Fax: _____

Business E-Mail Address: _____

TO:

City Representative: Richard D. Oppelt, Manager, Procurement Services

Address: City of Surrey, Surrey City Hall

Email for PDF Files: purchasing@surrey.ca

1. If this Quotation is accepted by the City, a contract will be created as described in:
 - (a) the Contract;
 - (b) the RFQ; and
 - (c) other terms, if any, that are agreed to by the parties in writing.
2. Capitalized terms used and not defined in this Quotation will have the meanings given to them in the Contract and RFQ. Except as specifically modified by this Quotation, all terms, conditions, representations, warranties and covenants as set out in the Contract and RFQ will remain in full force and effect.
3. I/We have reviewed the sample Contract (Schedule B). If requested by the City, I/we would be prepared to enter into the sample Contract, amended by the following departures (list, if any):

Section

Requested Departure(s) / Alternative(s)

4. The City requires that the successful Contractor have the following in place **before providing the Work**:

- (a) Workers' Compensation Board coverage in good standing and further, if an "Owner Operator" is involved, personal operator protection (P.O.P.) will be provided,
Workers' Compensation Registration Number _____;
- (b) Prime Contractor qualified coordinator is Name: _____
and Contact Number: _____;
- (c) Insurance coverage for the amounts required in the proposed Contract as a minimum, naming the City as additional insured and generally in compliance with the City's sample insurance certificate form available on the City's Website at www.surrey.ca. search [Standard Certificate of Insurance](#);
- (d) City of Surrey or Intermunicipal Business License: Number _____;
- (e) If the Contractor's goods and services are subject to GST, the Contractor's GST Number is _____; and
- (f) If the Contractor is a company, the company name indicated above is registered with the Registrar of Companies in the Province of British Columbia, Canada, Incorporation Number _____.

As of the date of this Quotation, we advise that we have the ability to meet all of the above requirements **except as follows** (list, if any):

| Section | Requested Departure(s) / Alternative(s) |
|----------------|--|
|----------------|--|

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5. The Contractor acknowledges that the departures it has requested in Sections 3 and 4 of this Quotation will not form part of the Contract unless and until the City agrees to them in writing by initialing or otherwise specifically consenting in writing to be bound by any of them.

Changes and Additions to Specifications and Scope:

6. In addition to the warranties provided in the Contract, this Quotation includes the

| | |
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7. I/We have reviewed the RFQ, Schedule A – Scope of Work and Drawings. If requested by the City, I/we would be prepared to meet those requirements, amended by the following departures and additions (list, if any):

Requested Departure(s) / Alternative(s) / Addition(s)

| | |
|-------|-------|
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Fees and Payments

8. The Contractor offers to supply to the City of Surrey the Goods and Services for the prices plus applicable taxes as follows:

| | | |
|-----------------------|--|---------------|
| F.O.B. Destination | Payment Terms: A cash discount of ____% will be allowed if invoices are paid within ____ days, or the ____ day of the month following, or net 30 days, on a best effort basis. | Ship Via: |
| Item # | Item Name | Amount |
| 1. | <p>The Contractor will provide all labour, materials, equipment and plant and all other relevant services necessary for the performance of the Work as stated in the specifications and drawings, at Pondside Cafe. Pondside Café HVAC Upgrade</p> <p>Place of Work location is 14320 – 57 Ave, Surrey, B.C.</p> <p>The detailed scope of Work is as described on the Contract Drawings (Schedule B – Appendix 2-A), Special Provisions (Schedule B – Appendix 1), and Supplementary Specifications (Project) (Schedule B- Appendix 2).</p> <p>Note: All Overhead costs, general conditions and profit are to be included in the above amount(s).</p> | \$ _____ |
| 2. | Cash Allowances, if any. | |
| | | \$ |
| | | \$ |
| | | \$ |
| CURRENCY: Canadian | Subtotal: | \$ |
| | GST (5%): | \$ |
| | TOTAL QUOTATION PRICE: | \$ |

List of Optional Prices:

9. The following is a list of Optional Price(s) to the Work and forms part of this RFQ, upon the acceptance of any or all of the Optional Price(s). The Optional Prices are an addition or a deduction to the Total Quotation Price and do not include GST. DO NOT state a revised Total Quotation Price.

| Description of Optional Prices | Addition | Deduction |
|--------------------------------|-------------------|-------------------|
| OP-1. | \$ [] | \$ [] |
| OP-2. | \$ [] | \$ [] |

List of Separate Prices:

10. The following is a list of Separate Price(s) to the Work and forms part of this RFQ, upon the acceptance of any or all of the Separate Price(s). The Separate Prices are an addition or a deduction to the Total Quotation Price and do not include GST. DO NOT state a revised Total Quotation Price.

| Description of Separate Price Items | Addition | Deduction |
|---|------------------|------------------|
| SP-1. Performance Bond at 50% of total contract value: CCDC 221 (latest Preferred) | \$[] | \$[] |
| SP-2. Labour and Material Payment Bond at 50% of total contract value: CCDC 222 (latest Preferred) | \$[] | \$[] |

Force Account Labour and Equipment Rates:

11. Contractors should complete the following tables setting out the all-inclusive hourly labour rates including Overhead and profit for approved extras/credits for all applicable categories of labour (use the spaces provided and/or attach additional pages, if necessary):

Table 1 – Hourly Labour Rate Schedule For Services:

| Labour Category | Straight Time/hr (Plus GST) | Overtime Rate/hr (Plus GST) |
|---------------------|--------------------------------|--------------------------------|
| .1 Superintendent | \$ | \$ |
| .2 Foreman | \$ | \$ |
| .3 Journeyman | \$ | \$ |
| .4 Apprentice | \$ | \$ |
| .5 Skilled Labourer | \$ | \$ |
| .5 | \$ | \$ |
| .6 | \$ | \$ |

Table 2 – Hourly Equipment Rate Schedule:

| No. | Equipment Description (<i>State</i>) | Hourly Equipment Rate |
|-----|--|-----------------------|
| | | \$ |
| | | \$ |
| | | |

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Metro Vancouver's Non-Road Diesel Engine Emissions Regulation By-law No. 1161, 2012 (the Bylaw)

12. Contractors should confirm they are in compliance with By-law (if applicable)

☐ Applicable as follows ☐ Not applicable to this project

| No. | Equipment Description | Engine Tier Designation | Engine Registration Number as Issued by Metro Vancouver |
|-----|-----------------------|--|---|
| 1 | | <input type="checkbox"/> Tier 0 or <input type="checkbox"/> Tier 1 | |
| 2 | | <input type="checkbox"/> Tier 0 or <input type="checkbox"/> Tier 1 | |
| 3 | | <input type="checkbox"/> Tier 0 or <input type="checkbox"/> Tier 1 | |
| 4 | | <input type="checkbox"/> Tier 0 or <input type="checkbox"/> Tier 1 | |
| 5 | | <input type="checkbox"/> Tier 0 or <input type="checkbox"/> Tier 1 | |

Construction Schedule:

13. Contractors should provide an estimated schedule, with major item descriptions and time indicating a commitment to perform the Contract within the time specified:

- (a) Commence the Work on or before: _____; and
(b) Substantial Performance: _____.

Contractor may provide a Microsoft Project (or similar) schedule outlining the Critical Path and should include all major phases of the Work and indicate start and substantial completion dates for each (use the spaces provided and/or attach additional pages, if necessary).

| ACTIVITY | SCHEDULE | | | | | | | | | |
|----------|----------|---|---|---|---|---|---|---|---|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | | | | | | | | | | |
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Proposed Disposal Site: _____

Key Personnel & Subcontractors:

14. Contractors should provide information on the background and experience of all key personnel proposed for the performance of the Work (use the spaces provided and/or attach additional pages, if necessary):

Key Personnel

Name: _____
Experience: _____
Dates: _____
Project Name: _____
Responsibility: _____

15. Contractors should provide the following information on the background and experience of all proposed subcontractors and material suppliers for the divisions or sections of the work/or supply listed below: [Note: It is not necessary for the Contractor to list all subcontractors and material suppliers that the Contractor proposes to use – only those for the divisions or sections of work / supply listed below] (use the spaces provided and/or attach additional pages, if necessary):

| <i>Description of Work/Supply</i> | <i>Subcontractor & Material Supplier Names</i> | <i>Years of Working with Contractor</i> | <i>Telephone Number and Email</i> |
|-----------------------------------|--|---|-----------------------------------|
| | | | |
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The City reserves the right of approval for each of the subcontractors and material suppliers. The Contractor will be given the opportunity to substitute an acceptable subcontractor and material supplier, if necessary.

Experience and References:

16. Contractor's should provide information on their relevant **experience and qualifications** for the performance of the Work similar to those required by the Contract (use the spaces provided and/or attach additional pages, if necessary):

17. Contractor's **references** for work performed by your firm of a similar nature and value (name and telephone number). The City's preference is to have a minimum of three references. Previous clients of the Contractor may be contacted at the City's discretion (use the spaces provided and/or attach additional pages, if necessary)

18. I/We the undersigned duly authorized representatives of the Contractor, having received and carefully reviewed the RFQ and the Contract, submit this Quotation in response to the RFQ.

This Quotation is executed by the Contractor this _____ day of _____, 202__.

CONTRACTOR

I/We have the authority to bind the Contractor.

(Legal Name of Contractor)

(Signature of Authorized Signatory)

(Signature of Authorized Signatory)

(Print Name and Position of Authorized Signatory)

(Print Name and Position of Authorized Signatory)

ATTACHMENT 1 - CITY OF SURREY, PROJECT COMPLETION DELIVERABLES WORKSHEET

Project Name: _____

Project Address: _____

Date: _____

End of Project Walk-through: _____

End of Project Walk-through: _____

City Representative: _____

Contractor/Contractor Rep: _____

Department: _____

Company Name: _____

Contact phone number: _____

Contact phone number: _____

Fax number: _____

Fax number: _____

A. BUILDING PERMITS – CLOSED OUT

- ☐ Architectural
- ☐ Electrical
- ☐ Mechanical / Plumbing
- ☐ Structural
- ☐ Other

B. O&M MANUALS RECEIVED

**Shop Drawings to be included in O&M Manuals*

Architectural

- ☐ 1 Electronic (PDF) file
- ☐ 2 Hardcopies

Electrical

- ☐ 1 Electronic (PDF) file
- ☐ 2 Hardcopies

Mechanical

- ☐ 1 Electronic (PDF) file
- ☐ 2 Hardcopies

Other(s)

- ☐ 1 Electronic (PDF) file
- ☐ 2 Hardcopies

C. PROJECT CLOSE-OUT

- ☐ Project Summary Report
- ☐ Substantial Completions
- ☐ Deficiencies List
- ☐ Transfer of Utilities (Hydro/Teresan)
Notify City of Surrey (604-591-4804)
- ☐ Asset Inventory Forms including HVAC
- ☐ TCA Cost Summary Finance, & Warranty
Information sheets & Project summary
with graphics
- ☐ Final Occupancy Certification
- ☐ All documentation/correspondence
pertaining to the project (File Share Device)

D. FALL PROTECTION / RESTRAINT SYSTEM

- ☐ Complete
- ☐ Wall plaques displayed as required
- ☐ 1 (PDF) containing the Fall Protection Safety

System _____

Signed: _____

City Representative

Contractor Representative

Internal Representative

Fire Chief/ Representative

E. AS-BUILT DRAWING SUBMITTALS

Architectural

- ☐ 1 Set of AutoCAD As-Built DWG files
- ☐ 1 Set of PDF As-Built drawings
- ☐ 1 Set of paper construction drawings

Civil

- ☐ 1 Set of AutoCAD As-Built DWG files
- ☐ 1 Set of PDF As-Built drawings
- ☐ 1 Set of paper construction drawings

Electrical

- ☐ 1 Set of AutoCAD As-Built DWG files
- ☐ 1 Set of PDF As-Built drawings
- ☐ 1 Set of paper construction drawings

Fire Protection

- ☐ 1 Set of AutoCAD As-Built DWG files
- ☐ 1 Set of PDF As-Built drawings
- ☐ 1 Set of paper construction drawings

Landscaping

- ☐ 1 Set of AutoCAD As-Built DWG files
- ☐ 1 Set of PDF As-Built drawings
- ☐ 1 Set of paper construction drawings

Mechanical / Plumbing

- ☐ 1 Set of AutoCAD As-Built DWG files
- ☐ 1 Set of PDF As-Built drawings
- ☐ 1 Set of paper construction drawings

Structural

- ☐ 1 Set of AutoCAD As-Built DWG files
- ☐ 1 Set of PDF As-Built drawings
- ☐ 1 Set of paper construction drawings

Other: _____

- ☐ 1 Set of AutoCAD As-Built DWG files
- ☐ 1 Set of PDF As-Built drawings
- ☐ 1 Set of paper construction drawings

F. FIRE SAFETY PLAN

- ☐ Complete
- ☐ Wall plaques displayed throughout facility
- ☐ 1 Electronic (PDF) file of the fire safety plan
- ☐ 2 paper copies of the fire safety plan

ATTACHMENT 2

PRIME CONTRACTOR DESIGNATION LETTER OF UNDERSTANDING

As per the requirements of the *Workers' Compensation Act* Part 3, Division 3, Section 118 (1-3), which states:

Coordination of multiple-employer workplaces

118 (1) In this section:

"multiple-employer workplace" means a workplace where workers of 2 or more employers are working at the same time:

"prime contractor" means, in relation to a multiple-employer workplace,

- (a) the directing contractor, employer or other person who enters into a written agreement with the owner of that workplace to be the prime contractor for the purposes of this Part, or
- (b) if there is no agreement referred to in paragraph (a), the owner of the workplace.

(2) The prime contractor of a multiple-employer workplace must

- (a) ensure that the activities of employers, workers and other persons at the workplace relating to occupational health and safety are coordinated, and
- (b) do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with this Part and the regulation in respect to the workplace.

(3) Each employer of workers at a multiple-employer workplace must give to the prime contractor the name of the person the employer has designated to supervise the employer's workers at that workplace.

By signing this Contract, the Contractor accepts all responsibilities of a prime contractor as outlined in the *Workers' Compensation Act*, and *WorksafeBC OH&S Regulation*.

As a Contractor signing this Prime Contractor Designation form with the City of Surrey (the "owner"), you are agreeing that your company, management staff, supervisory staff and workers will comply with the *Workers' Compensation Board (WCB) Occupational Health and Safety Regulation* and the *Workers' Compensation (WC) Act*.

Any *WorksafeBC OH&S* violation by the prime contractor may be considered a breach of contract resulting in possible termination or suspension of the Contract and/or any other actions deemed appropriate at the discretion of the City.

Any penalties, sanctions or additional costs levied against the City, as a result of the actions of the prime contractor are the responsibility of the prime contractor.

The Contractor acknowledges having read and understood the information above.

By signing this Prime Contractor Designation form, the Contractor agrees as a representative of the firm noted below, to accept all responsibilities of the prime contractor for this project.

The Contractor understands and accepts the responsibilities of the prime contractor designation in accordance with the *Workers' Compensation Act* while contracted by the City of Surrey for project and will abide by all *Workers' Compensation Board Regulation* requirements.

Project File No.: 1220-040-2020-036

Project Title and Site Location: Pondside Café HVAC Upgrade

Prime Contractor Name: _____

Prime Contractor Address: _____

Business Telephone/Business Fax Numbers: Phone: _____ Fax: _____

Name of Person in Charge of Project: _____

Name of Person Responsible for Coordinating Health & Safety Activities: _____

Phone: _____

Prime Contractor Signature: _____ Date: _____

Please return a signed copy of this memo to the City of Surrey, Finance Department, Purchasing Section,
13450 – 104 Avenue, Surrey, British Columbia, V3T 1V8

If you have any questions, please contact the City of Surrey, Manager Occupational Health & Safety at
604-591-4658.

ATTACHMENT 3

CONTRACTOR HEALTH & SAFETY EXPECTATIONS

RESPONSIBILITY OF CONTRACTOR(S)

The City of Surrey strives to maintain a safe work environment for employees and contractors and insists upon the enforcement of safe practices and procedures in all premises and in all work activities. It is essential that all contractors and their employees and sub-contractor(s) perform in the same manner. It is every employers and contractors responsibility to ensure that staff and public are protected from workplace hazards.

As a contractor to the City of Surrey, you are expected to conform to the requirements of the Workers' Compensation Act, the WCB Occupational Health and Safety Regulation and to all federal, provincial and local laws and regulations. The City of Surrey Building Owner, Project Manager, and the Manager, Occupational Health & Safety or designate have the authority to order an unsafe act to cease or to have an unsafe piece of equipment removed from the premises or, in extreme situations, to shut down a job entirely. Any City of Surrey Employee that observes a safety infraction by a contractor performing work for the City of Surrey should bring it to the attention of a manager immediately or Occupational Health & Safety (604-591-4131).

The following information is provided as typical City of Surrey requirements, but does not relieve the contractor from complying with all applicable local, provincial and federal laws, regulations and bylaws.

PERSONNEL

1. You are expected to inform your employees of any potential hazard in the workplace and advise of appropriate action to be taken should a hazard be found or a fire or accident occur.
2. Contractors will restrict persons invited on the premises to employees only. No families or friends are permitted.
3. The contractor will advise the City of any on-site accidents involving the contractor's employees, or injuries to others caused by the contractor's business.

SAFETY MANAGEMENT SYSTEM

1. Contractors will ensure their employees utilize proper safety equipment and clothing as required for job site activities.
2. Contractors must follow and have on site proper written safe work procedures for hazardous work, e.g. Fall protection, confined space entry, hotwork, lockout, excavations and shoring, traffic management, etc.
3. Contractor must Identify workplace risk and implement suitable controls.
4. Contractor must provide safety training and education to staff and have training records available for review.
5. Contractor must have a health & safety program for its workers and sub-contractors
6. Contractor will provide appropriate First-Aid coverage for their workers and subcontractors.
7. Contractor must forward a weekly work task list prior to work commencement.
8. The qualified safety coordinator must participate in the City of Surrey OHS Orientation or attend the Prime Contractor's Orientation.

WORK AREAS –City Facilities

No work by contractors shall occur in any area without prior consent of the City of Surrey Manager, Civic Facilities or his designated representative. Work during normal business hours of the City shall not create undue noise, smells or otherwise unduly disturb the work of City of Surrey staff or the public. If an activity requires that a disturbance is likely, the contractor shall whenever possible only do that work outside normal business hours.

All activities that create a hazard (i.e. work from a ladder, removal of a floor tile, emission of VOC's, etc.) to persons outside the contractor's supervision shall have warning devices, delineation or barriers, sealed spaces, etc. as would normally be required to protect any person from that hazard.

SAFETY ATTITUDE

Your safety record and attitude are important criteria used to judge your qualification for future bidding on solicitations with the City of Surrey.

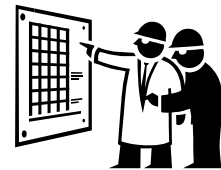
You can help ensure employee safety and your eligibility for future business with the City if you exhibit and practice a "Safe Work - Safe City" attitude.

The City of Surrey is concerned about the health, safety and wellbeing of all employees and contractors. It is essential we maintain a healthy, safe and productive work environment.

All Employees & Contractors:

It is everyone responsibility to:

- ❖ know and comply with WCB regulations and
- ❖ follow established safe work procedures
- ❖ immediately report any work related injury to his/her supervisor; and to the city representative
- ❖ not remain on the work site while his/her ability to work is in any way impaired
- ❖ report unsafe acts and conditions to their supervisor
- ❖ correct unsafe conditions immediately whenever it is possible to do so
- ❖ take reasonable care to protect your health & safety and the health and safety of other persons who may be affected by your act's or omissions at work



An employee must refuse to work if continuing to do so would endanger the health and safety of the employee, fellow employees or others. The worker must immediately report the circumstances of the unsafe condition to his or her supervisor or manager. If the unsafe condition is not remedied or the issue is not resolved the Manager, Occupational Health & Safety must be contacted.

A common sense approach usually resolves the issue.

GENERAL RULES

1. For all secured worksites, contracted workers are required to sign in and sign out each day
2. (Access cards may be issued – a worker may need to provide an Identification document (i.e. Driver's License) in exchange).
3. Personal protective equipment, as determined by the City, through consultation with the Contractors Health and Safety Representatives must be worn when and where required. (Hard Hats, Safety Footwear, Safety Vests and Safety Glasses must be worn on active construction sites. Hearing Protection must be worn when noise levels are above 85dBA.)
4. Horseplay, gambling and the use of alcohol or narcotics will not be tolerated.
5. No Smoking within 7.5M of a City owned buildings door exits, windows and vents.
6. Report **ALL** injuries to your supervisor immediately and notify the City's site representative.
7. Report any unsafe conditions, including someone under the influence or hazards, which may allow an injury to occur to you, a fellow worker, or others on the worksite.
8. Report any property damage, regardless of how minor.
9. Restricted and controlled products will be labeled, used and stored in accordance with the associated regulations, e.g. WHMIS. Follow all procedural instructions when using or handling hazardous materials/controlled products and ensure that all containers of hazardous/controlled product materials are properly labelled and stored in designated areas.
10. Obey all posted signs and notices. Do not venture into areas that you are not authorized to enter.
11. Always use the correct posture when lifting and get assistance if the weight is excessive.
12. Do not work within the limits of approach to high voltage equipment.
13. If working at heights greater than 10 feet a Fall Protection system must be in place. The appropriate Fall Protection equipment must be worn at all times.
14. **Housekeeping** (Orderliness and good housekeeping are basic requirements and must be maintained at all times):
 - a) Aisles are to be kept clear at all times.
 - b) Individual work areas are to be kept clean and tidy.
 - c) All materials, tools, products and equipment are to be kept in their designated areas.
 - d) Liquid spills are to be cleaned up immediately to prevent slips and falls.
 - e) Accumulation of oily rags, combustible refuse or similar fire hazards will not be tolerated.
15. **Fire Prevention:**
 - a) Become familiar with Surroundings and emergency exit.
 - b) Ensure aisles and exits are not blocked at any time.
 - c) Anytime a fire extinguisher is used, report it immediately to your supervisor, so that it can be recharged.

16. Equipment Operation (Any equipment, which could create a hazard, must be maintained in good condition):

- a) Equipment must not be repaired, adjusted or operated unless by a "competent person" who understand the safe operating procedures.
- b) Always be aware of the use and location of the "EMERGENCY STOP" button, if equipment is so equipped, before using the equipment.
- c) Loose clothing, jewelry and long hair must be secured to prevent becoming entangled with equipment.
- d) The Operator must check all safety devices on equipment before operation.
- e) All equipment must be turned off and the appropriate "lock-out" procedure followed, prior to repairs, cleaning, adjustment or lubrication.
- f) Radio/Walkman/I-pod Head phones are not allowed to be worn during regular work operations.
- g) All ladders must be of an approved type and length. Unacceptable ladders must be removed immediately from the premises.
- h) All vehicles and equipment on City property must be kept in safe mechanical condition at all times, and be operated only by persons with a valid driver's license and/or proper training and qualifications.
- i) Contractors will not operate any equipment, valves, switches, etc., which are part of the City's operation, unless specific permission is received from the Department Representative.

17. Ground Disturbance –Every time you dig in the ground, with a shovel or mechanized equipment, you run the risk of loss of life or damage to property if you hit any of the many buried cables, conduits, gas or oil pipelines and/or other underground facilities that serve our city, **BC One Call Must be called and a ticket obtained prior to commencing any ground disturbance activities.**

| | |
|---------------------|---|
| Issued By: | Occupational Health & Safety Section - Contractor Coordination Program |
| Date: | Revised: January 14, 2014 Original: August 15, 2014 |
| Distributed: | Via Email & Posted on Intranet: January 16, 2015: <u>August 15, 2014</u> |

This document does not replace the Workers' Compensation Act or WorkSafeBC OH&S regulation. Each individual Contractor must have specific health and safety safe work rules and procedures that apply to their work tasks. Each Contractor must comply with the Workers' Compensation Act and WorkSafeBC Occupational Health & Safety Regulation and to all federal, provincial and local laws and regulations. If a contractor is unable to comply they must bring this to the attention of their qualified safety representative and to the Prime Contractor safety representative immediately.

Authorized Signature: _____

Name: _____
(Please Print)

Date: _____