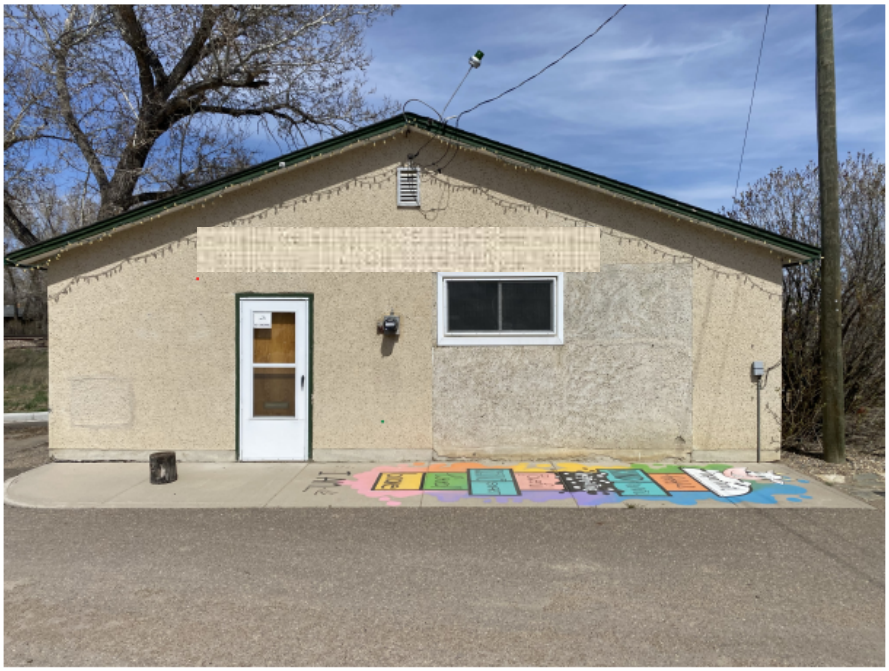
PROJECT NO. CA0042774

BID DOCUMENTS AND SPECIFICATIONS

BUILDING DEMOLITION

DECEMBER 04, 2024

78 South Railway Avenue
Hamlet of Irvine



PREPARED FOR:
CYPRESS COUNTY
816 – 2ND AVENUE DUNMORE
ALBERTA, T1B OK3

PREPARED BY:
WSP CANADA INC.
SUITE 110 - 1222 BRIER PARK ROAD NW
MEDICINE HAT, ALBERTA T1C 0B7

1 GENERAL

1.1 DESCRIPTION OF THE WORK

1.1.1 A general description of the Work to be carried out is given in Section 01 11 00. The specific requirements of the required work are given in the details and technical specifications.

1.1.2 It shall be the Bidder's responsibility to ensure that all items have been included, without repetition, in the submitted bid.

1.2 NOTE TO BIDDERS

1.2.1 For information regarding this project, you may contact Mr. Glenn Mattson, Public Works Construction Foreman for Cypress County at 403-526-2888 or his representing Consultant:

C/O Ailine Donald, Project Coordinator
WSP Canada Inc.
Suite 110, 1222 Brier Park Road NW
Medicine Hat, AB T1C 0B7
Phone: 403-528-8818
Email: ailine.donald@wsp.com

1.2.2 There will be no pre-tender meeting for this contract.

1.2.3 Electronic Tenders must be received no later than 2:00:59 p.m. local time on December 17, 2024, by emailing: ailine.donald@wsp.com Attention: WSP, Contact Opening – Building Demolition

1.2.4 Tenders will be opened at 2:01 p.m. local time on December 17, 2024, at the WSP office in Medicine Hat, Alberta. Bid Opening will be closed to the Public.

1.2.5 Bidders will also be able to receive the unofficial tender results by e-mail within a reasonable time frame after the bid opening once County has given approval.

1.2.6 Facsimile changes to the Unit Price Schedule will not be accepted. Alternatively, changes may be made via email message sent to Ailine Donald, ailine.donald@wsp.com, marked “ATTENTION: CONTRACT OPENING” “Building Demolition” To be acceptable, the revised bid form must be received no later than the time and date set for the receipt of the Tender. It is up to the Bidder to confirm receipt of the change.

1.3 COMPLETION DATES

1.3.1 The Bidder shall be required to complete the Project within a 4-week timeline after award.

1.4 EXAMINATION OF SITE

1.4.1 It is the responsibility of each Bidder to conduct sufficient investigation of the site of the Work and obtain all required information about local conditions. The Bidders shall make their own estimates of the facilities and difficulties to be encountered. Bidders may not claim at any time after submission of the bid that there was any misunderstanding of the terms and conditions of the Contract relating to site conditions evident or apparent during the bid period. The Owner, the Consultant and their employees will not be held responsible for the Bidders failure to obtain such information.

1.4.2 Owner assumes no responsibility for condition of areas to be selectively demolished

1.5 OMISSIONS AND DISCREPANCIES

1.5.1 Bidders shall ensure that their copy of the documents contains all the pages listed in the Table of Contents. Should a Bidder find discrepancies in, errors, or omissions from the drawings or specifications, or be in doubt as to their meaning, the Bidder shall notify the Consultant. An addendum may then be issued to all Bidders.

1.6 INTERPRETATIONS

1.6.1 No oral interpretations made to a Bidder as to the meaning of any bid documents shall modify any bid document. Clarifications requested by Bidders shall be in writing directed to the Consultant not less than 48 hours or two Business Days, whichever is the longer period of time, before the tender closing date. Oral and Written clarifications and/or interpretations are only binding upon written addenda. Bidders may be advised verbally or electronically of all such written addenda as they are being prepared in order that they become aware of any changes as quickly as is possible. The written addenda will govern the contract.

1.7 INSTRUCTIONS AND ADDENDA

1.7.1 The Instructions to Bidders and all Addenda to the Bid Documents and Specifications which may be sent to the Bidders during the time of preparation of bids shall be considered as part of the Contract Documents.

1.7.2 Instructions, clarifications or amendments to the Bid Documents may be issued after the Closing Date by one or more post-tender addenda to those Bidders who submitted a bid before the Closing Date. A Bidder's receipt of a post-tender addendum shall not be construed or determinative of whether or not its bid is compliant. Post-tender addenda will form part of the Bidder's bid. A Bidder's failure to respond to a post-tender addendum may result in its bid being rejected.

1.7.3 The Owner or consultant may contact any one or more Bidders to request additional information, including clarification or any other information without any obligation to contact any other Bidder. Requests for additional information shall not be construed as acceptance of a bid, an award of the Contract, or the rejection of a bid.

1.8 ACCEPTANCE OR REJECTION OF BIDS

1.8.1 The Owner shall not be responsible for any liabilities, costs, expenses, loss or damage incurred, sustained or suffered by any Bidder prior or subsequent to or by reason of the acceptance or the non-acceptance by the Owner of any bid or by reason of any delay in the acceptance of a bid save as provided in the contract. The Owner reserves the right to reject any or all bids and the lowest or any bid will not necessarily be accepted.

1.9 CCDC DOCUMENT

1.9.1 The CCDC Standard Construction Document specified in Contract Conditions shall apply to this Project. The Form of Agreement, General Conditions and Definitions shall all apply.

1.10 PRICES AND METHOD OF QUOTATION

1.10.1 An Estimated Contract Price will be arrived at by summing prices quoted for the individual Items, and including selected optional Items, if provided. Prices shall include all labour, materials, costs for the co-ordination between the Items, clean-up, temporary removal and replacement of items which will affect the Work, making good finishes affected by the Work, overhead, profit and statutory charges. Breakdown of Work into sections is only for the purpose of assessing bids. In the case of an error in extending the unit prices, the unit price shall be deemed correct and used to determine the correct price.

1.11 BONDS

1.11.1 Submit with Tender an Agreement to Bond in the amount of 50% of the Estimated Contract Price plus Tax for Performance and for Labour and Materials. The Standard Agreement to Bond Form must be executed on behalf of the Surety Company by its authorized officers under the company's corporate seal. Surety bonds shall be provided by a company licensed to provide Bonds in the Place of Work.

1.11.2 Upon Award supply a Performance Bond (original document required). The Performance Bond shall remain in effect for a period of two years from the date of Substantial Performance as defined in the governing lien legislation (or, where no definition exists, the date when work is ready for use or is being used for the purpose intended).

1.11.3 Upon Award supply Labour and Materials Bond (Original document required). The Labour and Materials Bond shall remain in effect for a period of one year following the date upon which work under the contract ceases.

1.12 SUBMITTALS

1.12.1 Submit with Tender an Agreement to Bond in the amount of 50% of the Estimated Contract Price plus Tax for Performance and for Labour and Materials. The Standard Agreement to Bond Form must be executed on behalf of the Surety Company by its authorized officers under the company's corporate seal. Surety bonds shall be provided by a company licensed to provide Bonds in the Place of Work.

1.13 ELECTRONIC TENDERING

1.13.1 Bidders shall ensure that sealed, hard copies of their Bids are consistent with submitted electronic bids. Discrepancies between the documents will result in disqualification.

End o Section 00 21 13

Bid By: _____

Place of Business at: _____

_____

_____

Having Head Office at: _____

_____

_____

(hereinafter called the “Bidder”), herein offers to:

Cypress County
816 - 2nd Avenue
Dunmore, AB.
T1B 0K3

hereinafter called the Owner, that:

We the undersigned, having carefully examined the site, investigated the conditions pertaining to the Work, the Information for Bidders, the Form of Agreement, the Definitions, the General Conditions, the Supplementary Conditions, the Bid Documents, the Specifications and the Drawings, including Addenda Nos.

_____ to _____ (herein collectively called the "Contract" or "Contract Documents") for:

78 South Railway Avenue, Irvine, Alberta

Building Demolition

(herein called the "Work") will provide and pay for all materials, labour, tools, equipment and plant necessary for the execution of the Work as called for by the said Contract Documents in the manner prescribed therein and in accordance with the requirements of the Consultant (as defined in the Contract) in accordance with the following Statements.

STATEMENT A – BID AGREEMENT

If this bid is accepted by the Owner:

1. The Bidder will perform the Work as specified in accordance with the terms of the Contract for the amounts given in Statement B and C, and using the subcontractors listed in Statement D.

2. The Bidder will carry out any additional or extra work (including the supply of any additional materials or equipment pertaining thereto) or will delete any Work as may be required by the Consultant in accordance with the Contract.

3. The carrying out of any Work referred to in Paragraph 1 above or the issuance by the Consultant of a Change Order relating to such Work or the acceptance by the Bidder of such Change Order shall not, except as expressly stated in such Change Order, waive or impair any of the terms of the Contract or of any Change Order previously issued by the Consultant or any of the rights of the Owner or the Consultant under the Contract.

By submitting this bid, the Bidder agrees that:

i) This bid is made without any connection, comparison of figures or arrangements with, or knowledge of, any other corporation, firm or person making a bid for the same Work except for prices submitted for subcontracts, and is in all respects fair and without collusion or fraud.

ii) This bid will be left open for acceptance for a period of 60 days from the date of closing.

iii) The drawings and specifications have been examined and there are no materials or methods indicated to which the Bidder objects or for which the Bidder would be unwilling or unable to accept responsibility. The Bidder agrees that after signing the Contract, full responsibility for the performance of the Work will rest with the Bidder and the Owner is in no way to be held liable.

STATEMENT B – BID

Notes:

Unit Price Quantities: Accurate quantities for portions of the Contract cannot be pre-determined; they will be established as part of the Work. The estimated quantities below are approximate and serve to establish the Estimated Contract Price.

Taxes and Overhead: The prices are for the completed work, including all overhead, profit and other Contractor related expenses. All pricing is to ***exclude Value Added Taxes.***

All Other Items: Costs for items that are not specifically itemized and described below, but are required to complete the work in accordance with the Drawings and/or Specifications, and whose quantities can be pre-determined, are to be included under "All Other Items".

NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY		UNIT PRICE		PRICE FOR ITEM
A	**Mobilization and Demobilization**					
A1	Mobilization and Demobilization	1	Lump Sum			$
B	**Building Demolition**					
B1	Environmental Remediation & Waste Disposal includes Recycling and Waste Diversion	1	Lump Sum			$ -
B2	Main Building Demolition	1	Lump Sum			$ -
B3	Foundation Removal	1	Lump Sum			$ -
C	**Site Remediation**					
C1	Clean backfill material (granular)	100	m^3		m^3	$ -
D	**Cash Allowances**					
D1	Abatement	1	Cash Allowance			$ 16,000.00
D2	Utility Abandonment	1	Cash Allowance			$ 7,000.00
	TOTAL BASE BID (Excluding Tax)					$ -

Bidder: **Date**

STATEMENT C – CHANGES IN WORK

The following hourly rates (which are to include overhead and profit) will be applicable for this contract:

NO.	DESCRIPTION	LABOUR/MATERIAL RATE
1.	Site Supervisor	$ /hr
2.	Journeyman	$ /hr
3.	Labourer	$ /hr
4.	Welder	$ /hr
5.	Project Manager	$ /hr
6.	Other:	$ /hr

STATEMENT D
LIST OF PROPOSED SUBCONTRACTORS, MANUFACTURERS AND PRODUCTS

The name of each proposed subcontractor or manufacturers must be given in the following list. If the Bidder proposes to sublet a part of the work, which is not listed below, the subtrade and the proposed subcontractor's name shall be added to the list. Failure by a Bidder to comply with the foregoing requirements may result in the bid being rejected as an informal bid.

Failure to supply name of proposed subcontractor and product at the time of the bid shall indicate that work will be performed by the bidding contractor's own forces. Subcontractors not proposed at the time of bid shall not be permitted to perform work in this contract without the Owner's/Consultant's approval.

SUBTRADE	PROPOSED SUBCONTRACTOR OR MANUFACTURER	PROPOSED SPECIFIED PRODUCT
Hazardous Material Abatement		
Demolition		
Electrical		
Mechanical		
Site Work		
Others:		
Others:		
Others:		
Others:		
Others:		
Others:		
Others:		
Others:		
Others:		
Others:		
Others:		
Others:		

Dated at _____ this _____ day of _____, 2024.

_____
NAME OF COMPANY

_____ _____
SIGNATURE OF WITNESS SIGNATURE OF BIDDER

_____ _____
NAME TITLE

(APPLY SEAL HERE)

Notes:

1. If the bid is submitted by or on behalf of a Corporation, it must be signed In the name of such Corporation by the duly authorized officers and the seal of the Corporation must be affixed. If the bid is submitted by or on behalf of an individual or a partnership, the signature of the individual or partnership must be witnessed.

2. Attach Agreement to Bond.

END OF SECTION 00 41 00

1 GENERAL

1.1 GENERAL CONDITIONS

1.1.1 The Contract shall be governed by the General Conditions, CCDC Standard Construction Document No. 2 – Stipulated Price Contract (Current Version), except as such conditions are amended by the following:

1. Section 00 73 02 – Supplementary Conditions

1.1.2 **If there is direct conflict between the intent of any of these sections, priority will be given to each section in the order shown above. In the case of any numbering conflicts, the Contract shall be interpreted to include the intent of each clause.**

2 SUPPLEMENTARY CONDITIONS

2.1 SUPPLEMENTS TO GENERAL CONDITIONS

2.1.1 All articles contained within these Conditions of the Contract shall be read in conjunction with, and apply to, the General Conditions of the Construction Contract.

2.2 ARTICLE A-3 CONTRACT DOCUMENTS

2.2.1 The Conditions of the Contract shall be a part of the Contract Documents.

2.3 ARTICLE A-4 CONTRACT PRICE

2.3.1 Add new 4.4: “The Contract Price is the sum of the products of each Unit Price stated in the Schedule of Prices multiplied by the appropriate actual quantity of each Unit Price item that is incorporated in or made necessary by the Work, plus lump sums and allowance, if any, stated in the Schedule of Prices”

2.4 DEFINITIONS

2.4.1 In Contract Time, at the end of the definition add: "All time limits stated in the Contract documents are of the essence of the Contract."

2.4.2 Add the following new definition “Construction Schedule: The Construction Schedule means a schedule of the Work prepared by the Contractor indicating the Work to be completed within the period specified in the Contract Documents, including such other critical dates as set out in the Contract Documents, in sufficient detail to indicate the intended start and completion dates of the major elements of the Work.”

2.4.3 Add the following new definition “Schedule of Prices: The Schedule of Prices is the Bid Form appended to the Contract Documents and subject to adjustments as provided in the Contract Documents, identifies:

1. The items of work;
2. The units of measure, estimated quantity, and Unit Price for each Unit Price item;
3. The price of each lump sum item; and
4. Allowances, if any”

2.4.4 Add the following new definition “Unit Price: A Unit Price is the amount payable for a single Unit Price item as stated in the Schedule of Prices”

2.4.5 Add the following new definition “Addenda: Addenda (addendum, singular) is a document used to supplement the original Contract Documents, which can be issued during or after the tender process. Addenda shall form part of the Contract.

2.4.6 When used in the context of a Product, read the word “provide” to mean “supply and install to result in a complete installation ready for its intended use”.

2.5 GC 1.1 CONTRACT DOCUMENTS

2.5.1 Insert “ Addenda” between the “the General Conditions” and “Division 1 of the Specifications” under 1.1.5.

2.5.2 Add 1.1.12: “The Contract Documents are to be interpreted as a whole, although they are arranged in divisions for convenience and clarity. The Contractor is responsible for all the Work, regardless of the division of the Work in the Contract Documents, and such division does not impose any obligation on the Consultant, Project Manager, or upon the Owner as arbiter to establish limits, or responsibility between the Contract and the Sub-Contractors”

2.6 GC 2.3 REVIEW AND INSPECTION OF THE WORK

2.6.1 In 2.3.2, insert “measurement for payment” after “If the work is designated for…” and insert “measurements” after “…reasonable notification of when the work will be ready for…”

2.6.2 In 2.3.4, insert “measurement for payment” after …work that has been designated for…” and insert “measurements” after “…the Contractor shall, if so directed, uncover such work, have the…”

2.6.3 Add new 2.3.8: “The Owner will deduct from monies owing to the Contractor, the cost for added inspection costs incurred by the Owner as determined by the Consultant due to improper or poor workmanship of the Contractor or failure by the Contractor to follow instructions of the Consultant.”

2.6.4 Add new 2.3.9: “For Unit Price Items involving repair, measurements and pay quantities shall be determined and agreed to after removal/preparation is complete, but prior to placement of repair materials”

2.7 GC 3.4 CONSTRUCTION SCHEDULE

2.7.1 In 3.4.1.1, replace: "prior to the first application for payment" with "a minimum 10 Working Days before Work commences."

2.7.2 Add new 3.4.2: “The Owner may, at any time, give written direction to the Contractor for the Contractor to accelerate the Work in which event the Contractor shall use its reasonable best efforts which may include hiring additional labour and equipment or working additional hours or shifts to proceed with Work more quickly. If at the time of such direction by the Owner, the Contractor is not behind the Construction Schedule, or is not behind due to a cause within the Contractor's control, then the cost of such acceleration shall be for the account of the Owner.”

2.8 GC 3.5 SUPERVISION

2.8.1 Add new 3.5.3: Project management and supervision shall be deemed not satisfactory and changes or additions to superintendence may be demanded when:

1. control, general safety, organization and coordination of the Work is not satisfactory; or,

2. the quality of the Work does not meet the requirements of the Contract Documents; or,
3. the directions given by the Consultant in accordance with the Contract Documents are not followed.

2.9 GC 3.6 SUBCONTRACTORS AND SUPPLIERS

2.9.1 Delete 3.6.2 in its entirety and replace with the following: “Subject to paragraph 3.6.3, the Contractor agrees to employ only those Subcontractors proposed in writing, including the Contractor’s own forces, if any, and accepted by the Owner with the acceptance of the tender or on entering into this Contract. The Contractor shall not change any Subcontractor without cause and without the written consent of the Owner, which consent will not be unreasonably withheld.”

2.10 GC 3.7 LABOR AND PRODUCTS

2.10.1 Add new 3.7.4: “Only specified materials or articles, or substitutes accepted in writing, will be permitted in the Work. Unspecified materials or rejected alternatives if built into the Work without prior approval shall be replaced with the specified or accepted material at the sole cost of the Contractor including any resulting costs..”

2.11 GC 3.8 SHOP DRAWINGS

2.11.1 Add new 3.8.8: “Unless otherwise agreed to, the schedule for the Consultant to review and return Shop Drawings shall not be less than 10 Working Days.”

2.12 GC 4.2 CONTINGENCY ALLOWANCE

2.12.1 Delete 4.2.3 in its entirety and replace with the following: “Expenditures made under the contingency allowance shall be authorized by the Consultant. Work shall be valued in accordance with GC 6.2.1 Change Order or GC 6.3 Change Directive, and shall not exceed the contingency allowance”.

2.13 GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

2.13.1 Replace 5.2.2 with the following: “On or before the 25th day of each month, the Contractor shall submit to the Owner in the care of the Consultant, in a form required by the Owner, a written application for payment showing the proportionate value of the work performed and products incorporated into the Work to date.”

2.13.2 In 5.2.3, change: "Work Performed and Products delivered to the Place of the Work" to “Work Performed and Products incorporated into the Work"

2.13.3 Add the following to 5.2.3 “As of the last day of the payment period, the amount claimed shall be:

1. The value of Unit Price work performed, being the sum of the products of each Unit Price stated in the Schedule of Prices multiplied by the appropriate actual quantity of each Unit Price Item that is incorporated in or made necessary by the Work; plus
2. The value of lump sum work performed, proportionate to the amount of the lump sum items, plus
3. The value of Products delivered and incorporated into the place of Work.

2.13.4 In 5.2.4, delete the words “at least 15 calendar days before the first application for payment” and replace with the words “within 10 Working Days of receiving a Notice of Award from the Owner”.

2.13.5 Add the following sentence to 5.2.6 “Include accurate quantity measurements and other evidence as requested by the Consultant for each Unit Price item”

2.13.6 Delete 5.2.8 in its entirety and replace with the following: "The Contractor shall submit, with each application for payment after the first, including application for release of holdback:

1. a statutory declaration by the Contractor on a copyright sealed form CCDC Document 9A-2018, to the effect that all payments for wages and salaries, all payments due to sub-contractors, all payments for materials furnished, and all other accounts have been paid in full as required by the contract up to and including the latest progress payment received;
2. an updated schedule, and;
3. BC: Worksafe BC Clearance Certificate
4. AB, SK, and MB: Workers’ Compensation Board Clearance Certificate
5. ON: Workplace Safety and Insurance Board Clearance Certificate
6. QC: CSST Certificate (Confirmation d’inscription à la commission de la santé et de la sécurité du travail)

2.13.7 Add new 5.2.9: “Before final inspection is completed and before applying for release of holdback, the Contractor shall submit to the Owner/Consultant:

1. all specified written guarantees, bonds, records, certificates and maintenance and operation manuals (including instructions to the Owner's staff in the operation of any plant or equipment);
2. the name, address, telephone number, and contact person of the general contractor, sub-contractors, material manufacturers and material suppliers.

2.14 GC 5.3 PAYMENT

2.14.1 Add new 5.3.2 “No certificate for payment will be issued until the Contractor has executed the Contract Documents, provided the Construction Schedule called for in GC 3.4 and the schedule of values called for in GC 5.2.4, evidence of insurance as called for in GC 11.1. It is a condition precedent to any such payment that the Owner, at its sole and absolute discretion, may retain out of such payment the amount of any outstanding liens or claims or any other indebtedness, including claims for Products provided, which may have been incurred by the Contractor in performing the Work and for which the Owner may in any way be held responsible.”

2.15 GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK

2.15.1 Add new 5.4.7: The Contractor shall submit the following documents with their request for Substantial Performance to be reviewed by the Consultant. These requirements do not limit the Contractor’s Substantial Performance obligations noted elsewhere in the Contract. A deficiency holdback will be retained for the estimated value of the following items until they are submitted by the Contractor, and reviewed and accepted by the Consultant:

1. the list of all deficient and incomplete items of work including the estimated value of each item;
2. all maintenance manuals, operating instructions, maintenance and operating tools, replacement parts or materials and warranties as specified in the Contract Documents;

3. a complete set of marked up construction drawings and other data in the form specified in the Contract Documents, or as required by the Consultant, for the production of as built drawings to show all significant Changes to the Work made during construction;
4. current certification by the Workers' Compensation Board that the Contractor and all Subcontractors are in good standing;
5. a statement that all claims and demands for extra work or otherwise, under or in connection with the Contract, have been presented to the Consultant and that the Contractor expressly releases the Owner from all claims and demands except those made in writing prior to that date and still unsettled

2.15.2 Add 5.4.8: "No later than 30 Working Days following issuance of the certificate of Substantial Performance of the Work for the Work, the Contractor shall provide to the Owner all service contracts, manufacturers' inspections, certifications, guarantees and warranties and assignments of all guarantees and warranties as specified in the Contract Documents."

2.16 GC 6.2 CHANGE ORDER

2.16.1 Add new 6.2.3: "The method of adjustment or the amount of adjustment to the Contract Price presented by the Contractor may be one of or a combination of the following:

1. Change to the estimated quantities for Unit Price items listed in the Schedule of Prices applicable to the change in the Work;
2. Lump Sum quotation for the changes in the Work;
3. Unit Price quotation for the changes in the Work;
4. Cost of the Contractor's actual expenditures attributable to the change plus 15 percent for Contractor's overhead and profit and
5. Amount of the Contractor's actual savings attributable to the change.

2.17 GC 6.3 CHANGE DIRECTIVE

2.17.1 Add new 6.3.6.4: "The Contractor's fee shall be 15 percent."

2.18 GC 6.5 DELAYS

2.18.1 Add new 6.5.6: "If the Contractor is delayed in the execution of the Work for any reason other than for which an extension is permitted under GC 6.5 Delays, or if the Contractor fails to provide Notice in Writing of a claim for extension under GC 6.5 Delays or if the Contractor does not perform the Work substantially in accordance with the Construction Schedule, the Contractor shall take whatever measures are necessary at his own expense, including but not limited to the provision of additional labour, the provision of additional hours of work and the furnishing of additional plant and equipment, to ensure the completion of the Work by the date stated in Article A-1 of the Agreement - THE WORK.

2.19 GC 6.7 QUANTITY VARIATIONS

2.19.1 Add new GC 6.7 QUANTITY VARIATIONS in its entirety to include the following:

1. Paragraph 6.7.1: The provisions of GC 6.7 QUANTITY VARIATIONS apply to the estimated quantities identified in the Schedule of Prices, or where the estimated quantities have been amended by Change Order, the provisions apply to the amended estimated quantities

2. Paragraph 6.7.2: The Owner or the Contractor may request an adjustment to a Unit Price contained in the Schedule of Prices provided the actual quantity of the Unit Price item in the Schedule of Prices exceeds or falls short of the estimated quantities by more than 30%;
3. Paragraph 6.7.3: Where the actual quantity exceeds the estimated quantity by more than 30%, a Unit Price adjusted pursuant to paragraph 6.7.2 shall apply only to the quantity that exceeds 130% of the estimated quantity.
4. Paragraph 6.7.4: Where the actual quantity falls short of the estimated quantity by more than 30%, a Unit Price adjusted pursuant to paragraph 6.7.2 shall apply to the actual quantity of the Unit Price Item. The adjusted Unit Price shall not exceed a Unit Price that would cause the payment to exceed 70% of that derived from the original Unit Price and estimate quantity.
5. Paragraph 6.7.5: The party that intends to request for an adjustment to a Unit Price shall give timely Notice in Writing to the other party and to the Consultant.
6. Paragraph 6.7.6: The Consultant's findings, with respect to that claim made by either party, will be given by Notice in Writing to both parties within 30 Working Days after receipt of the claim by the Consultant, or within such other time period as may be agreed by the parties.
7. Paragraph 6.7.7: If such finding is not acceptable to either party, the claim shall be settled in accordance with Part 8 of the General Conditions – DISPUTE RESOLUTION.

2.20 GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, OR TERMINATE THE CONTRACT

2.20.1 In 7.1.1, line 1, after the word "bankrupt" insert "commits an act of bankruptcy or threatens to commit an act of bankruptcy,"

2.21 GC 8.3 NEGOTIATION, MEDIATION AND ARBITRATION

2.21.1 Add 8.3.9: "Unless both parties agree, the Contractor shall not stop the Work, or any part of the Work, pending the resolution of any dispute under the Contract between the parties."

2.22 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

2.22.1 In 9.2.1, add the following: "and the Contractor shall be deemed to have control and management of the Place of the Work with respect to any toxic or hazardous substances or materials which may be brought on to the Place of the Work by the Contractor or its Subcontractors."

2.22.2 In 9.2.5.4, add the following: "and take all necessary steps in accordance with the instructions of the Consultant and all applicable legislation to treat, store, or otherwise dispose of the substances or materials."

2.22.3 Add 9.2.10: "The Contractor shall indemnify and hold harmless the Owner, the Consultant, their agents and employees, from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or resulting from exposure to, or the presence of, toxic or hazardous substances or materials which are brought on to the Place of Work or are encountered in the Work, by the Contractor or its Subcontractors. This obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity set out in GC 12.1 INDEMNIFICATION or which otherwise exist respecting a person or party described in this paragraph."

2.23 GC 9.4 CONSTRUCTION SAFETY

2.23.1 Add new 9.4.6: "No comments, suggestions or instructions from the Owner or Consultant are to be relied upon or assumed to reduce or replace the Contractor's responsibility for construction safety."

2.23.2 Add new 9.4.7: "The Contractor shall indemnify and hold harmless the Owner and the Consultant, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits or proceedings by third parties that arise out of, or are attributed to, the Contractor's safety performance."

2.23.3 All asbestos removal will be conducted following best practice procedures.

- Asbestos Floor Tile Removal
    - Follow Section 5.2 "Low Risk" of the Alberta Asbestos Abatement Manual
- Asbestos Stucco Removal
    - Follow Section 5.3 "Moderate Risk" of the Alberta Asbestos Abatement Manual

The contractor shall ensure that an Environmental Consultant is designated and in charge at all times of the abatement of all hazardous materials included in the demolition work. The contractor shall provide the name of the Environmental Consultant in writing to Cypress County prior to startup.

At the completion of the work, the Environmental Consultant shall provide a letter which verifies that the abatement was completed in accordance with the specifications and any applicable safety codes, including the Occupational Health and Safety Code, Alberta Regulation 191/2021 and the Alberta Asbestos Abatement Manual.

END OF SECTION

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 – GENERAL REQUIREMENTS

DIVISION 02 – SITE CONSTRUCTION

DIVISION 23 – HEATING, VENTILATION AND AIR-CONDITIONING (HVAC)

DIVISION 26 – ELECTRICAL

DIVISION 31 - EARTHWORK

DIVISION 32 – EXTERIOR IMPROVEMENTS

Appendix A – Hazardous Materials Building Assessment:

78 South Railway Avenue Irvine, AB
Prepared by: Square One Consulting Ltd., April 26, 2024

1. Definitions

.1 Information Documents means information of any type and in any form, related to the Project and identified in this Section as such and do not include the Contract Documents.

.2 Contractor is synonymous with Bidder.

2. Status of Information Documents

.1 Information Documents, or any part thereof, are not part of the Contract unless specifically incorporated into Contract Documents by means of copying, transcribing or referencing.

3. Use of and Reliance upon Information Documents

.1 Information Documents are made available to Bidder by Owner for the purpose of providing Bidder with access to information available to Owner.

.2 Information Documents shall not be considered a representation or warranty that information contained therein is accurate, complete or appropriate, and do not form a part of the Contract Documents.

.3 Bidder shall interpret and draw its own conclusions about Information Documents and is encouraged to obtain specialist advice with respect thereto. Prime Consultant assumes no responsibility for such interpretations and conclusions.

.4 Information contained in Information Documents may be time sensitive and dates shall be considered when interpreting Information Documents.

.5 Bidder may rely upon the data contained in Information Documents, or parts thereof, which are specifically incorporated into Contract Documents by means of copying, transcribing or referencing, but shall draw his own conclusions from such data and shall not rely on opinions or interpretations contained therein.

4. Information Documents Incorporated into Contract Documents

.1 Information Documents incorporated into Contract Documents, in whole or in part, consist of the following:

.1 Appendix A- Hazardous Materials Building Assessment
78 South Railway Avenue Irvine, AB
Prepared by: Square One Consulting Ltd., April 26, 2024

.2 Direct inquiries during bid period to person identified in Instructions to Bidders to receive inquiries.

END OF SECTION

1 GENERAL

1.1 Description of Work

.1 Work of this contract includes the demolition of the old and abandoned library Facility at 78 South Railway Avenue, Irvine, Alberta. Hazardous material abatement is required and is to occur prior to demolition. Demolition to include removal of the entire building including foundations and existing sidewalk and all utility disconnections. Void created by demolition to be backfilled with granular material for future parking.

.2 Hazardous materials abatement will be paid as a cash allowance and will include the cost of hiring an environmental consultant to oversee and direct the abatement process to ensure all regulations and rules are followed. Square One Consulting completed a hazardous materials assessment of the building and is familiar with the site.

.3 The disconnection of the existing utilities will be paid as a cash allowance. The contractor will be required to coordinate with the County to define the exact scope and materials needed for the disconnection.

.4 In the event that the contractor awarded the contract wishes to salvage the building, the contractor will take all liability for the hazardous materials and the transport. The contractor shall provide a complete release and indemnity in favor of the County and its agents of any potential claims.

1.2 General Contractor Responsibilities

.1 Assume total control of the Work and effectively direct and supervise the Work so as to ensure conformity with the Contract Documents.

.2 Be solely responsible for construction means, methods, techniques, sequencing, safety, scheduling, and procedures and for coordinating the various parts of the Work.

.3 The individual Specification Sections or Drawings do not necessarily define trade scope, and it is the General Contractor's responsibility to determine each Subcontractor's trade scope. Coordination between the specifications, and across the drawing sets will be required by the trades and General Contractor.

.4 Be responsible for all coordination for the Project, including coordinating Subcontractors, and for ensuring that the Contract between the General Contractor and the County and Contracts between the General Contractor and Subcontractors are coordinated and adhered to.

.5 If items in this specification are noted as being done by the Subcontractor, it does not relieve the General Contractor from his responsibilities to coordinate such Work and to ensure such items are done in accordance with the Contract Documents and done within time allotted in the agreed upon schedule. Items noted as being done by the Subcontractor may be done by the General Contractor, if it is deemed to best suit the Work of this Contract. Where items are noted as being done by Subcontractors, the General Contractor is also responsible for such items.

.6 In the case of a dispute, arbitrate disputes regarding trade scope. Extras will not be considered on the grounds of differences in interpretation of the Specification as to which Sub-contractor does what work.

.7 Provide full-time site administration to ensure that all Subcontractors coordinate their work with Other Subcontractors and to ensure that the established construction schedule is maintained.

.8 Ensure that each Subcontractor cooperates fully with the General Contractor and with all other Subcontractors.

.9 Unless specifically noted otherwise in the specifications or the drawings, provide and pay for:

- .1 Labour, materials, and equipment.
- .2 Tools, construction equipment and machinery.
- .3 Water, heat and utilities required for construction required for construction other than those provided by the Owner.
- .4 Other facilities and services necessary for the proper execution of the completion of the work.
- .5 Provide a copy of all current insurance required,

.10 Pay legally required GST, sales, consumer and any other taxes applicable.

.11 The Cypress County will apply for the Demolition Permit. The Contractor shall pick up the permit, paying the permit fee upon collection.

.12 Secure and pay for, as necessary, to ensure the proper execution and completion of the work, and as applicable at the time of receipt of Bids:
.1 Inspection Fees and Permits
.2 Government Fees.
.3 Licenses.

Additionally, the Contractor shall:
.1 Ensure that no Work whatsoever is undertaken which is conditional on permits, approvals, guarantees, until certain that all conditions necessary to obtain these are met. No time extensions will be allowed by the Owner for obtaining necessary permits.
.2 Report to the Consultant in writing, any condition which would prohibit granting of any permit or approval before any Work affecting such items is commenced.

Obtain all "Certificates of Occupancy" and "Development Completion Certificate" or "Certificate of Approval" such as may be issued by the building, plumbing, electrical, or zoning, etc., departments or by any other inspection authorities having jurisdiction over the site.

Copies of all Permits (Mechanical, Plumbing, Gas, Sprinkler and Electrical etc.) are to be passed to the Consultants, once received.

.13 Give required notices.

.14 Coordinate the whole of the Contract work to provide a complete project.

.15 Keep on the job during working hours, as large a force of labour as can be used with efficiency and with due regard to both speed in completion of the work and economy in the execution thereof.

.16 Enforce strict discipline and good order among employees. Do not employ on the work anyone not skilled in the work assigned to him. On order of the Consultant, discharge from the work any person or persons who may appear in the opinion of the Consultant to be incompetent or act in an improper manner.

.17 Coordinate with any Owner's supplied contractors.

1.3 Contract Time

.1 Time and all time limits stated in the Contract documents are of essence to the Contract. Perform all work expeditiously and with adequate forces to achieve total completion of work within the Contract time.

.2 Make every effort to complete the external building envelope work before cold weather prevents or delays completion. Place emphasis on completing roofing, exterior walls and site work before the winter season.

.3 Completion of work is assumed to mean completion of all deficiencies, removal of Contractor's temporary facilities and equipment.

1.4 Work Sequence

.1 Coordinate Progress Schedule and coordinate with the County Occupancy during construction.

.2 Commence Work no later than 5 days after contract award.

.3 Project must achieve substantial completion within the time period as specified in the Supplementary conditions.

1.5 Regulatory Requirements

.1 Perform Work in accordance with current version of the Alberta Building Code (ABC), including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.

.2 Comply with ordinances, rules, regulations, order and other legal requirements of public authorities which bear on the performance of the Work. The Contract Documents do not create any release from compliance with the same.

1.6 Notices, License and Certificates

.1 Promptly submit written notice to the Consultant of observed variance of contract documents from legal requirements of the authorities having jurisdiction over site of operation and notices which relate to the Work, to the preservation of public health and to construction safety. Make appropriate modifications to contract documents as required.

.2 Obtain and pay for licenses, certificates and approvals required by authorities having jurisdiction and the Contract Documents.

1.8 Requests for Information (Rfl's)

.1 Should the successful General Contractor or sub-contractors require clarification or additional information regarding the intent of the contract documents, a Request for Information (RFI) is to be submitted by the General Contractor. Where possible, the RFI is to include the Contractor's proposed solution to the identified problem.

.2 All RFI's are to be reviewed by the Contractor, prior to issuing to the Consultants, to ensure the information requested is not contained within the Contract Documents. It is the Contractor's responsibility to coordinate and thoroughly review the Drawings, Specifications, Schedules and all information, including cross referencing all trade scopes. The Consultants will return RFI's unanswered if the information being requested is already in the contract documents, and the Contractor has not carried out a due diligent review first. The Consultants will not tolerate being inundated with time consuming and unnecessary RFI's.

.3 The Contractor shall thoroughly review the contract documents in a timely manner and ensure that RFI's are submitted with adequate time to allow for a response. The Consultants will not accept unrealistic requested return dates for RFI responses but will endeavor to respond to RFI's as quickly as possible. The Contractor must however allow 10 (Ten) working days' minimum for a response from the Consultants.

.4 Delay Claims and Requests for Extra's resulting from a contractor's inability or failure to submit RFI's in a timely manner will not be accepted.

.5 All RFI's are to be numbered consecutively by the Contractor.

1.9 Contractor's Use of Premises

.1 Contractor shall have complete and exclusive use of Work Area for performance of Work, the County will occupy adjacent areas to Work Area.

.2 Assume full responsibility for protection and safekeeping of products under this Contract.

.3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract or for delivered equipment or materials not required immediately on site.

.4 Allow for temporary relocation of services and equipment to accommodate Work.

.5 Provide secure hoarding as required.

.6 Do not unreasonably encumber the site with material or equipment.

1.10 The County Occupancy

.1 The County will not occupy the building during demolition period.

.2 The Contractor is to coordinate with the County prior and during construction, to ensure there is minimum interruption for all work that may disrupt regular operations.

1.11 Work Schedule

.1 Authorization of work:
.1 No work must commence until the Contractor has a signed and approved County's "Notice to Proceed" form documentation from the County authorizing them to perform work.

.2 Work performed as requested by persons other than the County, or work outside of the contractual agreement, must be done at the Contractor's own expense.

.3 Emergency work:
.1 For emergency work only, the request will be made by telephone with the formal request to follow in writing.

.4 Method of Payment:
.1 When submitting invoices show cost breakdowns, labour, and materials in details, and supplier's invoices for all single items and groups of items.

1.12 Emergency Repair Service

.1 The Contractor will provide a telephone number at which his representative (Site Supervisor) maybe contacted 24 hours per day and 7 days per week, for the purpose of providing emergency repair service.

1.13 Replacement of Components

.1 Permanent replacement of components: will be factory approved parts and of the same make/model, value rating as the defective ones being removed.

.2 Any components replaced in a temporary emergency situation having a make/model, value rating than the original defective component will be replaced as soon as possible with the required named component, unless the alternate part is approved, in writing, by the County.

1.14 Removal of Material and Equipment

.1 The Contractor is responsible for all materials and equipment in the job site. A full demolition is required.

1.15 Workmanship

.1 All work must be executed in a workmanlike manner and must present a neat and finished appearance when completed. The Contractor must keep experienced personnel on the job.

.2 Work area will be kept neat, clean and safe at all times.

1.16 Cooperation

.1 The Contractor must familiarize himself with the building in which work is requested and must cooperate with the occupants of the building so that their work will not conflict with normal operations.

1.17 Cleaning

.1 The Contractor must be responsible for the protection and maintenance of his work until job has been completed and accepted by the County. He must be responsible for the sorting of his material, inside and out of the building and must clean up all refuse caused by his work.

END OF SECTION

1. GENERAL

1.1 Related Sections

.1 Section 01 32 16 - Construction Progress Schedule - Bar (Gantt) Chart

.2 Section 01 56 00 - Temporary Barriers and Enclosures

1.2 Cypress County Operations

.1 Occupied County facilities are to be considered active operational zones. All movements outside of the Limit of Construction area, as indicated in this Section 1.6 Special Requirements, are restricted and must be approved by the County.

1.3 Access and Egress

.1 Maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant Municipal, Provincial, National and other regulations.

1.4 Use of Site and Facilities

.1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with County to facilitate work as stated.

.2 Maintain existing services to building and provide for personnel and vehicle access.

.3 Where security is reduced by work provide temporary means to maintain security.

.4 Provide sanitary facilities for use by Contractor's personnel. Keep facilities clean.

.5 Closures: protect work temporarily until permanent enclosures are completed.

1.5 Existing Services

.1 Notify, the County of intended interruption of services and obtain required permission.

.2 Where Work involves breaking into or connecting to existing services, give the County 10 working days of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions to a minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.

.3 Provide for pedestrian and vehicular traffic.

.4 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.6 Special Requirements

.1 Work Hours are Monday to Saturday from 08:00 to 17:00 hours. The County to approve work on Sundays and Statutory holidays.

.2 Carry out noise generating Work Monday to Friday from 08:00 to 16:00 hours. The County to approve work on Saturdays, Sundays and Statutory holidays.

.3 Submit schedule in accordance with Section 01 32 16- Construction Progress Schedule - Bar (Gantt) Chart.

.4 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, temporary barriers and enclosures, traffic and security regulations.

.5 Keep within limits of work and avenues of ingress and egress.

.6 Ingress, egress and parking of Contractor vehicles and workers at site is limited to the Limit of Construction Area unless approved by the County.

.7 Deliver materials to the site Monday to Friday between 08:00 to 17:00 hours unless otherwise approved by the County.

1.7 Building Smoking Environment

.1 Comply with the County's smoking restrictions.

END OF SECTION

1. GENERAL

1.1 Cash Allowances - Administration

.1 Refer to CCDC 2 - 2008, GC 4.1, and Supplementary Conditions, for contract aspects of Cash Allowances.

.2 The General Contractor will carry the Cash Allowances stated within this specification section. Cash Allowances specifically noted for individual trade scope sections shall be carried by the applicable trade contractor.

.3 The *Contract Price*, and not the cash allowances, includes the *Contractor*'s cost of administrating, supervising, overheads and profit in connection with such cash allowances.

.4 The adjustment to the Contract for Cash Allowance expenditures by the General Contractor will be made on the final total balance of all Cash Allowances, at the end of the contract.

1. Where the total cost of the combined *Work* under all of the cash allowances exceeds the combined amount of the allowance, the *Contractor* shall be compensated by change order, for the excess incurred and substantiated. Overhead and profit markups (applicable to Change Orders) shall be applied to the over expenditure only.
2. Where the total cost of the combined *Work* under all of the cash allowances is less than the amount of the combined allowance, the *Owner* shall be credited by change order for the unexpended portion of the combined cash allowance.
3. Contractor overhead and profit adjustments will not be made on individual over-expended Cash Allowances during the course of the Contract.

.5 The Consultant reserves the right to increase the indicated scope of any cash allowance work, or add work which involves normal subcontract administration, after award of contract.

.6 The Consultant reserves the right to modify, redefine or reassign the scope of any cash allowance work within the total cash allowance budget available.

1.2 Cash Allowances

.1 The General Contractor is to include in the Contract Price the Cash Allowance amount of $23,000.00 This is the total of all cash allowances for the items listed as follows:

.1	Abatement	$16,000.00
.2	Utility Abandonment	$ 7,000.00

1.3 Performance of Work Covered by Allowances

.1 All hazardous materials abatement will be paid as a cash allowance and will include the cost of hiring an environmental consultant to oversee and direct the abatement process to ensure all regulations and rules are followed. Square One Consulting completed a hazardous materials assessment of the building and is familiar with the site.

.2 Disconnection and abandonment of the existing utilities: The contractor will be required to coordinate with the County to define the exact scope and materials needed for the abandonment.

If not specified, the Consultant will determine the manner in which prices for work covered by allowances will be obtained.

Overhead and profit (markups) on Cash Allowance items are to be calculated at the end of the Contract. The total actual costs can be calculated against the total sum of all Allowance.

When requested or specified, assist the Consultant by identifying potential suppliers and subcontractors and by obtaining prices for work covered by Allowances.

Changes to the structure of the Allowance distribution are at the discretion of the Owner without further compensation.

1.4 Contractor's Responsibilities

.1 Contractor's responsibilities for Work covered by allowances shall be the same as for other Work of this Contract.

.2 The contractor will submit fully itemized sub-contractor's breakdowns of all Cash Allowances, for review by the consultants.

.3 On notification in writing of selection of Supplier or Subcontractor by Owner, execute purchase agreement with designated supplier or enter into a subcontract or amend existing subcontract with designated Subcontractor.

END OF SECTION

1.1 Intent

.1 Read this Section in conjunction with the conditions governing changes in the Work and valuation of changes in the General Conditions of Contract.

.2 The General Conditions of Contract and the Supplementary Conditions of Contract provide for valuation of changes by three different methods: lump sum, unit price, and cost plus. This Section applies to the lump sum method only.

.3 By submitting individual trades bids to the bidding General Contractor for this tender submission, it is construed that the sub-contractors agree to all of the Change Order Procedure Requirements, as outlined in these documents.

.4 A full cost breakdown is required to substantiate or justify all *Contract Price* adjustments. This includes number of hours, number of staff involved and their hourly labour costs, in addition to a complete bill of materials, including identification of each specific item and a corresponding quantity.

The intent is for CCO's to be priced using the "Direct Labour Cost" (Base Wage), as defined below, with the "Payroll Burden" then added. This will give the "Hourly Total Labour Cost". Note: The "Hourly Total Labour Cost" is not a standard "Charge Out Rate".

A 'Charge Out Rate' is defined as a rate that includes a payroll burden, overhead and profit markups. As defined in the Supplementary Conditions, markups are applied to quotes separately, therefore, the Consultants will not generally allow "Charge Out Rates" to be used.

Hours assigned to individual tasks should not be rounded up to a full hour, when the time is difficult to justify (i.e. a 15-minute task being changed out at a full hour). It is expected that hours are broken down correctly, at a minimum into quarter of an hour blocks.

.5 The intent is that Site Supervisory Staff (such as, but not limited to: Site Superintendent, Site Foreman, Mechanical and Electrical Foreman), Project Managers, Project Administrators, Safety Officers and any other office staff, are expected to be available for overseeing and administering all work on site for the duration of the contract period. This includes overseeing an unspecified number of additions by Change Orders. The Contractor and major Sub-Contractors (Mechanical and Electrical) are responsible to ensure that an adequate allowance in made in their own general conditions, to cover the project administration duration. A nominal extra is allowed for in the overheads on Change Orders.

.6 The intent is that Site and Office vehicles/trucks will not be allowed to be charged for in Change Orders. Our expectation is that these vehicles are normally always available for the staff's use, and therefore will not be allowed to be charged as extras on Change Orders. The Contractor is responsible to ensure that an adequate allowance in made in their own general conditions, to cover vehicle usage for the duration of the contract period. A nominal extra is allowed for in the overheads.

.7 Travel hours and mileage can only be charged when exceeding the distance specified below, in one direction. The expectation is that this distance is considered to be within the sphere of an acceptable working/commuting travel distance.

.8 After the Permits Applications (i.e. Mechanical/Plumbing and Electrical) for the project have been submitted by the Contractor/Sub-Contractor, no additional permit fee costs will be accepted on Change Order quotes, without an invoice from the Authority having Jurisdiction, indicating the Fee increase is due to the changes proposed. The intent is to ensure these are justifiable fees that do get passed onto the Authority having Jurisdiction.

1.2 Definitions

.1 "Direct Cost" means actual costs of material and labour as used in the valuation of changes article in the General Conditions of Contract. Direct Cost is the sum of costs directly related to or necessarily and properly incurred by Contractor, Subcontractors and Sub-subcontractors in the performance of a change in the Work. Direct Cost shall exclude Overhead Cost and profit but shall include:

.1 Materials Cost,
.2 Total Labour Cost,
.3 Travel and Subsistence Cost,
.4 Temporary Work Cost,
.5 Construction Equipment Cost,

.2 "Material Cost" means cost of all Materials, including transportation and storage thereof. All rebates, refunds, returns from sale of surplus Materials, and trade discounts other than prompt payment discounts, shall be credited to the Contract Sum.

.3 "Total Labour Cost" means sum of direct labour cost and payroll burden cost.

.4 "Direct Labour Cost" means the base wage costs of employees, excluding payroll burden cost. If required by the Consultant, submit verification that the noted wage rates submitted are in fact paid to workmen. The Consultants may check the submitted “Direct Labour Cost” rates, against industry standard reference tables.

.5 "Payroll Burden Cost" means actual costs paid by the employer for statutory charges and benefit costs additional to Direct Labour Cost. It includes the employer’s contributions to Canada Pension Plan, Employment Insurance, Workers' Compensation Board, vacation pay, statutory holiday pay, health and wellness plan, and pension plan. It also includes the actual employer paid incentives for expendable and non-expendable small tools with a value of less than $500.00, safety and protective equipment, education and training, and other payroll costs which are hourly wage dependent.

6 "Travel and subsistence cost" means travel and subsistence costs incurred by employees when working 125 kilometres or more commuting distance from their normal place of employment. Travel and subsistence costs shall not exceed the following:

- $0.50 per km for travel
- $115.00 each day per person for accommodation
- $35.00 each day per person for subsistence

.7 "Temporary Work Cost" means cost of temporary structures, facilities, services, controls, and other temporary items used in the performance of a Change in the Work, including maintenance, dismantling and removal, less any residual value after dismantling and removal.

.8 "Construction Equipment Cost" means the cost of rented or owned equipment, including cost of loading, transportation, unloading, erection, maintenance, fuel, dismantling and removal. This excludes small tools customarily used to carry out the Work by workers and valued at less than $500.00.

Plant and equipment (bobcat, lifts, etc.) already on site during general construction shall be made available for use in Change Orders, at no extra cost. The Contractor is to confirm all plant and equipment on site, which trade it belongs to its delivery date to site, and expected departure date. A Schedule of Site Equipment in the form of Document 01 23 63B, is appended to this Section.

If the consultants deem to accept equipment costs, the costs shall be based on the actual rental rates the contractor is paying. i.e. The rental company’s hourly or daily rate will not be accepted, if the contractor is renting on the rental company’s weekly or monthly rate. The acceptable hourly, daily or weekly rate applied will be determined as a proportion of the actual contractor’s rental rate, which is to be confirmed (with backup documents).

Equipment which is rented is not directly owner by the Contractor or Sub-Contractor, and is therefore considered as sub-contracted. A reduced markup allowance, as defined by the Supplementary Conditions, will only be allowed to be applied to rental equipment.

.9 "Overhead Cost" means Contractor's, Subcontractors' and Sub-subcontractors' costs, including:

.1 All indirect office and site costs including, but not restricted to: sub-trade attendance; site offices; storage compounds, etc.; transportation; garbage removal; separation of waste materials for recycling; Site superintendence and other supervisory personnel; first aid; time keeping; watching and security; temporary services including heat, light, power, telephone and fax, water, etc.;

.2 Operation and maintenance of head offices, branch offices, administration at head offices, branch offices, and site offices, including office administration for the following; processing correspondence, submittals, shop drawings, samples, changes, etc.; planning; estimating; costing and accounting; payroll; technical staff; and statutory fees; scheduling; consumables; material handling; clean-ups; job targeting and market enhancement recovery funds; union dues and charges; certificates and licenses in connection with extra work, inspections by authorities having jurisdiction; and any all unallocated costs.

.3 Bonding and Insurance,

.4 Warranty and Safety

.5 Financing and other bank charges,

.6 Buying organization, corporate tax,

.7 Expendable and non-expendable miscellaneous small tools, including maintenance thereof,

.8 Consumables & Miscellaneous items, such as screws, ty-raps, tape, glue, wire markers, marrettes (wire nuts), nuts, bolts, washers, lock rings, inserts, clamps, etc. that can't accurately be assigned a dollar value. These items are generally used in the fixing of other materials, therefore additional hours should not be assigned either.
.9 All costs related to Site Staff and Office Staff Vehicles
.10 Administrative Fees for the administration of all paperwork related to a change in the work.
.11 Hoisting and Rigging.
.12 Detailing and Shop Drawing drafting.
.13 As-Built drawing markups
.14 Recruitment and training of on-site staff, and
.15 all other costs not defined as direct costs.

1.3 Schedule of Labour Rates

.1 Submit to Consultant for approval, within seven (7) days of receipt of notice of acceptance of bid, and prior to issuing the contract, a Schedule of Labour Rates in the form of Document 01 23 63A, appended to this Section.

.2 Labour Rates stated in Schedule shall be the hourly labour rates that will be applied when estimating increases and decreases in cost resulting from changes in the Work. Assume that work will be performed during regular working hours, not premium time.

.3 Approved schedule of Labour Rates will be used by Consultant solely for evaluating Contractor Proposals for changes in the Work. Nothing specified herein, nor the submission of a Schedule of Labour Rates by Contractor, shall be construed to mean that the Consultant has established, or will establish, minimum wages or benefits applicable to the Work, other than those required by law.

.4 Include all trades that will be employed in the Work, including trades employed by Subcontractors and Sub-subcontractors.

.5 Provide a breakdown indicating hourly labour rates for Direct Labour Cost, Payroll Burden Cost, and the resulting total labour cost for journeymen, apprentices, foremen and other applicable classifications within each trade.

.6 Labour rates stated in Schedule shall be consistent with rates that will actually be paid in the normal performance of the Work, during regular working hours, and shall not exceed the following:

.1 Where collective agreements apply:
.1 rates for Direct Labour Cost shall not exceed rates established by collective agreements, and
.2 rates for Payroll Burden cost shall not exceed rates established by collective agreements and statutory charges.

.2 Where collective agreements do not apply:
.1 rates for Direct Labour Cost shall not exceed rates prevailing in the locality of the Project, and
.2 rates for Payroll Burden Cost shall not exceed 40% of rates for Direct Labour Cost.

.7 The Consultant may request verification that the noted wage rates (direct labour costs) are in fact paid to workmen before payment for the work is certified."

.8 Consultant's approval of rates provided in the Schedule of Labour Rates will be conditional upon compliance with the foregoing requirements. Approval will be based on most current information available to Consultant on Alberta construction industry wages and benefits.

.9 A Contractor may request an amendment to an approved rate stated in the Schedule of Labour Rates, if and when required on account of a change in the rate that will actually be paid in the normal performance of the Work. If Contractor can prove to Consultant's satisfaction that a different rate will actually be paid, Consultant may, at his sole discretion, approve such a change in rate.

1.4 Change Order Procedures - Lump Sum Method of Valuation

.1 Consultants will issue a "Contemplated Change Order" to the Contractor.

.2 Contractor shall submit a Contractor Proposal stipulating:
.1 a lump sum increase, decrease, or no change in the Contract Price, and

.2 an increase, decrease, or no change in the Contract Time, on account of the proposed change in the Work.

.3 Include in Contractor Proposal a detailed breakdown of lump sum increase or decrease, indicating Contractor's, and where applicable Subcontractors' and Sub-subcontractors':
- .1 itemized direct costs applicable to the proposed change in the Work, and
- .2 applicable amounts for overhead and profit, in accordance with percentages specified in the Supplementary Conditions.

Do not include costs that would otherwise be incurred in the normal performance of the Work.

.4 Include in detailed breakdown of Contractor Proposal a further breakdown of the total labour cost component indicating, for each applicable trade and trade classification, the labour rate(s) and the number of hours from which the total labour cost is derived.

.5 Include in detailed breakdown of Contractor Proposal only those labour rates included in Schedule of Labour Rates and previously approved by Consultant, in writing, unless the extra work cannot be performed during regular working hours and Consultant has given approval, in writing, for premium time labour rates.

.6 “Overhead costs” and “profits” are to be a “percentage” as determined in the supplementary conditions.

.7 Include in the detailed breakdown of Contractor’s proposal, all saving and credits applicable to the proposed alterations.

.8 Upon Consultant's approval and acceptance of Contractor’s proposal, a "Change Order" will be issued to Contractor.

END OF SECTION

Name				
Address				
City or Town	Province	Postal Code	Telephone	Fax

Project

(Project Name and Location)
Project ID

This Schedule of Labour Rates is submitted in compliance with the requirements of Section 01 26 63 – Change Order Procedures of the Contract Documents.

It is understood that:

.1 This Schedule of Labour Rates is subject to Consultant approval and will be used solely for evaluating Contractor Proposals for changes in the Work.

.2 The Consultant has not established, and does not intend to establish, minimum wages or benefits applicable to the Work, other than those required by law.

.3 The Consultant may request verification that the noted wage rates (direct labour cost) are in fact paid to workmen before payment for the work is certified."

Schedule: See next page

Labour rates for trades employed by:
General Contractor (when using own forces).

Name of Trade	Trade Classification	Direct Labour Cost ($/hour)	Payroll Burden Cost ($/hour)	Total Labour Cost ($/hour)

We hereby declare that the above stated direct labour rates are, to the best of our knowledge, the rates that will actually be paid in the normal performance of the Work, during regular hours, and do not include any overhead cost or profit.

Signature	Name of Contractor	Date

Labour rates for trades employed by:
Subcontractors and Sub-Contractors.

Name of Trade	Trade Classification	Direct Labour Cost ($/hour)	Payroll Burden Cost ($/hour)	Total Labour Cost ($/hour)

We hereby declare that the above stated direct labour rates are, to the best of our knowledge, the rates that will actually be paid in the normal performance of the Work, during regular hours, and do not include any overhead cost or profit.

Signature	Name of Subcontractor / Sub-subcontractor	Date

LIST OF EQUIPMENT ON SITE

This Schedule of Site Equipment is submitted in compliance with the requirements of Section 01 26 63 – Change Order Procedures of the Contract Documents

List below the plant and equipment (bobcats, lifts, etc.) that are stored on site, and will be available for the work specified in the Contract Documents:

List all Equipment / Machinery items expected to be on site for longer than a week.

NAME OF EQUIPMENT (Type, Make & Model)	TRADE RESPONSIBLE FOR THE EQUIPMENT	ARRIVAL DATE ON SITE	EXPECTED REMOVAL DATE FROM SITE	OWNER OF THE EQUIPMENT (If Rented, also confirm rental costs)

1. GENERAL

1.1 Related Sections

.1 Section 01 33 23 – Submittals, Shop Drawings, Product Data and Samples

1.2 Definitions

.1 Activity: Element of Work performed during the course of a project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.

.2 Bar Chart (Gantt chart): graphic display of schedule related information. In typical bar chart, activities or other Project elements are listed down the left side of the chart, dates are shown across the top, and activity durations are shown as date-placed horizontal bars. Generally, Bar Chart should be derived from commercially available computerized project management system.

.3 Baseline: original approved plan (for project, work package or activity), plus or minus approved scope changes.

.4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (Gantt) Chart submission.

.5 Duration: number of work periods (not including holidays or other non-working periods), required to complete activity or another project element. Usually expressed as workdays or workweeks.

.6 Master plan: summary-level schedule that identifies major activities and key milestones.

.7 Milestone: significant event in project, usually completion of major deliverable.

.8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy project objectives. Monitoring and Control process involves using Project Schedule in executing and controlling activities and is used as the basis for decision making throughout the project life cycle.

.9 Project Planning, Monitoring and Control System: overall system operated by the City. Representative to enable monitoring of project work in relation to established milestones.

1.3 Requirements

.1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.

.2 Plan to complete work in accordance with prescribed milestones and time frame.

.3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.

.4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined terms of completion are of essence of the contract.

1.4 Submittals

.1 Submit to the Consultant within 10 working days of Award of Contract, Bar (Gantt) Chart and Master Plan for planning, monitoring and reporting of project progress.

.2 Submit Project Schedule to the Consultant within 5 working days of receipt of acceptance of Master plan.

.3 Submit Project Schedule with each Progress Claim review for approval or as otherwise requested by the Consultant – Project Schedule updated as indicated in this Section 1.7 Project Schedule Reporting.

1.5 Master Plan

.1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).

.2 The Consultant will review and return revised schedules within 5 working days.

.3 Revise impractical schedule and resubmit within 5 working days.

.4 Accepted revised schedule will become Master Plan and be used as the baseline for updates.

1.6 Project Schedule

.1 Develop detailed Project Schedule derived from Master Plan

.2 Ensure detailed Project Schedule includes as minimum milestone and activity types.

1.7 Project Schedule Reporting

.1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.

.2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipating delays and impact with possible mitigation.

1.8 Project Meetings

.1 Discuss project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.

.2 Weather related delays with their remedial measures will be discussed and negotiated.

END OF SECTION

1. GENERAL

1.1 Intent

.1 Submit to the Consultants for review, submittals, shop drawings, product data and samples called for by the Contract Documents and for such other items as the Consultant may reasonably request.

1.2 Administration

.1 Submit to the Consultant submittals listed in the Specifications for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Do not proceed with Work affected by submittal until review is complete.

.3 Review submittals prior to submission to the Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.

.4 Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.5 The Contractor's responsibility for errors and omissions in the submissions are not relieved by the Consultants review of submittals. The Contractor's responsibility for deviations in the submissions from the requirements of Contract Documents is not relieved by the Consultant’s review.

1.3 Shop Drawings

.1 The term “Shop Drawings” means technical data specially prepared for work of this Contract; including drawings, diagrams, illustrations, performance curves, data sheets, schedules, performance charts, brochures templates, patterns, reports, calculations, instructions, measurements and similar information, or other data not in standard printed form.

.2 Indicate all materials, methods of construction and attachment or anchorage, erection diagrams, connection, explanatory notes and other information necessary for completion of the Work.

.3 Present shop drawings in a clear and thorough manner to appropriately illustrate the work.

.4 Provide shop drawings for each trade as one complete set. Do not submit shop drawings in a "piece meal" fashion, i.e. provide miscellaneous metal shop drawings for different handrails at different times.

.5 Identify field dimensions on drawings.

.6 Identify shop drawings by appropriate references to sheet, detail, schedule or room numbers.

.7 Submit digital copies (pdf format) of shop drawings for each requirement requested in the Specification Sections, and as the Consultant may require. If digital copies are not available, submit four (4) prints.

.8 All shop drawing measurement units are to be in Metric. Drawings in Imperial units will not be reviewed, and will be returned for resubmission in Metric.

.9 Leave a clear space of 100 mm x 75 mm on each sheet of shop drawings for placement of the Consultants review stamp, if required.

1.4 Product Data

.1 Product data means standard printed information describing materials, products, equipment and systems; not specially prepared for work of this Contract, other than the designation of selections.

.2 Clearly mark product data to identify products.

.3 Manufacturer's standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and descriptive data will be accepted in lieu of shop drawings provided that:
.1 information not applicable to work of this Contract is deleted, and
.2 standard information is supplemented with information specifically applicable to the work of this Contract.

.4 Submit digital copies (pdf format) of product data sheets or brochures for requirements requested in the specifications sections, and as the Consultant may reasonably request, where shop drawings will not be prepared due to standardized manufacture of product. If digital copies are not available, submit four (4) prints.

1.5 Samples

.1 Samples means cuts or containers of materials or partial sections of manufactured or fabricated components which are physically identical to products proposed for use and which establish minimum standards by which the work will be judged.

.2 Label samples as to origin and intended use in the Work.

.3 Submit for review samples as requested in the respective specification Sections.

.4 Deliver samples prepaid to the Prime Consultant's business address.

.5 Do not undertake any work until samples have been reviewed and accepted by the Consultant. The accepted samples will become the minimum standard acceptable.

1.6 Submittal Preparation

.1 The Contractor is to review, date and sign, shop drawings, product data and samples, prior to submission to the Consultant. This review represents that necessary requirements have been determined and verified, or will be.

.2 Determine and verify:
.1 Field measurements.
.2 Field construction criteria.
.3 Catalogue numbers and similar data.
.4 Conformance with Contract Documents.

.3 Check and coordinate each submittal with requirements of work and Contract documents. Individual drawings will not be reviewed until all related shop drawing and product data are available.

.4 Notify the Consultants, in writing, on the submittal and at the time of submission, of deviations from requirements of Contract Documents. No acceptance shall be inferred or assumed otherwise.

.5 Do not copy the contract documents for the purpose of shop drawing production, unless directed otherwise by the Consultant.

.6 All submittal measurement units are to be in Metric. Submittals in Imperial units will not be reviewed, and will be returned for resubmission in Metric

1.7 CAD Drawings

.1 For the purpose of aiding the production of shop drawings only, the Consultants may provide within reason, and at a nominal cost, CAD copies of the contract working drawings. Refer to Specification Section 01 21 10.

1.8 Submission Requirement

.1 All Shop drawings submissions are to be reviewed by the contractor, who will make revisions and comments, prior to forwarding onto the Consultants. If in the Consultants opinion, it is deemed that shop drawings have not been reviewed by the Contractor, they will be returned for the Contractor to make revisions, comments and answer questions.

.2 Make submittals sufficiently in advance of the date that reviewed submittals will be required and in

such sequence, as to cause no delay in the Work. The General Contractor is to allow the Consultants 10 working days to return submittal reviews for distribution.

.3 Accompany submittals with transmittal letter, containing:
- .1 Date.
- .2 Project title and number.
- .3 Contractor's name and address.
- .4 Number of each shop drawing, product data and sample submitted.
- .5 Other pertinent data.

.4 Submittals shall include:
- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name of:
  - .1 Contractor.
  - .2 Subcontractor.
  - .3 Supplier.
  - .4 Manufacturer.

.5 Name of detailer when details not prepared by Contractor, sub-contractor, or supplier.
- .1 Contractor's stamp, initialed or signed, certifying review of submittal, verification of field measurements, and compliance with Contract Documents.

.6 Make corrections or changes as the Consultant may require. Rejected submittals are to be resubmitted with corrections, as specified for initial submission.

.7 Adjustments made on shop drawings by the Consultant are not intended to change the Contract Price.

1.9 Responsibility for Errors, Omissions and Deviations

.1 The Consultant’s review of submittals does not relieve Contractor from responsibility for errors and omissions, nor deviations from requirements of the Contract Documents.

.2 The Consultants will review Shop drawings for the sole purpose of ascertaining general conformity with design. The Contractor is responsible for dimensions, fabrication and construction methods and coordination of sub-trades. Responsibilities for detail design of components and errors and omissions on shop drawings remain with the Contractor.

1.10 Reproduction of Submittals

.1 Contractor shall reproduce at his expense the number of copies required for performance of the Work.

1.11 Registered Professional Engineer's Confirmation Letter

.1 For all Sections of Work which require the Contractor or Subcontractor to provide professional engineering services, the Contractor’s or Subcontractor’s Registered Professional Engineer shall design and engineer components for the project which the Contractor’s or Subcontractor’s Registered Professional Engineer is responsible for, and shall sign and seal on shop drawings and supporting documentation. The Contractor’s or Subcontractor’s Registered Professional Engineer shall review all fabrication and installation of such components. At completion of the Work, each of the Contractor's and/or Subcontractor’s Registered Professional Engineers shall provide to the Consultant, a letter confirming that:
- .1 All civil, structural, architectural, mechanical, electrical and other components are fabricated and erected in conformance with their design.
- .2 All components are capable of supporting all the loads or capable of performance specified or indicated on the reviewed shop drawings.
- .3 All changes to the contract documents have been reviewed and are acceptable.
- .4 All components have been designed, fabricated and installed to substantially comply with the applicable requirements of the current Alberta Building Code.
- .5 All components have been designed and installed to conform with the seismic restraint requirements of the current Alberta Building Code.
- .6 The fabrication and installation of such components has been reviewed and

accepted by the Contractor's and/or Subcontractor's Registered Professional Engineers.

.7 All components are fabricated and erected in accordance with the reviewed shop drawings.

END OF SECTION

1. GENERAL

1.1 Related Sections

.1 Section 01 35 35 - Fire Safety Requirements
.2 Section 01 35.43 – Environmental Procedures

1.2 Construction Safety Measures - General

.1 All Contractors and their personnel shall be familiar and comply with this section and its requirements.

.2 Observe construction safety measures of Alberta Building Code latest edition, National Fire Code of Canada latest edition, Workers' Compensation Board, Alberta Occupational Health and Safety Act, Regulation and Code, and in any situation of conflict or discrepancy, the more stringent requirements shall apply.

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.3 The Contractor will do what is reasonably practicable to ensure compliance with the Alberta Occupational Health and Safety Act, Regulation and Code.

.4 The Contractor shall ensure that any employer on a work site is made aware of any existing or potential work site hazards that may affect that employer's workers through the use of a hazard assessment process.

.5 The Contractor shall ensure effective communication in relation to health and safety at the worksite by conducting regular toolbox meetings with all affected employers, contractors, workers and suppliers. Documentation of these meetings should be available for review as applicable.

.6 The Contractor will be acting as the 'Prime Contractor' for the contract and will certify this agreement in writing with the County.

7. Any regulatory violation by the 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 County.

1.3 Emergency Response

.1 Evacuation procedures need to be established and communicated to all workers. These procedures can include but are not limited to:

- A warning system
- Safe evacuation procedures, including transportation for an injured person
- Shutting down of work, including electrical equipment
- Information regarding hazardous substances located on site
- Provision of firefighting and rescue equipment
- Display of evacuation procedures in appropriate locations

.2 An effective and reliable means of communication should be established between all work areas.

.3 The emergency procedures must clearly explain how to respond in various types of emergencies.

.4 Contact numbers for emergency services should be prominently displayed.

.5 The Contractor shall ensure that the appropriate type and volume of fire extinguishers are available at the worksite.

1.4 Equipment and Tools

.1 County owned equipment, tools, devices, and machinery, including Personal Protective Equipment will not be provided to the Contractor.

1.5 First Aid Equipment

.1 Contractors will ensure that required first aid services, equipment and supplies are available at the work site, based on Alberta OH&S requirements.

.2 First Aid staff should be familiar with the specific conditions and hazards at the site and the types of injuries that are likely to occur.

.3 Signage for all first aid equipment is to be available and visible.

1.6 General

.1 Smoking is only permitted in designated areas.

.2 Alcohol or drug use is not permitted.

.3 Sufficient lighting must be provided to allow safe movement around the workplace.

.4 No pets are allowed in the construction zone.

1.7 Housekeeping

.1 Good housekeeping practices are essential to ensure a safe workplace.

.2 Entry, exits and access routes in the workplace must be kept clean and clear of materials and waste.

.3 Contractors will ensure that all waste or excess materials are collected, stored and disposed of in an appropriate and timely manner.

.4 The Contractor shall ensure that a general cleanup of the site is done at the completion of the project including but not limited to:

- All garbage removed
- Mud and debris removed
- Waste removed or recycled
- Propane tanks for heating services
- Entry and exit ramps
- Fall protection anchors

1.8 Incident Reporting and Investigation

.1 The Contractor shall report to the County, as soon as possible, all incidents and injuries and provide copies of the Incident Report and Investigation.

.2 Serious Incidents and Injuries must be reported to Alberta Occupational Health and Safety immediately. Notification must be made to the County and reports provided upon completion of the investigation.

.3 Potentially Serious Incidents (PSI) must be reported to Alberta Occupational Health and Safety Act at https://psi.labour.alberta.ca. Copies of documentation will be provided to the County. .

1.9 Overloading

.1 Ensure no part of work is subjected to loading that will endanger its safety or will cause permanent deformation

1.10 Signage

.1 The construction area work limits shall be defined and marked with signage prior to work commencing. The specific requirements of the area work limits will be under the direction of the County.

.2 Where there is a risk of falling objects, exclusions zones need to be created to prevent unauthorized people entering the work area and being put at risk.

1.11 Traffic

.1 The worksite should be arranged so that traffic is able to move safely. Pedestrian and vehicle pathways need to be kept free of obstruction and the movement and speed of vehicles should be managed to minimize the risk of injury to pedestrians and operators.

.2 Contractors shall post applicable traffic signage related to the construction project. This includes but is not limited to: directional signage, speed limits and parking.

.3 Traffic plans should detail preferred travel routes for vehicles, including points to enter and leave the workplace, haul routes for debris or work materials or traffic crossing another stream of traffic. Fire routes and emergency access routes must be maintained at all times.

.4 Seatbelts are to be worn while driving vehicles or operating equipment.

.5 Distracted driving is not acceptable – no cell phone use while driving vehicles or operating equipment.

1.12 Work Site Safety

.1 The Contractor will provide and maintain a barrier around the construction site to provide a continuous barrier from the general public and all construction activity.

.2 Additional fences are required around the Contractors' equipment storage areas.

.3 All fences must be fully secured and locked during non-working hours.

END OF SECTION

1. GENERAL

1.1 Reporting Fires

.1 Know location of nearest telephone, including emergency phone number.
911

.2 Report immediately all fire incidents to Fire Department as follows:
.1 Telephone- give location of fire, name and address of building and be prepared to verify the location.

1.2 Interior and Exterior Fire Protection and Alarm Systems

.1 Fire hydrants, standpipes and hose systems will not be used for other than fire-fighting purposes unless authorized by Fire Department.

1.3 Fire Extinguishers

.1 Supply fire extinguishers, as scaled by Fire Department, necessary to protect work in progress and contractor's physical plant on site.

1.4 Blockage of Roadways

.1 Advise the Cypress Country Project Manager of any work that would impede fire apparatus response. This includes violation of minimum overhead clearance, as prescribed by Fire Department, erecting of barricades and digging of trenches.

1.5 Fire Precautions

.1 The Cypress County Project Manager is to be advised of all cases involving the use of flame or spark producing devices including heating equipment in or around buildings.

.2 Appropriate hot work permits must be obtained prior to job start up.

1.6 Smoking Precautions

.1 Although smoking is not permitted in hazardous areas, care must still be exercised in the use of smoking materials in non-restricted areas.

1.7 Rubbish and Waste Materials

.1 Rubbish and waste materials are to be kept to a minimum.

.2 Burning of rubbish is prohibited.

.3 Removal:
.1 Remove all rubbish from work site at end of workday or shift or as directed.

.4 Storage:
.1 Store oily waste in approved receptacles to ensure maximum cleanliness and safety
.2 Deposit greasy or oily rags and materials subject to spontaneous combustion in approved receptacles and remove as required in 1.9.6.

1.8 Flammable and Combustible Liquids

.1 Handling, storage and use of flammable and combustible liquids are to be governed by the current National Fire Code of Canada.

.2 Flammable and combustible liquids such as gasoline, kerosene and naphtha will be kept for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing Underwriters' Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires permission of Fire Department. Flammable and combustible liquids are prohibited from being stored within the building.

.3 Transfer of flammable and combustible liquids is prohibited within buildings.

.4 Transfer of flammable and combustible liquids will not be carried out in vicinity of open flames or any type of heat-producing devices.

.5 Flammable liquids having a flash point below 38 ^{0}C such as naphtha or gasoline, will not be used as solvents or cleaning agents.

.6 Flammable and combustible waste liquids, for disposal, will be stored in approved containers located in a safe ventilated area. Quantities are to be kept to a minimum and the County's Project Manager is to be notified when disposal is required.

1.9 Hazardous Substances/Hot Work/Temporary Heat Permits

.1 Work entailing use of toxic or hazardous materials, chemicals and/or explosives, or otherwise creating hazard to life, safety or health, will be in accordance with National Fire Code of Canada.

.2 Obtain from the County's Project Manager "Hot Work" permit for work involving spark-producing equipment, welding, burning or use of blowtorches in buildings or facilities.

.3 Temporary Heating – Temporary heaters shall be stamped as approved by a recognized testing agency (i.e. CDA, CSA, ULC). Only indirect flame type heaters are to be used. Only in exceptional circumstances are torpedo type heaters to be used and they will require 24 hour on site supervision. Heater permits require 24 hours notice and can be obtained from the Department. After normal working hours, callouts for Fire Prevention staff to inspect and issue permits shall be at the contractor's expense.

.4 Heaters are to have an original and legible installation plate affixed stating clearances to be maintained from combustible materials. Stated clearances will be maintained at all times.

.5 Heaters shall be installed by a qualified gas fitter to meet the requirements of the Propane Installation Code or the National Gas Installation Code, whichever is applicable.

.6 All LPG cylinders shall be supported against upset by non-combustible cable or chain. Cylinders shall be protected against damage.

.7 A hot work permit becomes invalid if a heater is moved from the original location for which the permit was issued. A new permit must be obtained.

.8 When Work is carried out in dangerous or hazardous areas involving use of heat provide fire watchers equipped with sufficient fire extinguishers. Determination of dangerous or hazardous areas along with level of protection necessary for Fire Watch is at discretion of the Cypress County Project Manager. Contractors are responsible for providing fire watch service for work on a scale established and in conjunction with the Cypress County Project Manager at pre-work conference.

.9 Where flammable liquids, such as lacquers or urethanes are to be used, proper ventilation will be assured and all sources of ignition are to be eliminated. The Cypress County Project Manager is to be informed prior to and at cessation of such work.

1.10 Questions and/or Clarification

.1 In addition to the above requirements, direct any questions or clarifications to the Cypress County Project Manager.

1.11 Fire Inspection

.1 Site inspections by Fire Department will be coordinated through the Cypress Country Project Manager.

.2 Allow Fire Department unrestricted access to work site.

.3 Co-operate with Fire department during routine fire safety inspection of work site.

.4 Immediately remedy all unsafe fire situations observed by Fire Department or the Cypress County Project Manager.

Part 1 GENERAL

1.1 Related Sections

.1 Section 01 35 35 - Fire Safety Requirements

.2 Section 01 74 19 - Construction Waste Management and Disposal

1.2 Environmental Responsibility

.1 All work under this contract is to be conducted in an environmentally responsible manner and in compliance with applicable environmental legislation, approvals or permits. Awareness of particularly environmentally sensitive areas will be maintained.

1.3 Work Area

.1 Under the direction of the County, define and mark the construction area work limits prior to work commencing.

.2 All work is to be restricted to designated work area, designated access roads and designated ancillary worksites.

.3 The work area will be maintained free from accumulation of debris and waste. The effects of noise, odour, light, dust emissions, and tracking of dirt and mud will be minimized.

.4 If existing monitoring wells or environmental remediation infrastructure is encountered during the work, the County will be consulted and direction given as to whether work will occur around the infrastructure, or the infrastructure removed or relocated.

.5 All reasonable measures will be undertaken to locate all underground utilities prior to commencing any construction activities at the worksite. This includes all requirements related to provincially and/or federally regulated pipelines.

1.4 Fuel Management

.1 Ensure that any fuel storage and transfer areas on site are designed, operated and maintained in accordance with the requirements of applicable federal, provincial and municipal legislation, guidelines and codes. Conform to Alberta Environment & Parks regulatory containment requirements. Fueling or maintenance of equipment will not take place within 30 metres of waterways, including the County's stormwater system or environmentally sensitive areas unless written standard operating procedure(s) are developed, approved by the County and followed. Contractor and subcontractor personnel will be present for the duration of the fuelling process.

.2 Fuel storage and handling areas must be completely contained to prevent spills or leaks from migrating outside the designated storage or handling area, per the requirements of the National Fire Code of Canada (NFCC).

.3 Spill kits and fire extinguishers shall be readily available at the worksite to deal with spills or leaks.

1.5 Fires

.1 Fires and burning of rubbish onsite are not permitted.

.2 Additional requirements in accordance with Section 01 35 35 - Fire Safety Requirements.

.3 Spill kits and fire extinguishers will be available at the work site.

1.6 Waste and Hazardous Materials Management

.1 Generation of waste materials will be avoided or minimized. Appropriate non-hazardous and hazardous materials management procedures will be implemented at the worksite. Do not bury rubbish and waste materials onsite.

.2 Chemical, fuel and lubricant storage areas will be suitably located and protected to minimize releases. Ensure that all waste materials, equipment and debris are adequately contained onsite.

.3 All waste materials generated from worksite activities, including but not limited to, volatile materials, such as mineral spirits, oil or paint thinner, will be removed and disposed of in accordance with regulatory requirements and facility procedures.

.4 Ensure that sufficient numbers of waste and recycling containers are located on site and properly maintained and emptied to prevent overloading.

.5 At a minimum, the recycling of cardboard, wood, concrete, asphalt and metal will be considered and assessed. Minimize amount of waste to landfills by segregating recyclable materials from the waste stream into appropriate recycling containers. Ensure separation of materials into appropriate recycling or waste bins.

.6 Additional requirements in accordance with Section 01 74 19 - Construction Waste Management and Disposal.

.7 Worksite specific hazardous materials management procedure(s) will be communicated to all contractors and subcontractors.

1.7 Drainage

.1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.

.2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

.4 Drainage/discharges of surface and subsurface water for dewatering will be conducted in accordance with regulatory requirements. Written authorization may be obtained from the County for site-specific options to dispose of water directly or indirectly into the County sewer drainage system.

.5 When undertaking saw cutting or coring activities, concrete and/or asphalt slurry will be fully contained and not be allowed to enter the stormwater system or waterbody.

1.8 Soil Conservation and Stockpiles

.1 Remove topsoil before any construction procedures commence to avoid compaction of topsoil.

.2 Handle topsoil only when it is dry and warm

.3 Pile topsoil in berms in locations as directed by the County. Stockpile height not to exceed 2.5 - 3m.

.4 Topsoil is to be replaced as the finish layer over all areas to be reseeded.

.5 Avoid soil handling activities under high wind or unfavorable weather conditions, as directed by the County.

1.9 Site Preparation and Plant Protection

.1 Minimal surface disturbance techniques are to be employed on prairie landscapes.

.2 When vegetation or brush removal is required, such activities are to be completed using non-chemical means, unless otherwise authorized by the County.

.3 Protect trees and plants on site and adjacent properties where indicated.

.4 Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m.

.5 Protect roots of designated trees to drip line during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.

.6 Minimize stripping of topsoil and vegetation.

.7 Restrict tree removals to areas indicated or designated by the County.

.8 Salvage vegetation and store at approved sites for future replacement as required and directed by the County.

.9 Excavated soil or material that is not required for fill or other purposes will be properly disposed of in accordance with regulatory requirements.

.10 The source location of any imported fill material will be reported to the County prior to material being brought to the worksite. The suitability of the material may be verified upon request from the County.

1.10 Work Adjacent to Waterways

.1 Do not operate construction equipment in waterways.

.2 Do not use waterway beds for borrow material.

.3 Do not dump excavated fill, waste material or debris in waterways.

.4 Design and construct temporary crossings to minimize erosion to waterways.

.5 Do not skid logs or construction materials across waterways.

.6 Avoid indicated spawning beds when constructing temporary crossings of waterways.

.7 Do not blast under water or within 100 m of indicated spawning beds.

.8 Enclose entire work area that is adjacent to waterway with an approved silt barrier to prevent addition of suspended sediments into the waterway.

.9 In cases where silt barriers are not sufficient install additional erosion control devices as required to prevent any sediment from entering waterways.

1.11 Pollution Control

.1 Maintain temporary erosion and pollution control features installed under this contract.

.2 Control emissions from equipment and general worksite in accordance with local authority's emission requirements.

.3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area by providing temporary enclosures.

.4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

.5 Idling of vehicles not essential for performance of work will be minimized.

1.12 Equipment

.1 Equipment that is to be used in the execution of the work shall be maintained in a manner that will not be detrimental to the environment and in compliance with applicable regulatory requirements. Equipment that is in violation shall be removed from the site until such time as it does comply with requirements.

.2 Equipment and vehicles used on the prairie shall be cleaned to remove weeds and spores prior to arriving on site.

.3 Construction equipment shall be well maintained, free from leaks and mechanical defects.

.4 When equipment and vehicles are not in use, they must be stored in designated areas approved by the County.

1.13 Storage and Handling

.1 All hazardous substances (any substance that is poisonous or exhibits flammability, corrosivity, reactivity or toxicity) shall be stored and handled in a manner that is not harmful to human life and will not pollute the environment.

.2 All hazardous substances stored outdoors will be situated in or on a secondary containment device capable of fully containing 1.5 times the quantity of the largest container stored in or on it. Storage sites shall be consolidated to the greatest extent possible to reduce the number of hazardous sites.

.3 Where hazardous substances are stored indoors in quantities that cannot be contained safely by the building structure in the event of a leak, the County may direct that such substances be stored in or on proper secondary containment devices.

1.14 Restoration

.1 Disturbed vegetated areas must be reclaimed to re-establish vegetative cover.

.2 All destabilized areas must be re-stabilized and restored to pre-work conditions.

.3 Reseed using only native seeds and plants approved by the County for site restoration, unless otherwise approved by the County. No exceptions to native seeds will be considered for reclamation of prairie areas.

.4 Areas to be restored must be maintained and monitored to ensure successful restoration as determined in consultation with the County prior to work commencing. Areas where re-vegetation efforts where not successful must be reseeded, or replanted at no extra cost to the crown.

1.15 Clean Up

.1 Leaks or spills of hazardous substances, regardless of the quantity of whether indoors or outdoors, shall be stopped and cleaned up immediately and be prevented from entering storm or sanitary sewer systems or contaminating soil or water.

.2 All spilled substances and materials contaminated by the spill will be collected in leak proof containers or double bagged for disposal off County property. Disposal shall be in a manner, which is acceptable to the local authority having jurisdiction over disposal of such substances.

1.16 Spills, Releases and Discovery of Contamination

.1 All releases of hazardous substances into the environment (e.g., ground, water, drains, sewer systems, ditches, roads, parking areas, etc.) shall be reported to the appropriate regulatory agencies and the County immediately.

.2 If a product enters or is likely to enter a waterway or stormwater system, or if assistance is needed, contact 911 and request dispatch of the County's Fire Department.

.3 If a spill or release into the environment occurs, the affected area will be clean up and remediated to the satisfaction of the County and/or appropriate regulatory agency.

.4 In the event of any contamination; including, but not limited to, suspected or potentially hazardous building materials discovered during the work, the County will be notified immediately. These materials will be disposed in accordance with appropriate regulatory requirements.

1.17 Inspections

.1 The project site from time to time may be inspected to ensure compliance with federal, provincial and local environmental requirements.

.2 All spills reported under paragraph 1.15.1 of this Section are subject to inspection by the County to confirm cleanup and disposal have been carried out satisfactorily.

1.18 Erosion and Sediment Control

.1 Recognized practices will be utilized that minimize erosion and prevent the movement of sediment into watercourses and stormwater infrastructure. Submit an Erosion and Sediment Control Plan, for review and approval by the County and Consultants, prior to any work commencing on site.

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction.

.3 Temporary practices will be removed once the area has been stabilized against erosion and will be disposed of appropriately.

END OF SECTION

1. GENERAL

1.1 Pre-Construction

.1 It is highly recommended that the Contractor conducts their own “Condition Survey” of the existing site surroundings, to submit to the Consultants for record purposes. The existing “Condition Survey” should identify the condition of existing retained items, to safeguard both the Contractor and the County against potential future claims.

1.2 Construction Inspection

.1 Allow the County and Consultant access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by the County and Consultant’s instructions, or law of Place of Work.

.3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

.4 The County and/or Consultant will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, the County shall pay cost of examination and replacement.

1.3 Access to Work

.1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

.2 Co-operate to provide reasonable facilities for such access.

1.4 Procedures

.1 Notify appropriate agency and the County and Consultant in advance of requirement for tests, in order that attendance arrangements can be made.

.2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.

.3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.5 Rejected Work

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by the Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 Make good other Contractor's work damaged by such removals or replacements promptly.

.3 If in opinion of the Consultant or the County it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Consultant will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by the Consultant.

1.6 Reports

.1 Submit 1 PDF copy of inspection and test reports to County and Consultant.

1.7 Tests and Mix Design

.1 Furnish test results and mix designs as requested.

.2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Consultant and may be authorized as recoverable.

1.8 Mock-Ups

.1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups.

.2 Construct in locations acceptable to Consultant.

.3 Prepare mock-ups for Consultant's review with reasonable promptness and in orderly sequence, to not cause delays in Work.

.4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.5 Remove mock-up at conclusion of Work or when acceptable to the Consultant. Mock-ups may remain as part of Work if approved by the Consultant.

1.9 Mill Tests

.1 Submit mill test certificates as required of specification Sections.

1.10 Equipment and Systems

.1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

.2 Refer to specification Sections for definitive requirements.

END OF SECTION

1. GENERAL

1.1 Section Includes

.1 Construction aids.

.2 Office and sheds.

.3 Parking.

1.2 Related Sections

.1 Section 01 56 00 - Temporary Barriers and Enclosures.

1.3 Installation and Removal

.1 Provide construction facilities in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.4 Scaffolding

.1 Provide and maintain scaffolding ladders and temporary stairs.

1.5 Hoisting

.1 Provide, operate and maintain hoists required for moving of materials and equipment. Make financial arrangements with Subcontractors for use thereof.

.2 Hoists shall be operated by qualified operator.

1.6 Site Storage/Loading

.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

.2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

1.7 Construction Parking

.1 Parking will be permitted on site provided it does not disrupt performance of Work.

.2 Provide and maintain adequate access to project site.

1.8 Office

.1 Provide office as necessary. Location to be determined and approval by the County.

1.9 Equipment, Tool and Materials Storage

.1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

1.10 Sanitary Facilities

.1 Provide sufficient temporary portable sanitary facilities during the whole construction period, for both male and female workers.

.2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

END OF SECTION

1. GENERAL

1.1 Related Sections

.1 Section 01 74 19 - Construction/Demolition Waste Management and Disposal

1.2 Installation and Removal

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.3 Hoarding
Erect temporary site enclosure. The site enclosure to be 1.8 m high wire mesh temporary construction fence, complete with 2 large lockable access gates and pedestrian gate. Maintain fence in good repair.

1.4 Guard Rails and Barricades

.1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells and open edges of floors and roofs.

.2 Provide as required by governing authorities.

.3 Provide New Jersey type Traffic Barrier to direct traffic around the construction site.

1.5 Access to Site

.1 Provide and maintain access roads, sidewalk crossings, as may be required for access to Work.

1.6 Public Traffic Flow

.1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

.2 Provide traffic and speed limit signs around the construction site.

1.7 Fire Routes

.1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.8 Protection for Off-Site and Public Property

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

1.9 Waste Management and Disposal

.1 Separate waste materials for recycling in accordance with Section 01 74 19 - Construction/Demolition Waste Management and Disposal.

END OF SECTION

1. GENERAL

1.1 References

.1 Within text of each specifications section, reference may be made to reference standards.

.2 Conform to these reference standards, in whole or in part as specifically requested in specifications.

.3 If there is question as to whether products or systems are in conformance with applicable standards, the County reserves right to have such products or systems tested to prove or disprove conformance.

.4 Cost for such testing will be borne by the County in event of conformance with Contract Documents or by Contractor in event of non-conformance.

1.2 Quality

.1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

.2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.

.3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.4 Should disputes arise as to quality or fitness of products, decision rests strictly with the County based upon requirements of Contract Documents.

.5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

.6 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.3 Availability

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify the Consultant and City of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

.2 In event of failure to notify the Consultant and County at commencement of Work and should it subsequently appear that Work may be delayed for such reason, the County reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.4 Storage, Handling and Protection

.1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

.2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.

.3 Store products subject to damage from weather in weatherproof enclosures.

.4 Store cementitious products clear of earth or concrete floors, and away from walls.

.5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

.6 Store sheet materials, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.

.7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.8 Remove and replace damaged products at own expense and to satisfaction of the County.

.9 Touch-up damaged factory finished surfaces to Consultant's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.5 Transportation

.1 Pay costs of transportation of products required in performance of Work.

1.6 Manufacturer's Instructions

.1 Unless otherwise indicated in specifications install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

.2 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that the County will establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes the Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

1.7 Quality of Work

.1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify the Consultant of required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. The Consultant and County reserve the right to require dismissal from site, workers deemed incompetent or careless.

.3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with the Consultant, whose decision is final.

1.8 Co-Ordination

.1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.9 Concealment

.1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

.2 Before installation inform the Consultant of there is interference. Install as directed by the Consultant.

1.10 Remedial Work

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.

.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.11 Location of Fixtures

.1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.

.2 Inform the Consultant of conflicting installation. Install as directed.

1.12 Fastenings

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.

.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.13 Fastenings – Equipment

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.14 Protection of Work in Progress

.1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of the Consultant.

1.15 Existing Utilities

.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by the County, with minimum of disturbance to Work, and/or building occupants and pedestrian and vehicular traffic.

.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

END OF SECTION

1. Related Requirements

.1 Substitutions during bidding period: Instructions to Bidders.

2. Definitions

.1 Proprietary specification means a specification which includes one or more proprietary names of products or manufacturers, or both, and may also include descriptive, reference standard, or performance requirements, or any combination thereof.

.2 Non-proprietary specification means a specification which includes descriptive, reference standard or performance requirements, or any combination thereof, but does **not** include proprietary names of products or manufacturers.

.3 Substitution means a product or manufacturer not specified by proprietary name which may be acceptable in place of a product or manufacturer which is specified by proprietary name.

3. Product Options

.1 For products specified by non-proprietary specification:
.1 select any product by any manufacturer, which meets requirements of Contract Documents.

.2 For products specified by proprietary specification:
.1 select any product or manufacturer named, or
.2 substitute an unnamed product or manufacturer in accordance with Article 4. of this Section.

.3 For products specified by proprietary specification and accompanied by words indicating that substitutions will not be accepted:
.1 select any product or manufacturer named; substitutions are not permitted.

4. Substitutions

.1 Substitute Products: Where substitute products are permitted, unnamed products will be accepted by the Owner/Consultant, subject to the following:
.1 Substitute products shall be the same type as, be capable of performing the same functions as, and meet or exceed the standards of quality and performance of the named product(s). Substitutions shall not require revisions to Contract Documents nor to work of Other Contractors.

.2 Substitute Manufacturers: Where substitute manufacturers are permitted, unnamed manufacturers will be accepted by the Owner/Consultant, subject to the following:
.1 Substitute manufacturers shall have capabilities comparable to those of the named manufacturer(s). Substitutions shall not require revisions to Contract Documents nor to work of Other Contractors.

.3 In making a substitution Contractor represents that:
.1 he has investigated substitute product or manufacturer, or both, and has determined that it meets the criteria specified in 4.1 or 4.2, or both, and
.2 he will make any changes to the Work necessitated by the substitution as required for the Work to be complete in all respects, and
.3 he waives claims for additional costs and time caused by substitution which may subsequently become apparent.

.4 Substitutions shall not be ordered nor installed without Consultants acceptance.

.5 If in Client or Consultant's opinion, a substitution does not meet requirements of Contract Documents, Contractor shall, at no extra cost to the Client or Consultant, provide a product which, in the Client or Consultant opinion, does meet requirements of Contract Documents.

5. Proprietary Specifications

.1 Notwithstanding specified proprietary names of either or both products or manufacturers, products provided shall meet other applicable requirements of Contract Documents. Modify products if necessary to ensure compliance with all requirements of Contract Documents.

6. Changes to Accepted Products and Manufacturers

.1 Products and manufacturers accepted by the Client or Consultant for use in performance of Work of Contract shall not be changed without the Consultant's written consent.

.2 Submit requests to change accepted products and manufacturers to the Consultant in writing, including product data indicated in article 7.

7. Product Data

.1 When requested by the Client or Consultant, submit complete data substantiating compliance of a product with requirements of Contract Documents. Include the following:

.1 Product identification, including manufacturer's name and address.

.2 Manufacturer's literature providing product description, applicable reference standards, and performance and test data.

.3 Samples, as applicable.

.4 Name and address of projects on which product has been used and date of each installation.

.5 For substitutions and requests for changes to accepted products, include in addition to the above, the following:

.1 Itemized comparison of substitution with named product(s). List significant variations.

.2 Designation of availability of maintenance services and sources of replacement materials.

END OF SECTION

1. GENERAL

1.1 General

.1 The following are required if the work involves new buildings (new construction or expansion) or site improvements.

1.2 References

.1 The County's identification of existing survey control points and property limits.

1.3 Qualifications of Independent Land Surveyor

.1 Qualified registered land surveyor, licensed to practice in Place of Work, acceptable to The Consultant.

1.4 Survey Reference Points

.1 Existing base horizontal and vertical control points are designated on drawings.

.2 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.

.3 Make no changes or relocations without prior written notice to The Consultant.

.4 Report to The Consultant when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

.5 Require surveyor to replace control points in accordance with original survey control.

1.5 Survey Requirements

.1 Establish two permanent bench marks on site, referenced to established bench marks by survey control points. Record locations, with horizontal and vertical data in Project Record Documents.

.2 Establish lines and levels, locate and lay out, by instrumentation.

.3 Stake for grading, fill and topsoil placement and landscaping features.

.4 Stake slopes.

.5 Establish pipe invert elevations.

.6 Stake batter boards for foundations.

.7 Establish foundation, column locations and floor elevations.

.8 Establish lines and levels for mechanical and electrical work.

.9 The independent land surveyor shall provide one Survey Certificate after the foundations have been poured and one after completion of the building envelope. The independent land surveyor shall ascertain that building is correctly sited and there is no encroachment on other properties, and provide Certificate signed by him to that effect, at the earliest possible date.

1.6 Existing Services

.1 Before commencing work, establish location and extent of service lines in area of Work and notify The Consultant of findings.

.2 Where applicable, remove abandoned service lines within 2m of structures. Cap or otherwise seal lines at cut-off points as directed by The Consultant.

1.7 Location of Equipment and Fixtures

.1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.

.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

.3 Inform the Consultant of impending installation and obtain approval for actual location.

.4 Submit field drawings to indicate relative position of various services and equipment when required by The Consultant.

1.8 Records

.1 Maintain a complete, accurate log of control and survey work as it progresses.

.2 Record locations of maintained, re-routed and abandoned service lines.

.3 Upon completion of the work, and prior to application for occupancy permit, the Independent Land Surveyor shall submit to the Consultants a Real Property Report, signed and sealed by the Independent Land Surveyor, indicating location of Building and all site improvements as required by the Authority Having Jurisdiction. Submit one hard copy, and digital copies in both PDF and CAD formats.

1.9 Action and Informational Submittals

.1 Submit name and address of Surveyor to The Consultant.

.2 On request of The Consultant, submit documentation to verify accuracy of field engineering work.

.3 Submit certificate signed by surveyor certifying and noting those elevations and locations of completed Work that conform and do not conform with Contract Documents.

1.10 Subsurface Conditions

.1 Promptly notify Consultant in writing if subsurface conditions at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of probable conditions based thereon.

.2 After prompt investigation, should Consultant determine that conditions do differ materially, instructions will be issued for changes in Work as provided in Changes and Change Orders.

END OF SECTION

1. GENERAL

1.1 Related Sections

.1 Section 01 33 23 – Submittals, Shop Drawings, Product Data and Samples

.2 Section 01 74 19 - Construction/Demolition Waste Management and Disposal

1.2 Submittals

.1 Submittals: in accordance with Section 01 33 23 - Submittals, Shop Drawings, Product Data and Samples

.2 Submit written request in advance of cutting or alteration which affects:
- .1 Structural integrity of elements of project.
- .2 Integrity of weather-exposed or moisture-resistant elements.
- .3 Efficiency, maintenance, or safety of operational elements.
- .4 Visual qualities of sight-exposed elements.
- .5 Existing Utility tie-ins or abandonment.

.3 Include in request:
- .1 Identification of project.
- .2 Location and description of affected Work.
- .3 Statement on necessity for cutting or alteration.
- .4 Description of proposed Work, and products to be used.
- .5 Alternatives to cutting and patching.
- .6 Effect on Work of County or separate contractor.
- .7 Written permission of affected separate contractor.
- .8 Date and time work will be executed.

1.3 Materials

.1 Required for original installation.

.2 Change in Materials: Submit request for substitution in accordance with Section 01 33 23 - Submittals, Shop Drawings, Product Data and Samples.

1.4 Preparation

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.2 After uncovering, inspect conditions affecting performance of Work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

.4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

.5 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

1.5 Execution

.1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.

.2 Fit several parts together, to integrate with other Work.

.3 Uncover Work to install ill-timed Work.

.4 Remove and replace defective and non-conforming Work.

.5 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.

.6 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

.7 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.

.8 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.

.9 Restore work with new products in accordance with requirements of Contract Documents.

.10 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.11 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.

.12 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

1.6 Waste Management and Disposal

.1 Separate waste materials for recycling in accordance with Section 01 74 19 - Construction/Demolition Waste Management and Disposal.

END OF SECTION

1. GENERAL

1.1 Related Sections

.1 Section 01 74 19 - Construction/Demolition Waste Management and Disposal

1.2 Project Cleanliness

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by County or other Contractors.

.2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by the Consultant. Do not burn waste materials on site.

.3 Clear snow and ice from access to building, remove from site.

.4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.5 Provide on-site containers for collection of waste materials and debris.

.6 Provide and use marked separate bins for recycling. Refer to Section 01 74 19 - Construction/Demolition Waste Management and Disposal.

.7 Dispose of waste materials and debris off site.

.8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.

.9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

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

.12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.3 Final Cleaning

.1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

.2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

.3 Prior to final review remove surplus products, tools, construction machinery and equipment.

.4 Remove waste products and debris other than that caused by County or other Contractors.

.5 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.

.6 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors.

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

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

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

.10 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

.11 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.

.12 Remove dirt and other disfiguration from exterior surfaces.

.13 Clean and sweep roofs, gutters, areaways, and sunken wells.

.14 Sweep and wash clean paved areas.

.15 Clean equipment and fixtures to sanitary condition; replace filters of mechanical equipment.

.16 Clean roofs, downspouts, and drainage systems.

.17 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

.18 Remove snow and ice from access to building.

1.4 Waste Management and Disposal

.1 Separate waste materials for recycling in accordance with Section 01 74 19 - Construction/Demolition Waste Management and Disposal.

END OF SECTION

1. GENERAL

1.1 Section Includes

.1 Waste Management Goals

.2 Waste Management Plan

.3 Special Programs

1.2 Use of Site and Facilities

.1 Execute work with the least possible interference or disturbance to normal use of premises.

1.3 Disposal of Wastes

.1 Burying of rubbish and waste materials is prohibited. Disposal of waste into waterways, storm, or sanitary sewer is prohibited.

1.4 Minimize Waste Generation

.1 The Owner and Consultant have established that this Project shall minimize waste generation. Those processes that minimize waste generation are minimizing errors and breakage, preventing damage due to mishandling of materials, improper storage, contamination and inadequate protection. Avoid over packaging and overestimating quantities of materials.

.2 Of the inevitable waste that is generated, the waste materials designated in this specification shall be salvaged for reuse and or recycling. Waste disposal in landfills shall be minimized.

1.5 Contractor's Duties to minimize Waste

.1 Ensure construction wastes are either recycled or reused as much as practical.

.2 Develop a Construction Waste Management Plan before commencement of work.

.3 Supply a copy of the Construction Waste Management Plan to all sub-contractors upon award of tender.

.4 Be responsible for final implementation of Construction Waste Management Plan by disposal, recycling or reuse of materials at appropriate locations.

1.6 Sub-trade's Duties to minimize Waste

.1 Work with the Contractor to achieve a construction waste diversion rate of at least 60%.

.2 Institute construction waste reduction and material reuse practices.

.3 Effect optimum control of construction waste.

.4 Follow the Construction Waste Management Plan provided by the Contractor.

.5 Implement a site recycling program that includes source separation of solid waste materials.

1.7 Meetings

.1 The Contractor shall conduct a construction waste management meeting and discuss waste management goals and issues required in this Section as part of the following regular meetings:
.1 Pre-Construction Meeting
.2 Progress Meetings

.2 Agenda Items: Review methods and procedures related to waste management including,

but not limited to, the following:

.1 Review and discuss waste management plan including responsibilities of the Waste Manager (see below).

.2 Review requirements for documenting quantities of each type of waste and its disposition.

.3 Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.

.4 Review procedures for periodic waste collection and transportation to recycling and disposal facilities.

.5 Review waste management requirements for each trade.

1.8 Quality Assurance

.1 Field Measurements: The Contractor and Subcontractors shall verify that field measurements are as indicated on construction and/or shop drawings before confirming product orders or proceeding with work, in order to minimize waste due to excessive materials.

.2 Shipping: Coordinate the schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

.3 Packing: Arrange for the return of packing materials, such as wood pallets, where economically feasible.

.4 If it is in the Consultant's opinion that the Waste Management goals are not being met in accordance with this Section, the Consultant may obtain the services of a waste auditing company. Contractor is to pay any costs associated with that service if it is determined that all the goals are not being meet or if proper documentation of the Waste Management Plan are not submitted.

2. EXECUTION

2.1 General

.1 All materials on site become the property of the Contractor.

.1 Protect, stockpile, store and catalogue salvaged items.

.2 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.

.3 Protect structural components not removed for demolition from movement or damage.

.4 Support affected structures. If safety of building is endangered, cease operations and immediately notify the Consultant and the Owner.

.6 Designate receiving / storage areas for incoming materials scheduled to be placed convenient to work area, in order to minimize waste due to excessive materials handling and misapplication.

.7 Store and handle materials in a manner as to prevent loss from weather and other damage. Keep materials, products and accessories covered, off the ground, and store in a dry, secure area.

.8 Prevent contact with materials that may cause corrosion, discolouration or staining.

.9 Protect all materials and installations from damage by the activities of other trades.

2.2 Installation

.1 Install product(s) per manufacturer's recommendations with the efforts to reduce damage to or minimize waste of materials by required replacement.

2.3 Waste Management

.2 Source separation: Separate, store, protect and handle at the site identified recyclable and salvageable waste products in order to prevent contamination of materials and to maximize recyclability and salvageability of identified materials.

.3 Return: Set aside and protect miss-delivered and substandard products and materials and return to supplier for credit.

.4 Recycling: Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

.5 Purchasing Agreements: To the greatest extent possible, include in material purchasing agreements a waste reduction provision requesting that materials and equipment be delivered in packaging made of recyclable material, that they reduce the amount of packaging, that packaging be taken back for reuse or recycling, and to take back all unused product. Ensure that subcontractors require the same provisions in their purchase agreements.

2.4 Waste Management Goals

.1 Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.

.2 Of all the waste generated at least 50. must be recycled or reused. This may be calculated by volume or by weight but must be calculated using the same method throughout Construction.

.3 With regard to these goals, the Contractor shall develop a Waste Management Plan for this Project.

.4 Additional Waste Reduction Proposals:
.1 The Owner encourages the Contractor and Subcontractors to continually investigate any additional means of waste disposal alternatives or recycling methods not created by this Section.
.2 No time limits will be placed on these submittals, only that they are submitted to allow for review and implementation and do not extend the completion date of the project.

.5 Cost Benefits:
.1 If the Contractor has an approved means of achieving a waste reduction goal that leads to a cost savings, those savings shall accrue to the Contractor and/or his Subcontractors.

2.5 Waste Management Plan

.1 Draft Waste Management Plan: Within the time frame allotted for the negotiated contract or prior to any waste removal, whichever occurs sooner, the Contractor shall draft a Waste Management Plan. The Contractor may attach a Waste Management Plan Summary Sheet as a guide for his plan. The draft plan shall contain the following:
.1 Analysis of the proposed jobsite waste to be generated, including types and approximate quantities of recyclable and waste materials generated (by weight or by volume but must be consistent throughout).
.2 Landfill options: The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s) and the projected cost of disposing of all Project waste in the landfill(s).
.3 Alternatives to Landfilling: A list of each material proposed to be salvaged, reused, or recycled during the course of the Project, the proposed local market for each material, and the estimated cost savings or additional costs resulting from separating and recycling (versus landfilling) each material.

.2 Final Waste Management Plan: Once the Owner has determined which of the recycling

options addressed in the draft Waste Management Plan are acceptable, the Contractor shall submit, within ten (10) calendar days and prior to Construction start, a Final Waste Management Plan. The final Waste Management Plan shall contain the following:

.1 Analysis of the proposed jobsite waste to be generated, including types and approximate quantities.
.2 Landfill options.
.3 Alternative to Landfilling.
.4 Materials Handling Procedures.

.3 Revenue from the sale of recycled or salvaged materials and Landfill tipping fees saved due to diversion of materials from the landfill shall be accrued by the Contractor. The list of these materials shall include at a minimum, the following materials:

.1 Cardboard
.2 Clean dimensional wood
.3 Glass
.4 Concrete, Concrete Block, Asphalt etc.
.5 Gypsum Board
.6 Organic Material
.7 Paper
.8 Beverage containers
.9 Land clearing debris
.10 Metals from banding, stud trim, ductwork, piping, rebar, roofing, trim, steel, iron, galvanized sheet steel, stainless steel and aluminum.

.4 Materials Handling Procedures: The Contractor shall prevent contamination of materials to be recycled and salvaged source and handle materials consistent with requirements for acceptance by designated facilities.

.5 Resources for Development of Waste Management Plan. The Contractor shall contact the following resources for Development of the Waste Management Plan:

.1 Local haulers and markets for recyclable materials.
.2 County Recycling Department.
.3 Provincial Authorities having jurisdiction.

.6 A current listing of recyclers specializing in specific categories of materials may be obtained during normal office hours from:

Alberta Environment
Recycling Branch
Recycle Info Line
Telephone: (780) 427-6982 or (800) 463-6326

.7 Contamination: When the recycling program is first started, and during construction operations the Contractor and Contractor shall remind workers to keep trash out of the recyclable material bins. Lunch bags, coffee cups, caulking tubes, etc. must not be deposited into recycling bins unless they are recyclable.

.8 Handling: Recyclable materials shall be free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling process. The Contractor shall monitor source separation and ensure workers clean materials which are contaminated prior to placing in collection containers.

.9 Collection: The Contractor (unless otherwise delegated) shall arrange and pay for collection by or delivery of recyclable materials to the appropriate recycling company that accepts construction waste for purpose of recycling. The Contractor shall coordinate regular or "when-called" pick-up or delivery to eliminate overflowing bins.

.10 Recycling and Waste Facilities: The Contractor should provide a list of all facilities used to process construction waste. The list should include the name of the facility, its' address, phone number and contact person, the type(s) of material(s) processed at the facility, and some information on how the material is used after it is processed.

.11 Waste Management Plan Implementation:

.1 Waste Manager: The Contractor shall designate an individual on-site party responsible for instructing workers and overseeing and documenting results of the Waste Management Plan for the Project. The Waste Manager, shall educate and monitor their Workers about the acceptable methods of source separation. The Contractor may be held liable for "illegal" dumping by their Workers.

.2 Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner and the Consultant of record.

.3 Instruction: The Waste Manager/Contractor shall provide on-site instruction of appropriate separation, handling, recycling, salvage, reuse and return methods to be used by all parties at the appropriate stages of the Project.

.4 Separation facilities: The Contractor shall lay out and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.

.5 Hazardous wastes: Hazardous wastes shall be separated, stored and disposed of according to provincial and Local regulations.

.6 Submit with each application for progress payment, a summary of waste generated by the project:

.1 Failure to submit this information shall render the application for payment incomplete and shall delay progress payment.

.2 Submit a summary, containing the following information:

.1 The amount in tones or cubic metres of materials placed in landfill from the project.

.2 The identity of the landfill, the total amount of tipping fees paid at the landfill, and

.3 The total disposal cost. Include manifests, weight tickets, receipt, and invoices.

.4 For each material recycled, reused, or salvaged from the project, the amount of tons or cubic metres, the date removed from the job site, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or savings of salvage or recycling each material.

.5 Attach manifests, weight tickets, receipts, and invoices.

2.6 Dump Site

.1 The Municipal Landfill may be used for the dumping of non-recyclable waste, as stipulated by the Municipal Landfill Regulations.

.2 In order to ensure that forbidden material is not brought to the Landfill site, the Landfill Operator has the authority to check all vehicles for any forbidden material prior to being permitted access to the Site. Refusal from any of the vehicle operators to permit the check will result in loss of the use of the dumpsites by the Contractor. This will be strictly enforced.

2.7 Hazardous Waste Management and Disposal

.1 Divert unused adhesives, paint, flammable or otherwise harmful or hazardous materials from landfill to official hazardous material collections site approved by the Consultant. Do not dispose of hazardous materials into sewer systems, lakes, streams, onto ground or other locations where it will pose health or environmental hazard.

2.8 Special Programs

.1 The Contractor is responsible for final implementation of programs involving tax credits or rebates or similar incentives related to recycling, if applicable to the project.

.2 If a waste auditing service is required, Contractor is to pay any costs associated with that service.

.3 The Contractor is responsible for obtaining information packets relevant to all of the above listed programs prior to starting work on this project.

.4 Document work methods, recycled materials, alternate disposal methods that qualify for tax credits, rebates, and other savings under programs listed by Alberta Environment.

END OF SECTION

1. GENERAL

1.1 Supporting Documents

.1 This specification section is to be read in conjunction with the County's General Conditions, the Close Out Procedures Checklist, and Specification Section 01 78 00- Closeout Submittals

1.2 Pre-Requisites to Substantial Completion

.1 Prior to requesting an application for Substantial Performance of the Work, the Contractor shall do the following, not necessarily in order listed:

.1 Obtain and submit evidence of compliance with regulatory requirements, including the following:

.1 Occupancy permit(s).

.2 Inspection/operating certificates.

.3 Fire Alarm Verifications

.3 Remove from project site temporary facilities, along with construction tools, equipment, rubbish, mock-ups and similar items.

.4 Complete starting of all systems and equipment.

.5 Complete testing, commissioning, adjusting and balancing of systems and equipment, ensuring they are fully operational. Provide all documents pertaining to startup and balancing of equipment.

.6 Complete equipment and systems demonstration and instructions to the County's maintenance staff.

.7 Complete final cleaning.

.8 Submit project record documents.

.9 Submit a draft copy of the Operation and Maintenance data and manuals for review. The pdf copy is to be circulated as the draft copy.

.10 Provide spare parts and maintenance materials.

.11 Make final change-over of locks and transmit keys to the County.

.12 Complete installation of architectural finish items, including all mechanical and electrical covers and trims.

.13 Ensure that all Contract Deficiencies which may affect operation of systems have been corrected.

.14 Ensure that the Work is complete and ready for use for the purpose intended.

.15 Prepare a comprehensive room by room deficiency list of items to be completed or corrected (Contractors deficiency list).

.16 Ensure that the "Balance to Complete" on the Progress Claims is below the maximum amount to complete the work, as defined by the 3%, 2% and 1% formula in the Alberta Lien Act.

.17 Submit one hard copy, and digital PDF & CAD copies of the Real Property Report.

.18 Confirm any Seasonal Deficiencies that may not be capable of being completed in a timely manner.

1.3 Substantial Performance of the Work

.1 The Contractor shall prepare and submit to the Consultant a Certificate of Substantial Performance of the Work for verification by the Consultant, with the date omitted. The submission is also to be accompanied with the following:
- .1 Contractors deficiency list
- .2 Confirmation certifying that all of the above pre-requisites have been fulfilled.

.2 The Consultant will review the work to verify the validity of the application and shall:
- .1 advise the Contractor in writing that the Work is not substantially performed and give reasons why, or
- .2 state the date to be inserted into the certificate of Substantial Performance of the Work, and issue a copy of that certificate to each of the County and the Contractor.

.3 The Contractor shall, within 3 days of the date stated on the certificate of Substantial Performance of the Work, post a copy of the certificate in a prominent location at the Project Site.

.4 Following the review of the work, the Consultant shall update the Contractors deficiency list. This revised list will form the initial “Contract Deficiency List”. Not all deficiencies may be obvious during the reviews, and the Consultant reserves the right to add additional deficiencies to the Contractors list, as they are identified.

.5 Immediately following the issuance of the certificate of Substantial Performance of the Work, the Contractor, in consultation with the Consultant, shall establish a reasonable date for finishing the Work.

.6 Upon the Substantial Performance of the Work being issued, a date will be established for the County to assume responsibility for care, custody and control of the Work, including responsibility for:
- .1 Facility operation, including all systems and equipment.
- .2 Maintenance.
- .3 Security.
- .4 Property insurance.
- .5 Utility costs.

1.4 Holdback Release

.1 After a period of 45 days for the date on the Substantial Performance certificate, the Contractor shall apply for Holdback release payment. This application shall include:
- .1 A copy of the certificate of Substantial Performance of the Work
- .2 Workers' Compensation Clearance Letter,
- .3 Certificate of Title dated not earlier than the 41st day after the verification of the certificate of Substantial Performance of the Work. Holdbacks will only be released once any liens have been removed by the Contractor.”
- .4 Statutory declaration on CCA Form 9A, stating that all wages, subcontractors and suppliers have been paid.

.2 The Consultant shall review the application for payment, and issue a recommendation for payment, if all the above documents are received.

1.5 Final Completion of the Work

.1 Prior to declaring final completion of the work, the completed Operation and Maintenance data and manuals are to be handed to the County (two hard copies, and one pdf copy).

.2 Following Final Completion of the Work, including any testing, the Contractor shall provide the Consultant with the following:
- .1 a declaration that the Work has been completed in accordance with the Contract Documents;
- .2 a declaration that there are no Claims that have been made, or that could be made, against the County for the performance of the Work by any Person other than the Contractor
- .3 a declaration that no liens have been registered arising from the Work
- .4 a statement setting out a final adjustment of accounts between the County and the Contractor, to be reviewed and agreed to by the Consultant, County and the Contractor;
- .5 a declaration that the Contractor confirms that, upon payment in the amount applied for,

that the Contractor has no further Claim against the County for the Work, for any reason, except to the extent of the minor lien fund holdback and any Claims for which the Contractor has previously provided County and the Consultant.

.3 Following receipt of the above documents, the Consultant shall, with reasonable promptness, conduct an inspection and assessment of the Work to verify that the Work has been completed in accordance with the Contract Documents.

.4 the Consultant shall either issue a certificate of Final Completion to the County and the Contractor, or a list of items to be completed or rectified, of which the Consultant was aware. The County may deduct from monies owed to the Contractor the costs associated with the Consultant being called upon to perform more than one (1) inspection.

.5 Following the receipt by the Contractor of the certificate of Final Completion, the Contractor shall apply for final payment (including any Minor Lien Fund Holdbacks).

.6 An application for final payment will not be accepted if the period designated for the release of holdback pursuant to the Builders' Lien Act from the date of Substantial Performance of the Work has not yet expired.

.7 The Consultant shall review the application for payment, and issue a recommendation for payment, if all the above documents and declarations are received.

1.6 Warranty Period

.1 The Contractor warrants that the Work, including all workmanship, labour, Materials and equipment supplied by the Contractor, either directly or indirectly, and incorporated into the Work, shall comply in all respects with the Contract Documents, and shall be free from Deficiencies.

.2 The Warranty Period for all work pertaining to this Contract shall be one year from the date of Substantial Performance of the Work, for any Materials or portions of the Work which are supplied or completed before Substantial Performance of the Work is attained, unless a longer period is specified in the Scope Documents for such Materials or portions of the Work;

.3 Where a period longer is specified in the Scope Documents, then that period specified in the Scope Documents shall apply from the date specified in the Scope Documents or, if no date is specified, from the date of Substantial Performance of the Work.

.4 Where Warranty Work is performed, regardless of the initial Warranty Period, the Warranty Period shall recommence for that Warranty Work for the same period as initially contemplated commencing on the date of completion of the Warranty Work.

.5 The Contractor shall promptly perform the Warranty Work, at the Contractor's expense, for all Deficiencies of which the Contractor is provided Notice by the County, or the Consultant during the Warranty Period or 30 days thereafter.

.6 All Warranty Work carried out by the Contractor related to Deficiencies in the Work, shall be performed during periods of time acceptable to by the County.

1.7 Post Construction Evaluation

.1 The County and Consultants will invite the Contractor to a meeting to discuss the project. The discussions will be to evaluate the project, the Design, the Construction Administration, and address questions such as:

- What changes could have been made to the design.
- What aspects of the construction process worked well.
- Did anything not work during the construction process.
- What lessons can be learnt, and what can be improved.
- Client, and occupants feedback.

1.8 Warranty Period Completion

.1 Just prior to end of one year warranty period, the Consultants will arrange and conduct a final “one year warranty” review.

.2 Following this inspection, the Consultants will either:
- .1 issue a Letter of Total Completion, or
- .2 advise Contractor of items which must be corrected prior to issuance of Letter of Total Completion.

END OF SECTION

1. GENERAL

1.1 Section Includes

.1 Warranties and bonds.

1.2 Related Sections

.1 Section 01 45 00 - Quality Control.

.2 Section 01 77 00 – Close Out Procedures.

1.3 Submission

.1 Submit a letter from the Environmental Consultant verifying the abatement procedure for all hazardous materials found on site met the current standard as set by all applicable governing bodies.

.2 If requested, furnish evidence as to type, source and quality of products provided for the abandonment of the utilities.

.3 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

.4 Pay costs of transportation.

1.4 Recording Actual Site Conditions

.1 Record all utility abandonment and locations.

.2 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.

.3 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
- .1 Measured depths of elements of foundation in relation to finish first floor datum.
- .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
- .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
- .4 Field changes of dimension and detail.
- .5 Changes made by change orders.
- .6 Details not on original Contract Drawings.
- .7 References to related shop drawings and modifications.

1.5 Warranties and Bonds

1.6 Permits

.1 Provide a copy of the completed demolition certificate.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

.1 Demolition, removal, and disposal of interior and exterior parts of structures and finishes, both above and below grade, related mechanical and electrical services.

1.2 REFERENCES

.1 Canadian Standards Association (CSA International)

.1 CSA S350, Code of Practice for Safety in Demolition of Structures.

.2 Comply with National Building Code of Canada, Part 8, "Safety Measures at Construction and Demolition Sites", and Provincial requirements.

.3 Department of Justice Canada (Jus).

.1 Canadian Environmental Assessment Act (CEAA), 1995, c. 37.

.2 Canadian Environmental Protection Act, 1999 (CEPA), c. 33.

.4 Transport Canada (TC).

.1 Transportation of Dangerous Goods Act, 1992 (TDGA), c. 34.

1.3 DEFINITIONS

.1 Alternate Disposal: reuse and recycling of materials by designated facility, user or receiving organization which has valid Certificate of Approval to operate. Alternative to landfill disposal.

.2 Demolition: rapid destruction of building following removal of hazardous materials.

.3 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: asbestos PCB's, CFC's, HCFC's poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or well-being or environment if handled improperly.

.4 Waste Audit (WA): Refer to Section 01 74 19 –Demolition Waste Management and Disposal.

.5 Waste Management Coordinator (WMC): Refer to Section 01 74 19 –Demolition Waste Management and Disposal.

.6 Waste Reduction Workplan (WRW): Refer to Section 01 74 19 –Demolition Waste Management and Disposal.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Pre-demolition Conference: Conduct conference at Project site.

.1 Review communication protocols between Contractor, and Consultant.

.2 Inspect and discuss condition of construction to be demolished.

.3 Review structural load limitations of existing structures.

.4 Review and finalize demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.

.5 Review areas where existing construction is to remain and requires protection.

.6 Review and finalize procedures for protection of existing structure and materials.

.7 Review procedures for noise control and dust control.

.8 Review Waste Reduction Workplan.

1.5 SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 23 – Submittals, Shop Drawings, Product Data and Samples.

.2 Action Submittals:

.1 Schedule of Selective Demolition Activities: Indicate the following:

.1 Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.

.2 Interruption of utility services. Indicate how long utility services will be interrupted, and how temporary services will be provided.

.3 Coordination for shutoff, capping, and continuation of utility services.

.3 Informational Submittals:

.1 Demolition Drawings:

.1 Provide demolition drawing including proposed protection measures:

.2 Submit report, including drawings, that indicates measures proposed for protecting individuals and property, for dust control and for noise control.

.3 Indicate proposed locations and construction of barriers.

.2 Shoring and Underpinning Drawings:

.1 Before proceeding with demolition of load bearing elements or of other walls and where required by authority having jurisdiction, submit for review by Consultant shoring and underpinning drawings prepared, stamped and signed by qualified professional engineer registered or licensed in the Province of Alberta, showing proposed method.

.3 Hazardous Materials: Provide description of Hazardous Materials and Notification of Filing with proper authorities prior to beginning of Work as required.

.4 Certificates: Submit copies of certified weigh bills, bills of lading, receipts from authorized disposal sites and reuse and recycling facilities for material removed from site on monthly basis.

.5 Waste Reduction Workplan: prior to beginning of Work on site submit detailed Waste Reduction Workplan in accordance with Section 01 74 19 - Construction / Demolition Waste Management and Disposal.

.6 Existing Conditions Photography: Submit digital photographs of pre-demolition existing conditions review on Compact Disc.

1.6 QUALITY ASSURANCE

.1 Demolition work shall be performed by workers familiar with the materials affected.

.2 Regulatory Requirements: ensure Work is performed in compliance with CEPA, CEAA, TDGA, and applicable Provincial/Territorial regulations.

.3 Perform in a manner to neither damage nor endanger any portion of Work.

.4 WMC to report on status of materials diversion at site meetings.

1.7 SITE CONDITIONS

.1 Site Environmental Requirements:

.1 Ensure that demolition work does not adversely affect groundwater, or contribute to excess air and noise pollution.

.2 Do not dispose of waste of volatile materials including but not limited to, mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.

.1 Ensure proper disposal procedures are maintained throughout the project.

.3 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties.

.4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities.

.5 Protect trees, plants and foliage on site and adjacent properties where indicated.

.2 Hazardous Materials:

.1 Remove contaminated and hazardous materials listed as hazardous in Pre-demolition Hazardous Materials Survey Report from the site, prior to start of demolition Work, and dispose at designated disposal facilities in safe manner in accordance with TDGA and other applicable regulatory requirements and Division 02 Abatement Procedures Sections.

.1 List of hazardous materials: Refer to Appendix A – Pre-Demolition Hazardous Materials Survey at Marshall Yard, Plan 9612511, Block 6, Medicine Hat, Alberta, July 19, 2017.

.3 Do not close or obstruct walkways, exits, or other facilities used by Owner without written permission from authorities having jurisdiction.

.4 Provide temporary exiting requirements for adjacent occupancies as required by authorities having jurisdiction.

PART 2 PRODUCTS

2.1 EQUIPMENT

.1 Equipment and heavy machinery:

.1 On-road vehicles to: CEPA-SOR/2003-2, On-Road Vehicle and Engine Emission Regulations and CEPA-SOR/2006-268, Regulations Amending the On-Road Vehicle and Engine Emission Regulations.

.2 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Examine existing conditions to determine full extent of work and existing conditions as well as requirements for protection of adjacent work.

.2 Verify conditions and dimensions on site.

.3 Check conditions, obtain and confirm actual site dimensions, examine conditions, etc., as required to ensure correct execution of Work.

.1 Notify Consultant in writing of discrepancies between actual site conditions and Contract Documents that may hinder proper execution of Work.

.4 Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

.5 When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure nature and extent of conflict.

.1 Promptly submit written report to Consultant.

3.2 PROTECTION

.1 Areas adjacent to demolition areas will remain occupied.

.1 Keep noise and vibration levels to a minimum.

.2 Provide fire protection for duration of demolition work.

.2 Prevent movement, settlement, or damage to adjacent structures, utilities, and parts of building to remain in place.

.1 Provide bracing and shoring required.

.3 Protect building systems, services and equipment of adjacent structures.

.4 Provide temporary dust screens, railings, supports and other protection as required.

3.3 PREPARATION

.1 Inspect building with Consultant and verify extent and location of items designated for removal and disposal.

.2 Arrange for temporary disruption of existing services with Consultant.

.3 Notify and obtain approval of utility companies before starting demolition.

.1 Locate and protect utilities to remain in operating condition.

.4 Disconnect, cap, plug or divert existing utilities as indicated, and in accordance with requirements of authorities having jurisdiction. Mark location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.

.1 Immediately notify Consultant, Owner, and utility company concerned in case of damage to any utility or service, designated to remain in place.

.2 Immediately notify Consultant should uncharted utility or service be encountered, and await instruction in writing regarding remedial action.

.5 Do not disrupt active or energized utilities traversing premises.

.6 Prior to start of Work remove hazardous materials listed as hazardous from site and dispose of in safe manner and in accordance with Division 02 Abatement Procedures Sections.

3.4 DEMOLITION WORK

.1 General: Demolish and remove existing structure to extent indicated.

.2 Demolish in accordance with CSA S350 and other applicable safety standards.

.1 Blasting operations not permitted during demolition.

.3 Owner to be given first right of refusal on all materials salvageable from the demolition process. Except for items claimed by the Owner, waste and abandoned materials and equipment are the Contractor’s property. Promptly remove from site.

.4 Demolish to minimize dusting, keep materials wetted as directed by Consultant.

.5 Remove structural framing.

.1 Divert uncontaminated steel to alternate disposal facility.

.6 Contain fibrous materials (e.g. Insulation) to minimize release of airborne fibres while being transported within facility.

.7 At end of each day's work, leave Work in safe and stable condition.

3.5 SALVAGED ITEMS

.1 Remove items designated for salvage before start of demolition work.

.2 Process salvaged items as indicated on other technical specification sections.

3.6 REMOVAL FROM SITE

.1 Separate from waste stream, materials designated for alternate disposal in condition suitable for reuse and/or recycling.

.2 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

.1 Remove stockpiles of like materials by alternate disposal option once collection of materials is complete.

.2 Remove stockpiled material when it interferes with operations of project.

.3 Remove and dispose of rubble, debris, demolished materials, fixtures, fitments, accessories, equipment off site.

.4 Transport material designated for alternate disposal in accordance with Section 01 74 19 –Construction Demolition Waste Management and Disposal.

3.7 CLEANING

.1 Keep site clean and organized throughout demolition.

.2 Restore areas and existing works outside areas of demolition to conditions that existed prior to beginning of Work.

END OF SECTION

PART 1 GENERAL

.1 Read this section in conjunction with all other sections so as to comply with the requirements of the General Conditions of the Contract.

.2 Where there is conflict of information and/or requirements specified between the specification, reports and drawings, the most stringent shall apply.

1.2 SECTION

.1 This section covers the work to be covered by the contract documents and requirements for the completion of the hazardous materials work.

.2 The site conditions identify the locations and condition of all known asbestos-containing materials projected to be disturbed by the work of this contract. The specification fulfills the requirements of the report required by the Section 34 of the *Alberta Occupational Health and Safety Act, Regulations and Code* (Government of Alberta, 2009) and Section 3.2.2 of the *Alberta Asbestos Abatement Manual* (Government of Alberta, 2012) hereafter referred to as 'The Regulations'.

.3 It is the intent that work described in this Section will result in the removal and disposal of all of the following identified asbestos-containing materials:

.1 Hazardous Materials Building Assessment, 78 South Railway Avenue, Irvine, AB. Squareone Consulting Ltd.

1.3 RELATED REQUIREMENTS

.1 Section 02 82 00.01 – Asbestos Abatement – Minimum Precautions

.2 Section 02 83 10 – Lead – Base Paint Abatement – Minimum Precautions

1.4 REFERENCES

.1 Comply with federal, provincial, and local requirements, provided that in any case of conflict among those requirements or with these Specifications the more stringent requirements shall apply. Work shall be performed under regulations in effect at the time work is performed. All current amendments to regulations apply. Regulations include but are not limited to the following:

.1 Alberta Environment. *Guidelines for the Disposal of Asbestos Waste*, 1989.

.2 Department of Justice Canada (1999). Canadian Environmental Protection Act (CEPA).

.3 Environment Canada (1991). Identification of Lamp Ballasts Containing PCBs.

.4 Federal Halocarbon Regulations, 2003 – SOR/2003-289

.5 Government of Alberta. *Occupational Health and Safety Act, Regulations and Code*, 2009.

.6 Government of Alberta. *Alberta Asbestos Abatement Manual, Employment and Immigration*, 2012.

.7 Government of Alberta (2013). *Occupational Health And Safety Bulletin, Lead At The Work Site* (2013). Employment and Immigration.

.8 Government of Alberta (2013). *Occupational Health And Safety Bulletin, Crystalline Silica at the Work Site* (2009). Employment and Immigration.

.9 Government of Alberta [March 2017], *Transportation of Asbestos as a Waste.* Dangerous Goods, Rail Safety & 511 Alberta.

.10 Alberta Government. (2017). *Asbestos at the Work Site.*

.11 Government of Canada, *Transportation of Dangerous Goods Regulations,* SOR/2017-137 for the transport of asbestos waste.

.12 Government of Canada (2008). *Canadian Environmental Protection Act*, PCB Regulations, SOR/2008-273.

.13 Government of Canada (2015). *Hazardous Products Act*, R.S.C, C.H-3. Available Online

.14 Government of Canada. 2016. *Canadian Consumer Product Safety Act, Surface Coatings Materials Regulations (Lead), SOR/2016-193.*

.15 Health Canada/Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS's).

.16 Human Resources and Social Development Canada (HRSDC). Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.

.17 Ontario Ministry of Labour (2004). Occupational Health and Safety Branch, Guideline Lead On Construction Projects and O. Reg. 490/09 respecting Designated Substances - Lead made under the Occupational Health and Safety Act as amended by O. Reg. 148/12 and O. Reg. 149/12.

.18 *Pre-Demolition Hazardous Marterials Survey, Marshall Yard, Plan 9612511, Block 6, Lot 3, Medicine Hat, Alberta* conducted by WSP Canada Inc., dated July 2017.

.19 Province of Alberta (Amended 2013). *Environmental Protection and Enhancement Act*, Waste Control Regulation, Alberta Regulation 192/96.

.20 Province of Alberta (Amended 2004). *Environmental Protection and Enhancement Act*, Ozone-Depleting Substances and Halocarbons Regulation, Alberta Regulation 181/2000.

.21 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (NIOSH)

.1 Engineering Controls for Silica in Construction.

.22 Transport Canada (1992). Transportation of Dangerous Goods Act (TDGA).

.23 U.S. Department of Labour (1993). Occupational Safety and Health Administration (OSHA) - Toxic and Hazardous Substances. Lead in Construction Regulation - 29 CFR 1926.62-1993.

.24 U.S. Environmental Protection Agency (EPA) (1995). EPA 747-R-95-007-[1995], Sampling House Dust for Lead.

.25 WorkSafeBC (2013). Lead-Containing Paints and Coatings. Preventing Exposure in the Construction Industry

1.5 DEFINITIONS

.1 Air Lock: Temporary chamber sealed with polyethylene sheeting. Curtained doorways constructed at either end with a minimum of 6 feet (2.0 metres) separation. Minimum width is 36 inches (900 mm).

.2 Amended Water: Water with wetting agent added for purpose of reducing surface tension to allow thorough wetting of ACM.

.3 Asbestos-Containing Material (ACM): Material identified under Site Conditions and over spray, fallen material and settled dust.

.4 Asbestos Work Area: Area where work takes place, which will, or may, disturb ACM.

.5 Authorized Visitors: Building Owner or representatives, Owner or Consultant or designated representatives, and persons representing regulatory agencies.

.6 Curtained Doorway: Doorway consisting of two flaps of rip-proof polyethylene.

.7 DOP Test: A testing method used to determine the integrity of the Negative Pressure unit using dioctyl phthalate (DOP) HEPA filter leak test.

.8 Friable Material: Material that when dry can be crumbled, pulverized or powdered by hand pressure and includes material that is crumbled, pulverized or powdered.

.9 HEPA Filter: High Efficiency Particulate Aerosol filter that is at least 99.97 percent efficient in collecting a 0.3 micrometre aerosol.

.10 Negative Pressure: A reduced pressure within the Asbestos Work Area established by extracting air directly from Asbestos Work Area, and discharging this air outside Asbestos Work Area to exterior of building.

.11 Occupied Area: Any area of the building outside the Asbestos Work Area.

.12 Personnel: All Contractor Employees, Trade Sub-Contractor employees, supervisors and authorized visitors.

.13 Polyethylene: Either polyethylene sheeting or rip-proof polyethylene sheeting as specified with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage or damage by lock-down agents, and to prevent escape of asbestos fibres through sheeting into Occupied Areas.

1.6 OUTLINE OF WORK

.1 General

.1 Provide heat where necessary to perform the work.

.2 Provide necessary lifting devices, scaffolding, elevated work platforms, safety equipment and testing to ensure worker and public safety.

.3 Develop and submit to Owner a Site-Specific Health, Safety and Environment program detailing handling of hazardous materials and proposed disposal alternatives for hazardous waste at the site.

.4 All waste must be removed from the property as soon as possible and disposed of following all Federal, Provincial and Municipal Regulations.

.5 Hazardous waste materials must be properly identified, handled, stored, and transported in accordance with all applicable legislation (i.e. Transportation of Dangerous Goods, Labour code, Occupational Health and Safety, etc.).

.6 Co-operate fully with the on-site Abatement Consultant in confirming work areas and methods to be used in performing work. Assist the on-site

Abatement Consultant in confirming the extent and specific location of hazardous materials.

.7 Co-operate fully with the Cypress County in obtaining access to the building and work areas, as well as in scheduling work.

.8 Use of permanent building power will be available during the work unless noted otherwise in the contract documents.

.9 The water supply within the building will be available for the Contractor's use unless noted otherwise in the contract documents.

.2 Hazardous Materials

.1 Asbestos

.1 Removal of articles remaining in the facility at commencement of the work is the responsibility of Contractor.

.2 Wipe down or HEPA vacuum all loose articles and equipment prior to asbestos removal work.

.3 Remove and dispose of all asbestos-containing materials identified in the *Pre-demolition Hazardous Materials Survey* in accordance with the applicable Sections of this Specification. Contractor is responsible for the verification and removal of all asbestos-containing materials prior to any demolition work that has the potential to disturb such materials.

.4 The removal of all asbestos-containing materials must be conducted in accordance with the requirements of 'The Regulations' and Sections 02 82 00.01. of the Contract Documents.

.2 Lead

.1 Remove and dispose of all lead-containing materials in accordance with the applicable Sections (Section 02 83 10). Contractor is responsible for the verification and removal of all lead-containing materials.

.2 Grinding, cutting or demolition of materials containing lead shall be completed only with appropriate dust control measures (i.e. application of water), proper respiratory protection and adequate worker safety protection. Fume generating activities should not be utilized for removal.

.3 Mercury

.1 Collect and recycle all mercury contained in temperature control/monitoring equipment.

.2 Mercury is expected to be present in fluorescent light tubes and confirmed to be present in thermostats, and are encouraged to be recycled. Adequate ventilation shall be required if breakage of a large amount of fluorescent light tubes occur.

.4 Mould

.1 Contractor is responsible for the verification, removal and disposal of all materials impacted by mould.

.5 PCBs

.1 Contractor is responsible for the verification and removal of all PCB-containing materials.

.6 ODSs

.1 Contractor is responsible for the verification and removal of all ODS-containing equipment.

.7 RAMs

.1 Contractor is responsible for the verification and removal of all radioactive-containing materials.

.8 Silica

.1 Construction disturbance of silica-containing products may result in excessive exposure to air-borne silica, especially if performed indoors.

.2 Grinding, cutting or demolition of materials containing silica shall be completed only with appropriate dust control measures (i.e. application of water), proper respiratory protection and adequate worker safety protection.

1.7 ACTION AND INFORMATIONAL SUBMITTALS

.1 Contractor shall be responsible for procurement and payment of all permits and inspections required to complete the decommissioning from the appropriate authorities. Submit copies of all permits and certifications to the Owner's representative.

.2 Site Specific Health and Safety Plan for the removal of all Hazardous Materials from the facility.

.3 Permits for transportation of and location of landfill or receiver for all hazardous materials waste.

.4 Names and credentials of the:

.1 Asbestos Abatement Superintendent.

.2 Shift Superintendents.

.5 Proof in the form of a certificate that every supervisor of a worker involved in an asbestos operation has successfully completed an appropriate supervisor training program.

.6 Proof with references that supervisory personnel have performed supervisory functions on at least five (5) other asbestos remediation projects.

.7 Proof that workers have received WHMIS and asbestos training.

.8 Worker's Compensation Board status and transcription of insurances.

.9 Documentation including test results, fire and flammability data, and Material Safety Data Sheets for chemicals or material used in the course of the Project.

.10 Certificate proving that each worker on-site has been fit tested for the respirator appropriate for the work being performed.

.11 Asbestos Project Notification Form

.12 Certificates of destruction for PCB ballasts, if present.

1.8 NOTIFICATION

.1 Submit an Asbestos Project Notification Form to Occupational Health and Safety within 72 hours before starting the project.

.2 Notify Landfill site as per appropriate provincial and municipal environmental regulations.

.3 Inform all Trade Subcontractors of the presence of ACM identified in the contract documents.

.4 Ensure all necessary permits for asbestos work, variance, demolition, etc. are posted at the site prior to start of work.

1.9 QUALITY ASSURANCE

.1 Ensure the removal and handling of Hazardous Materials or contaminated materials are performed by persons experienced in the methods, procedures and industry practices of asbestos abatement. Every worker must be trained and instructed in the safe handling, use and disposal of any substances (such as chemicals) used in working with asbestos, are provided with MSDS for these substances, informed of the health hazards with exposure to asbestos fibres and can demonstrate competency in doing their work.

.2 Ensure work proceeds to schedule, meeting all requirements of this specification.

.3 Complete work so that at no time airborne asbestos, visible solid residue, or water runoff contaminates areas outside the Work Area. Consultant is empowered to order a shutdown of work when a leak has been detected or is likely to occur, at no cost to the Owner.

.4 All work of this section involving electrical, mechanical, carpentry, glazing etc., shall be performed by licensed persons experienced and qualified for the work required.

.5 The Owner or Consultant will not be responsible for and will not have control or in charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs required for the Work in accordance with the applicable construction safety legislation, other regulations or general construction practice. The Owner or Consultant will not be responsible for or have control or charge over the acts or omissions of the Asbestos Abatement Contractor, his Subcontractors or their agents, employees or other persons performing any of the Work.

1.10 SITE CONDITIONS

.1 General

.1 The work areas will be unoccupied prior to the start of decommissioning unless noted otherwise in the contract documents.

.2 The water supply within the building will be available for the Contractor's use unless noted otherwise in the contract documents.

.3 Use of permanent building power will be available during the work unless noted otherwise in the contract documents.

.4 The report entitled *Hazardous Materials Building Assessment, 78 South Railway Avenue, Irvine, Alberta"* forms part of the Site Conditions of this

Section of the Specification. The aforementioned report is listed in Appendix A of the Specifications. This report will be referred to in the Specifications as the "Hazardous Building Materials Report".

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

.1 All materials and equipment brought to work site must be in good condition and free of asbestos, asbestos debris, and fibrous materials. Disposable items must be of new materials only.

.2 Asbestos Waste Container: An impermeable container acceptable to disposal site, and identifying its contents, hazards and necessary precautions for handling the waste materials. Comprised of one of the following:

.1 A 6 mil (0.15 mm) sealed polyethylene bag, inside a second 6 mil (0.15 mm) sealed polyethylene bag.

.2 A 6 mil (0.15 mm) sealed polyethylene bag, positioned inside or outside a rigid sealed container of sufficient strength to prevent perforation of the container during filling, transportation and disposal.

.3 Flexible Ducting: Tubing with metal reinforcement or approved equal. Diameter to equal negative air unit discharge.

.4 Ground Fault Panel: Electrical panel, installed by licensed electrician and equipped as follows:

.1 Ground fault circuit interrupters of sufficient capacity to power temporary electrical equipment and lights in Asbestos Work Area.

.2 Interrupters to have a 5 mA ground fault protection.

.3 Necessary accessories including main switch disconnect, ground fault interrupter lights, test switch to ensure unit is working, and reset switch.

.4 Openings sealed to prevent moisture or dust penetration.

.5 HEPA Vacuum: Vacuum with necessary fittings, tools and attachments. Discharged air must pass through a HEPA filter.

.6 Lock-down Agent: Sealant for purpose of trapping residual dust. Product must have flame spread and smoke development ratings both less than 50. Product shall leave no stain when dry. Lock-down agent shall be compatible with replacement insulation or fireproofing where required and capable of withstanding service temperature of substrate.

.7 Negative Air Unit: Portable air handling system, which extracts air directly from the Asbestos Work Area and discharges the air to the exterior of the building. Equipped as follows:

.1 Prefilter and HEPA filter: Air must pass HEPA filter before discharge.

.2 Pressure differential gauge to monitor filter loading.

.3 Auto shut off and warning system for HEPA filter failure.

.4 Separate hold down clamps to retain HEPA filter in place during change of prefilter.

.8 Polyethylene Sheeting: 6 mil (0.15 mm) minimum thickness unless otherwise specified, in sheet size to minimize joints. New Materials Only.

.9 Polyurethane Foam: Slow expanding one (1) component foamed-in place polyurethane rigid insulation.

.10 Protective Coveralls: Disposable full body coveralls complete with hoods manufactured of a material, which does not permit penetration of asbestos fibres.

.11 Rip-Proof Polyethylene Sheeting: minimum requirements: 8-mil (0.20 mm) fabric made up from 5-mil (0.13 mm) weave and 2 layers of 1.5-mil (0.05 mm) poly laminate or approved equal. In sheet size to minimize on-site seams and overlaps. New Materials Only.

.12 Sprayer: Garden reservoir type, low velocity, capable of producing mist or fine spray.

.13 Wetting Agent: Non-sudsing surface-active agent. Acceptable product Aqua-Gro or approved equivalent.

PART 3 EXECUTION

3.1 ASBESTOS-CONTAINING MATERIALS

.1 Risk Assessment

Asbestos-Containing Materials	Abatement Risk Level Category	Percent (%) and Asbestos Fiber Types
Insulation In Cavities Of Concrete Block	High	<0.25% Tremolite
Textured Finish	Moderate	2% Chrysotile
Parging	Moderate	<1% to 2% Chrysotile
Drywall Joint Compound	Moderate to High	2% Chrysotile
Ceiling Insulation	High	20% Chrysotile
Vinyl Floor Tiles	Low	2% Chrysotile
Vinyl Sheet Flooring	Low	20% Chrysotile
Mastic Underneath the Tiles	Low	3% Chrysotile
Mastic on Roof	Low	8% Chrysotile
Joint Tape Compound	Low	5% Chrysotile
Black Tar	Moderate	3% Chrysotile

**All risk levels may change based on-site specific risk assessments and contractor's procedures.*

.1 Upon determining contractors work procedures, a site specific risk assessment should be conducted on each of the above noted materials. The following risk assessment details are outlined below.

.2 A respirator selection form should be completed/consulted when determining the specific respirator for the type of asbestos removal as exposure limits vary per site and per respirator.

.2 Wall and Ceiling Insulation

.1 Removal of asbestos-containing insulation in cavities of concrete block walls and ceiling insulation can be completed following High Risk asbestos

abatement procedures, provided the work is done using non-powered hand held tools, as per Section 02 82 00.03 and 'The Regulations'.

.3 Textured Finish, Parging, Drywall Joint Compound, and Black Tar

.1 Removal of asbestos-containing stucco, parging, drywall joint compound, black tar can be completed following Moderate Risk asbestos abatement procedures, provided the work is done using non-powered hand held tools, as per Section 02 82 00.02 and 'The Regulations'.

.2 If non-powered handheld tools cannot be utilized to perform the removal of the stucco, parging and drywall joint compound follow High Risk Asbestos Abatement instructions as per Section 02 82 00.03 and 'The Regulations'.

.4 Vinyl Floor Tiles and Vinyl Sheet Flooring

.1 Removal of asbestos-containing vinyl floor tiles with or without mastic underneath the tiles and vinyl sheet flooring can be completed following Low Risk asbestos abatement procedures, provided the work is done using non-powered hand held tools, as per Section 02 82 00.01 and 'The Regulations'.

.2 Floor tiles without asbestos backing or asbestos containing adhesives or leveling compound under the tiles not need to be removed prior to demolition.

.5 Mastic and Joint Tape Compound

.1 Removal of asbestos-containing mastic on roof and joint tape compound can be completed following Low Risk asbestos abatement procedures, provided the work is done using non-powered hand held tools, as per Section 02 82 00.01 and 'The Regulations'.

3.2 METAL-CONTAINING PAINTS

.1 It is the contractor's responsibility to determine the type of lead removal required to complete their work, if the metal-containing paints identified in the Hazardous Materials Report are to be disturbed or removed. Depending on the contractor's removal procedures, Sections (Section 02 83 10) of this Specification must be followed.

3.3 GENERAL

.1 Asbestos abatement work area isolation and work procedures shall be completed as per specifications in related sections.

.2 The removal methodology of asbestos-containing materials shall comply with recommendations in:

.1 *Hazardous Building Materials Report*; and

.2 'The Regulations'

.3 Any stored items (e.g. equipment, tools, supplies, stored materials etc.) shall be moved from a work area by the Contractor to an on-site location identified by the Owner's Representative.

.4 Any large non-porous items in work areas (e.g. garbage, debris, etc.) may be decontaminated and treated as non-asbestos waste (e.g. concrete blocks, wood, cans, etc.)

.5 Post warning signs stating Abatement work in progress, and type of Abatement (i.e. asbestos) at entrances to the work area, and on entrances to the individual work enclosures

.6 All work completed at heights (e.g. via ladders, working platforms, scaffolding, planking, etc.) shall comply with Occupational Health & Safety Act. Contractor shall implement and maintain appropriate access to elevated work areas and implement and maintain appropriate safety precautions (e.g. travel restraint, fall arrest, etc.).

.7 Establish negative air pressure for Moderate to High-Risk asbestos abatement work.

.8 At no time shall asbestos waste bags be left openly visible to non-abatement workers or public. Waste shall remain covered & concealed at all times.

.9 Include for Base Building Emergency Response Services, for entry into any Type of abatement work area, while Abatement set-up is in place. Emergency response shall include all labour and administration costs required to troubleshoot and rectify power related conditions.

.10 Protect all surfaces, building fabric and items not affected by work of this project (e.g. electrical, pneumatic lines, gauges, valves, sensors, etc.).

.11 Replace or repair any items damaged during work of this project.

3.4 SUPERVISION

.1 Provide onsite, a Superintendent dedicated solely to the project, with authority to oversee all aspects of the work, including but not limited to, estimating and negotiation of changes to the contract, update of submission requirements, scheduling, manpower and equipment requirements, and direct communication and co-ordination with Owner or Consultant.

.2 Supervisory personnel must have appropriate supervisor training and have supervised a minimum of five (5) other asbestos abatement projects.

.3 The Superintendent must be on-site at all times during work at risk of disturbing ACM and other hazardous materials. Failure to comply with this requirement will result in a stoppage of all work at no cost to the Owner.

.4 Replace supervisory personnel, with approved replacements, within 3 working days of a written request from the Owner. Owner reserves the right to request replacement of supervisory personnel without explanation.

.5 Abatement Contractor cannot replace supervisory personnel without written approval from the Owner.

END OF SECTION

PART 1 GENERAL

.1 Read this section in conjunction with all other sections so as to comply with the requirements of the General Conditions of the Contract.

.2 The site conditions identify the locations and condition of all known asbestos-containing materials projected to be disturbed by the work of this contract. The specification fulfills the requirements of the report required by the Section 34 of the Alberta Occupational Health and Safety Act, Regulations and Code (Government of Alberta, 2009) and Section 3.2.2 of the Alberta Asbestos Abatement Manual (Government of Alberta, 2012) hereafter referred to as 'The Regulations'.

.3 Unless otherwise shown or specified it is the intent that Work performed as per this Section will result in the removal and disposal or decontamination of all asbestos-containing materials (ACMs) and all materials, which have been contaminated by ACMs.

1.1 SECTION INCLUDES

.4 Comply with requirements of this Section when performing following work:

.1 Removing non-friable ACMs (that are in good condition), if the material can be removed without being broken, cut, sanded, abraded, ground down, vibrated or otherwise fragmented, or disturbed in such a way that asbestos fibres may be released.

.2 Removing non-friable ACMs in proximity to friable asbestos that does not require contacting the friable asbestos.

.3 Break, cut, grind, sand, drill, scrape, vibrate or abrade non-friable asbestos-containing materials using non-powered hand-held tools, and the material is wetted to control the spread of dust or fibres.

.5 Requirements and procedures for asbestos abatement of the interior and exterior mastic, exterior joint tape compound, and interior vinyl floor tiles and vinyl floor sheeting.

1.2 RELATED REQUIREMENTS

.1 Section 02 81 01 - Hazardous Materials

.2 Section 02 83 10 – Lead – Base Paint Abatement – Minimum Precautions

1.3 REFERENCES

.1 Comply with federal, provincial, and local requirements, provided that in any case of conflict among those requirements or with these Specifications the more stringent requirements shall apply. Work shall be performed under regulations in effect at the time work is performed. All current amendments to regulations apply. Regulations include but are not limited to the following:

.1 Alberta Environment. *Guidelines for the Disposal of Asbestos Waste*, 1989.

.2 Government of Alberta. *Occupational Health and Safety Act, Regulations and Code*, 2009.

.3 Government of Alberta. *Alberta Asbestos Abatement Manual, Employment and Immigration*, 2012.

.4 Government of Alberta [March 2017], *Transportation of Asbestos as a Waste.* Dangerous Goods, Rail Safety & 511 Alberta.

.5 Government of Canada, *Transportation of Dangerous Goods Regulations,* SOR/2017-137 for the transport of asbestos waste.

.6 Alberta Government. (2017). *Asbestos at the Work Site.*

1.4 DEFINITIONS

.1 Amended Water: water with non-ionic surfactant wetting agent added to reduce water tension to allow thorough wetting of fibres.

.2 Asbestos-Containing Material (ACM): material identified under Site Conditions and over spray, fallen material and settled dust.

.3 Asbestos Work Area: area where work takes place which will, or may, disturb ACM's.

.4 Authorized Visitors: consultants, and representatives of regulatory agencies.

.5 Competent Worker: in relation to specific work, means a worker who:

.1 Is qualified because of knowledge, training and experience to perform the work.

.2 Is familiar with the provincial and the federal laws and with the provisions of the regulations that apply to the work.

.3 Has knowledge of all potential or actual danger to health or safety in the work.

.6 Friable material: means material that:

.1 When dry, can be crumbled, pulverized or powdered by hand pressure, or

.2 is crumbled, pulverized or powdered.

.7 HEPA Vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.

.8 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.

.9 Occupied Area: any area of the building or work site that is outside Asbestos Work Area.

.10 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.

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

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit an Asbestos Project Notification Form to Occupational Health and Safety within 72 hours of the work including set-up operations.

.2 Submit proof satisfactory to Owner Representative that suitable arrangements have been made to dispose of asbestos-containing waste in accordance with requirements of authority having jurisdiction.

.3 Submit proof of Contractor's Asbestos Liability Insurance.

.4 Submit Workers Compensation Board status and transcription of insurance.

.5 Submit to Consultant procedures to deal with emergencies such as fire or injuries.

.6 Submit to Owner Representative necessary permits for transportation and disposal of asbestos-containing waste and proof that asbestos-containing waste has been received and properly disposed.

.7 Submit proof that all asbestos workers and/or supervisor have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene and work practices while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing. Submit proof of asbestos abatement course attendance, of not less than two days duration.

.8 Submit proof satisfactory to Owner Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with federal, provincial, and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.

.2 Health and Safety:

.1 Safety Requirements: worker protection.

.1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area include:

.1 NOISH-approved air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to provincial authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.

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

.3 Personal protective equipment appropriate to the other hazards present at the Asbestos Work Areas.

.2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.

.3 Before leaving Asbestos Work Area, the worker can decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing, or, if the protective clothing will not be reused, place it in a container for dust and waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.

.4 Facilities for washing hands and face shall be provided within or close to the Asbestos Work Area.

.5 Ensure workers wash hands and face when leaving Asbestos Work Area utilizing the facilities for washing.

.6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Place materials defined as hazardous or toxic in designated containers.

.4 Handle and dispose of hazardous materials in accordance with the TDG, regional and municipal regulations.

.5 Fold up metal banding, flatten and place in designated area for recycling (if applicable).

.6 Disposal of asbestos waste generated by removal activities must comply with federal, provincial and municipal regulations. Dispose of asbestos waste in sealed double thickness 6 mils bags or leak proof drums. Label containers with appropriate warning labels.

.7 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

.1 General

.1 The work areas will be unoccupied prior to the start of decommissioning unless noted otherwise in the contract documents.

.2 The water supply within the building will be available for the Contractor’s use unless noted otherwise in the contract documents.

.3 Use of permanent building power will be available during the work unless noted otherwise in the contract documents.

.2 Notify Owner Representative of suspect asbestos-containing materials discovered during Work that were not apparent from drawings, specifications, or reports pertaining to Work. Do not disturb such material until instructed by Owner Representative.

1.9 SCHEDULING

.1 Hours of Work: perform work involving abatement as per agreement with Owner Representative.

1.10 PERSONNEL TRAINING

.1 Before beginning Work, provide Owner Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, following minimum requirements:

.1 Fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by a competent, qualified person.

.4 Supervisory personnel to complete required training.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Drop Sheets:

.1 Polyethylene: 6 mil (0.15 mm) thick.

.2 FR polyethylene: 6 mil (0.15 mm) thick woven fibre reinforced fabric bonded both sides with polyethylene.

.2 HEPA Vacuum: Vacuum with necessary fittings, tools and attachments. Discharged air must pass through a HEPA filter.

.3 Protective Coveralls: Disposable full body coveralls complete with hoods manufactured of a material, which does not permit penetration of asbestos fibres.

.4 Slow - drying Sealer: Non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.

.5 Sprayer: Garden reservoir type, low velocity, capable of producing mist or fine spray.

.6 Tape: Fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

.7 Waste Containers: Contain waste in two separate containers.

.1 Inner container: 6 mil (0.15 mm) thick sealable polyethylene waste bag.

.2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 6 mil (0.15 mm) thick sealable polyethylene bag.

.3 Labelling requirements: affix pre-printed cautionary asbestos warning in both official languages that is visible when ready for removal to disposal site.

.8 Wetting Agent: Non-sudsing surface-active agent. Acceptable product Aqua-Gro or approved equivalent.

PART 3 EXECUTION

3.1 SUPERVISION

.1 Barrier and warning signs should be placed in the Work Areas if the access needs to be restricted.

3.2 PROCEDURES

.1 Workers involved in low risk work activities should have knowledge of asbestos and the location of the materials in proximity.

.2 Employers must ensure that all workers have been instructed of any work procedures restrictions needed to prevent disturbing asbestos-containing materials.

.3 Before beginning Work, isolate Asbestos Work Area using, minimum, preprinted cautionary asbestos warning signs in both official languages that are visible at access routes to Asbestos Work Area.

.4 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.

.1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in Asbestos Work Area where dust and contamination cannot otherwise be safely contained. Drop sheets are not to be reused.

.5 Wet materials containing asbestos to be cut, ground, abraded, scraped, drilled, or otherwise disturbed unless wetting creates hazard or causes damage.

.6 Spray all ACMs with Amended Water using airless spray equipment. Saturate ACM to prevent release of airborne fibres during removal.

.7 Frequently and at regular intervals during Work and immediately on completion of work:

.1 Dust and waste to be cleaned up and removed using a vacuum equipped with a HEPA filter, or by damp mopping or wet sweeping, and placed in a waste container.

.2 Drop sheets to be wetted and placed in a waste container as soon as practicable.

.3 Do not use compressed air to clean up or remove dust from any surface.

.8 Cleanup:

.1 Place dust and asbestos-containing waste in sealed dust-tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste; wet and fold these items to contain dust, and then place in plastic bags.

.2 Clean exterior of each waste-filled bag using damp cloths or HEPA vacuum and place in second clean waste bag immediately prior to removal from Asbestos Work Area.

.3 Seal waste bags and remove from site. Dispose of in accordance with requirements of provincial/territorial and federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that the appropriate guidelines and regulations for asbestos disposal are followed.

.4 Work Area will be subject to visual inspection. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.

3.3 AIR SAMPLING

.1 Owner Representative is required measure fibre content of air outside work areas by means air samples analyzed by Phase Contrast Microscopy (PCM).

.1 Initial baseline sampling is required during the abatement activities. If these results shows fibre levels below of 0.01 f/cc, further monitoring is not required.

.2 General Air Monitoring

.1 Air monitoring must be performed using Phase Contrast Microscopy (PCM) following the National Institute for Occupational Safety and Health method 7400.

.2 It is not an accepted industry practice for asbestos abatement (or other) contractors to perform their own asbestos air monitoring. As such, cooperate with the Asbestos Abatement Consultant in collection of air samples, including providing workers to wear sampling pumps for up to full-shift periods. Asbestos Abatement Contractor to exercise care with Asbestos Abatement Consultant's equipment. The Owner reserves the right to back-charge the Asbestos Abatement Contractor for further collection of samples damaged by tampering or abuse. In addition, the Asbestos Abatement Contractor will be responsible for the cost of testing equipment repairs resulting from the actions of the Asbestos Abatement Contractor's staff.

.3 The following types of air samples will be collected by the Asbestos Abatement Consultant (unless otherwise noted):

.1 Ambient Air Sampling

.2 Initial Baseline Air Sampling

.4 If the results of PCM samples that show airborne concentrations of fibres above background levels or exceed 0.01 f/cc:

.1 Stop Work and correct procedures.

.5 Cost of additional inspection and sampling performed as a result of elevated fibre levels in areas outside the Asbestos Work Area may be charged to the Asbestos Abatement Contractor at the Owner's discretion.

END OF SECTION

PART 1 GENERAL

Read this section in conjunction with all other sections so as to comply with the requirements of the General Conditions of the Contract.

Where there is conflict of information and/or requirements specified between the specification, reports and drawings, the most stringent shall apply.

1.1 SECTION

.1 Comply with requirements of this Section when disturbing and/or removing lead containing paints and materials. The following activities are low-risk activities:

.2 Comply with requirements of this Section when disturbing and/or removing lead containing paints and materials providing that operations are limited to:

- .1 Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap, if required.
- .2 Removal of lead-containing coatings or materials using a power tool with an effective dust collection system equipped with a HEPA filter, if required.
- .3 Removal of lead-containing coatings or materials with non-powered hand tool, other than manual scraping and sanding, if required.
- .4 Installing or removing sheet metal that contains lead.
- .5 Operating an excavator (within the cab) during building demolition.
- .6 Transporting sealed containers of lead waste.
- .7 Work operations that generate an airborne lead concentration of less the eight-hour exposure limit of 0.05mg/m^3.

1.2 RELATED REQUIREMENTS

.1 Section 02 81 01 - Hazardous Materials

.2 Section 02 82 00.01 – Asbestos Abatement – Minimum Precautions

1.3 REFERENCES

.1 Government of Alberta.

- .1 Occupational Health and Safety Act, Regulations and Code, 2009.

.2 Government of Alberta.

- .1 OHS Code Explanation Guide. Part 4 Chemical Hazards, Biological Hazards and Harmful Substances - Section 41 Lead exposure control plan.

.3 Government of Alberta.

.1 Occupational Health And Safety Bulletin, Lead At The Work Site (2013). Employment and Immigration.

.4 Government of Canada. 2016.

.1 Canadian Consumer Product Safety Act, Surface Coatings Materials Regulations (Lead), SOR/2016-193.

.5 WorkSafeBC

.1 Lead-Containing Paints and Coatings. Preventing Exposure in the Construction Industry (2013)

.6 Ontario Ministry of Labour

.1 Occupational Health and Safety Branch, Guideline Lead On Construction Projects, September 2004, and O. Reg. 490/09 respecting Designated Substances - Lead made under the Occupational Health and Safety Act as amended by O. Reg. 148/12 and O. Reg. 149/12.

.7 Department of Justice Canada

.1 Canadian Environmental Protection Act, 1999 (CEPA).

.8 Health Canada

.1 Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS).

.9 Human Resources and Social Development Canada (HRSDC)

.1 Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.

.10 Transport Canada

.1 Transportation of Dangerous Goods Act, 1992 (TDGA).

.11 U.S. Environmental Protection Agency (EPA)

.1 EPA 747-R-95-007-[1995], Sampling House Dust for Lead.

.12 U.S. Department of Labour - Occupational Safety and Health Administration (OSHA) - Toxic and Hazardous Substances

.1 Lead in Construction Regulation - 29 CFR 1926.62-1993.

.13 Pre-Demolition Hazardous Materials Survey, Marshall Yard, Plan 9612511, Block 6, Lot 3, Medicine Hat, Alberta conducted by WSP Canada Inc., dated July 2017.

1.4 DEFINITIONS

.1 HEPA Vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.

.2 Authorized Visitors: Owner's Representative or designated representatives.

.3 Polyethylene: Polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects over cuts and tears, and elsewhere as

required to provide protection and isolation. For protection of underlying surfaces from damage and to prevent lead dust entering in clean area.

.4 Sprayer: Garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.

.5 Action Level: Employee exposure, without regard to use of respirators, to airborne concentration of lead of 50 micrograms per cubic meter of air (50 ug/m³) calculated as 8-hour time-weighted average (TWA). Minimum precautions for lead abatement are based on airborne lead concentrations less than 0.05 milligrams per cubic meter of air for removal of lead-based paint by methods noted in paragraph 1.1.

.6 Competent Person: Owner's Representative capable of identifying existing lead hazards in workplace taking corrective measures to eliminate them.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with applicable Sections.

.2 Provide proof satisfactory to Owner’s Representative that suitable arrangements have been made to dispose of lead-based paint waste in accordance with requirements of authority having jurisdiction.

.3 Provide proof of Contractor's General and Environmental Liability Insurance.

.4 Quality Control:

.1 Provide Owner's Representative necessary permits for transportation and disposal of lead-based paint waste and proof that lead-based paint waste has been received and properly disposed.

.2 Provide proof satisfactory to Owner's Representative that employees have had instruction on hazards of lead exposure, respirator use, dress, and aspects of work procedures and protective measures.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to lead paint, in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.

.2 Health and Safety:

.1 Do construction occupational health and safety with applicable Sections.

.2 Safety Requirements: worker and visitor protection.

.1 Worker Protection:

.1 Protective equipment and clothing to be worn by workers in accordance with the level of risk of the activity.

.1 Respirator NIOSH approved and equipped with replaceable HEPA filter cartridges with an assigned protection factor of 10, acceptable to Authority having jurisdiction. Suitable for type of lead and level of lead dust exposure. Provide sufficient amount of filters.

.2 Half mask respirator: half-mask particulate respirator with P-series filter, and 100% efficiency could be provided.

.2 Eating, drinking, chewing, and smoking are not permitted in work area.

.3 Ensure workers wash hands and face when leaving work area.

.4 Remove gross contamination from clothing before leaving work area. Place contaminated work suits in receptacles for disposal with other lead-contaminated materials. Leave reusable items except respirator in Equipment and Access Room. When not in use in Work Area, store work footwear in Equipment and Access Room. Upon completion of lead abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from Work Area or from Equipment and Access Room.

.5 Enter unloading room from outside dressed in clean coveralls to remove waste containers and equipment from Holding Room of Container and Equipment Decontamination Enclosure system. Workers not to use this system as means to leave or enter work area.

.6 Ensure workers are fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual lead abatement.

.7 Ensure workers wash hands and face when leaving Work Area.

.8 Provide and post in Clean Change Room and in Equipment and Access Room the procedures described in this Section, in both official languages.

.9 Ensure no person required to enter Work Area has facial hair that affects seal between respirator and face.

.2 Visitor Protection:

.1 Provide protective clothing and approved respirators to Authorized Visitors to Work Areas.

.2 Instruct Authorized Visitors in use of protective clothing, respirators and procedures.

.3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Work Area.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with applicable Sections.

.2 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.

.3 Disposal of lead waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of lead waste in sealed double thickness 0.152 mm thick bags or leak proof drums. Label containers with appropriate warning labels.

.4 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

.1 Information pertaining to lead-containing/based paint to be handled, removed, or otherwise disturbed and disposed of during this project, including the report entitled *Hazardous Materials Building Assessment, 78 South Railway Avenue, Irvine, Alberta. Prepared By: Square One Consulting Ltd., April 26, 2024.* The report is listed in Appendix A of the Specifications. This report is for general information only and it is not necessarily representative of all the lead and metal-containing materials covered within the scope of this Project.

.2 Notify Owner Representative of lead-based paint discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Owner Representative.

1.9 SCHEDULING

.1 Inform sub trades of presence of lead-containing materials identified in Existing Conditions.

.2 Notify Landfill authorized to accept hazardous wastes including lead-based and metal-based paints as per appropriate provincial and municipal environmental regulations.

.3 Provide Owner's Representative copy of notifications prior to start of Work.

.4 Ensure all necessary permits for lead work, variance, demolition, etc. are posted at the site prior to start of work.

.5 Submit to Owner Representative or a Third Party Consultant copy of notifications prior to start of Work.

.6 Hours of Work: perform work involving abatement as per agreement with Owner Representative or a Third Party Consultant.

1.10 OWNER'S INSTRUCTIONS

.1 Provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene, in aspects of work procedures, and in use, cleaning, and disposal of respirators.

.2 Instruction and training related to respirators includes, at minimum:

.1 Proper fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by competent, qualified person.

.4 Supervisory personnel to complete required training.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Polyethylene: 0.15 mm unless otherwise specified; in sheet size to minimize joints.

.2 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under dry conditions and wet conditions using amended water.

.3 Slow - drying Sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for trapping residual lead paint residue.

.4 Lead Waste Containers: fibre type acceptable to dump operator with tightly fitting covers and 0.15 mm sealable polyethylene liners.

.1 Label containers with pre-printed bilingual cautionary Warning Lead clearly visible when ready for removal to disposal site.

PART 3 EXECUTION

3.1 SUPERVISION

.1 Approved Supervisor must remain within Lead Work Area during disturbance, removal, or other handling of lead based paints.

3.2 PREPARATION

.1 Remove and store items to be salvaged or reused.

.1 Protect and wrap items and transport and store in area specified by Owner Representative or a Third Party Consultant.

.2 Work Area:

.1 Shut off and isolate HVAC system to prevent dust dispersal into other building areas. Conduct smoke tests to ensure duct work is airtight.

.2 Washing facilities must be provided, including wash basins, warm water, soap, and disposable towels.

.3 Pre-clean fixed casework and equipment within work area, using HEPA vacuum and cover and seal with polyethylene sheeting and tape.

.4 Clean work area using HEPA vacuum. If not practicable, use wet cleaning method. Do not raise dust.

.5 Seal off openings with polyethylene sheeting and seal with tape.

.6 Maintain emergency fire exits or establish alternatives satisfactory to Authority having jurisdiction.

.7 Protect floor surfaces covered from wall to wall with polyethylene sheets.

.8 Where water application is required for wetting lead-containing materials, provide temporary water supply appropriately sized for application of water as required.

.9 Provide electrical power and shut off for operation of powered tools and equipment. Provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical cables and equipment.

.3 Do not start work until:

.1 Arrangements have been made for disposal of waste.

.2 Tools, equipment, and materials waste containers are on-site.

.3 Arrangements have been made for building security.

.4 Notifications have been completed and preparatory steps have been taken.

3.3 ABATEMENT

.1 Remove lead-based paint in small sections and pack as it is being removed in sealable 0.15 mm plastic bags and place in labelled containers for transport.

.2 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to staging area. Clean external surfaces thoroughly again by wet sponging. Wash containers thoroughly pending removal to outside. Ensure containers are removed by workers who have entered from uncontaminated areas dressed in clean coveralls.

.3 After completion of work, wire brush and wet sponge surface from which lead-based paint has been removed to remove visible material. During this work keep surfaces wet.

.4 After wire brushing and wet sponging to remove visible lead-based paint, and after lead-containing material impossible to remove, wet clean entire work area, and equipment used in process. After inspection by Owner Representative or a Third Party Consultant apply continuous coat of slow drying sealer to surfaces of work area. Do not disturb work area for 8 hours no entry, activity, ventilation, or disturbance during this period.

3.4 INSPECTION

.1 Perform inspection to confirm compliance with specification and governing authority requirements. Deviations from these requirements not approved in writing by Owner Representative or a Third Party Consultant will result in work stoppage, at no cost to Owner.

.2 Owner Representative or a Third Party Consultant will inspect work for:

.1 Adherence to specific procedures and materials.

.2 Final cleanliness and completion.

.3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

3.5 FINAL CLEANUP

.1 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible lead containing particles observed during cleanup, immediately, using HEPA vacuum equipment.

.2 Place polyethylene drop sheets seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.

.3 The work area should be kept clean, and compressed air or dry sweeping should not be used to remove dust.

.4 Dust and waste should be cleaned up and placed in marked lead-waste containers that are dust tight.

.5 Clean-up Work Areas, Equipment and Access Room, and other contaminated enclosures.

.6 Clean-up sealed waste containers and equipment used in Work and remove from work areas.

.7 Conduct final check to ensure no dust or debris remains on surfaces as result of dismantling operations.

.8 Workers should remove all work clothes and shoes at the end of the work day and leave them at work.

3.6 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

.1 Repair or replace objects damaged in course of work to their original state or better, as directed by Owner Representative or a Third Party Consultant.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

.1 Section Includes:

.1 Materials and installation for piping, valves and fittings for gas fired equipment.

1.2 REFERENCES

.1 American Society of Mechanical Engineers (ASME)

.1 ASME B16.5-03, Pipe Flanges and Flanged Fittings.

.2 ASME B16.18-01, Cast Copper Alloy Solder Joint Pressure Fittings.

.3 ASME B16.22-01, Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings.

.4 ASME B18.2.1-96, Square and Hex Bolts and Screws Inch Series.

.2 American Society for Testing and Materials International (ASTM)

.1 ASTM A 47/A 47M-99(2004), Standard Specification for Ferritic Malleable Iron Castings.

.2 ASTM A 53/A 53M-04, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless.

.3 ASTM B 75M-99, Standard Specification for Seamless Copper Tube Metric.

.4 ASTM B 837-01, Standard Specification for Seamless Copper Tube for Natural Gas.

.3 Canadian Standards Association (CSA International)

.1 CSA W47.1-03, Certification of Companies for Fusion Welding of Steel.

.4 Canadian Standards Association (CSA)/Canadian Gas Association (CGA)

.1 CAN/CSA B149.1HB-00, Natural Gas and Propane

.5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submittals in accordance with Section 01 33 23 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's printed product literature, specifications and datasheet for piping, fittings and equipment.

.2 Indicate on manufacturer’s catalogue literature following: valves.

.3 Test Reports: submit certified test reports from approved independent testing laboratories indicating compliance with specifications for specified performance characteristics and physical properties.

.4 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.5 Instructions: submit manufacturer's installation instructions.

.6 Closeout Submittals: submit maintenance and engineering data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.4 QUALITY ASSURANCE

.1 Pre-Installation Meeting:

.1 Convene pre-installation meeting one week prior to beginning work of this Section and on-site installations in accordance with Section 01 32 16- Construction Progress Schedule

.1 Verify project requirements.

.2 Co-ordination with other building subtrades.

.3 Review manufacturer's installation instructions and warranty requirements.

.2 Health and Safety:

1.5 DELIVERY, STORAGE AND HANDLING

.1 Waste Management and Disposal:

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Construction Waste Management and Disposal.

PART 2 PRODUCTS

2.1 PIPE

SPEC NOTE: Use the following paragraph for Private Sector projects.

.1 Steel pipe: to ASTM A 53/A 53M, Schedule 40, seamless as follows:

.1 NPS 1/2 to 2, screwed.

.2 NPS2 1/2 and over, plain end.

.2 Copper tube: to ASTM B 837.

2.2 JOINTING MATERIAL

.1 Screwed fittings: pulverized lead paste.

.2 Welded fittings: to CSA W47.1.

.3 Flange gaskets: non-metallic flat.

.4 Brazing: to ASTM B 837.

2.3 FITTINGS

.1 Steel pipe fittings, screwed, flanged or welded:

.1 Malleable iron: screwed, banded, Class 150.

.2 Steel pipe flanges and flanged fittings: to ASME B16.5.

.3 Welding: butt-welding fittings.

.4 Unions: malleable iron, brass to iron, ground seat, to ASTM A 47/A 47M.

.5 Bolts and nuts: to ASME B18.2.1.

.6 Nipples: schedule 40, to ASTM A 53/A 53M.

.2 Copper pipe fittings, screwed, flanged or soldered:

.1 Cast copper fittings: to ASME B16.18.

.2 Wrought copper fittings: to ASME B16.22.

2.4 VALVES

.1 .1 Provincial Code approved, lubricated plug type.

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 PIPING

.1 Install in accordance with applicable Provincial Codes, CAN/CSA B149.1 supplemented as specified.

.2 Install drip points:

.1 At low points in piping system.

.2 At connections to equipment.

3.3 VALVES

.1 Install valves with stems upright or horizontal unless otherwise approved by Consultant.

.2 Install valves at branch take-offs to isolate pieces of equipment, and as indicated.

3.4 FIELD QUALITY CONTROL

.1 Site Tests/Inspection:

.1 Test system in accordance with CAN/CSA B149.1 and requirements of authorities having jurisdiction.

.2 Manufacturer's Field Services:

.1 Have manufacturer of products supplied under this Section review work involved in handling, installation/application, protection and cleaning of its products, and submit written reports, in acceptable format, to verify compliance of work with Contract.

.2 Provide manufacturer's field services, consisting of product use recommendations and periodic site visits for inspection of product installation, in accordance with manufacturer's instructions.

.3 Schedule site visits to review work at stages listed:

.1 After delivery and storage of products, and when preparatory work on which work of this Section depends is complete, but before installation begins.

.2 Twice during progress of work at 25% and 60% complete.

.3 Upon completion of work, after cleaning is carried out.

.3 Obtain reports within 3 days of review and submit immediately to Consultant.

.4 PV procedures:

.1 Test performance of components.

3.5 ADJUSTING

.1 Purging: purge after pressure test in accordance with CAN/CSA B149.1.

.2 Pre-Start-Up Inspections:

.1 Check vents from regulators, control valves, terminate outside building in approved location, protected against blockage, damage.

.2 Check gas trains, entire installation is approved by authority having jurisdiction.

3.6 CLEANING

.1 Cleaning: CAN/CSA B149.1.

.2 Perform cleaning operations in accordance with manufacturer's recommendations.

.3 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

.1 Not Used.

1.2 WORK INCLUDED

.1 Complete and operational electrical system as required by the drawings and as herein specified.

1.3 REFERENCE STANDARDS

.1 Within the text of these specifications, reference may be made to the following standards:

CSA - Canadian Standards Association

EEMAC - Electrical and Electronic Manufacturers Association of Canada

CEMA - Canadian Electrical Manufacturers Association

IEEE - Institute of Electrical and Electronic Engineers

IPCEA - Insulated Power Cable Engineers Association

ULC - Underwriters Laboratory of Canada

CEC – Canadian Electrical Code

.2 Electrical materials, products and equipment shall be CSA approved and conform with EEMAC standards. Where necessary, obtain local CSA approval.

.3 Equipment, wiring and wiring devices shall meet the requirements of the Current Edition of the Canadian Electrical Code, Part 1, including all bulletins in force at the time of tender submission.

1.4 DRAWINGS AND SPECIFICATIONS

.1 The General Conditions, Supplementary Conditions and Division 01 are a part of this specification and shall apply to this Division.

.2 These specifications and the drawings and specifications of all other divisions shall be considered as an integral part of the accompanying drawings. Any item or subject omitted from either the specifications or the drawings, but which is mentioned or reasonably specified in and by the others, shall be considered as properly and sufficiently specified and shall be provided.

.3 Provide all minor items and work not shown or specified but which are reasonably necessary to complete the Work.

.4 If discrepancies or omissions in the drawings or specifications are found, or if the intent or meaning is not clear, advise the Engineer for clarification before submitting tender.

.5 Responsibility to determine which Division provides various products and work rests with the General Contractor. Additional compensation will not be considered because of differences in interpretation of specifications.

1.5 SALVAGE MATERIALS

.1 All redundant materials from the renovated space indicated on the drawings to be offered to the Owner. If declined, remove from site.

.2 All abandoned wiring and accessible conduits are to be removed.

1.6 FIRE WATCH

.1 If required, twenty-four (24) hour fire watch in areas that are not protected by Fire Alarm system should be provided by the contractor.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Not Required

1.2 INTENT

.1 Provide demonstration and instruction sessions to familiarize Owner's operation and maintenance personnel with electrical systems and their operation and maintenance.

.2 Submit system sign off sheets for each system listed prior to substantial completion.

.3 Complete a motor survey sheet for each motor and submit prior to substantial completion. Include a control wiring diagram for each motor neatly drawn in ladder form. Indicate all terminal and wire numbers. Identify all associated control components. Provide typed copies of these lists and diagrams in the operating/maintenance manuals. Include motor overload selection charts for each type and application of overload relay.

.4 All sign off and survey sheets shall be typewritten.

1.3 MANUFACTURER'S SITE SERVICES

.1 Arrange and pay for appropriately qualified manufacturer's representatives to provide or assist in providing electrical equipment and system demonstration and instruction as specified herein.

1.4 CONTRACTOR/OWNER COORDINATION

.2 Owner will chair demonstration and instruction sessions.

.3 Establish agendas for demonstration and instruction sessions in conjunction with Owner. Coordinate scheduling of sessions with Owner.

PART 2 PRODUCTS – NOT APPLICABLE

PART 3 EXECUTION

3.1 SYSTEMS DEMONSTRATION

.1 Demonstrate operation of following systems:

.1 Transformer

.2 600 Volt Electrical System Normal

.3 208/120 Volt System Normal

.4 Motor Control Starters and Disconnects

.5 Grounding System

.6 Fire Alarm

.7 Lighting

.8 Future Connection Points and integration with concession area HVAC system

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Not Required

1.2 REFERENCES

.1 Canadian Standards Association (CSA)

.1 CAN/CSA C22.2 No. 18-98, Outlet Boxes, Conduit Boxes, and Fittings and Associated Hardware.

.2 CSA C22.2 No. 45-M1981(R1992), Rigid Metal Conduit.

.3 CSA C22.2 No. 56-1977(R1999), Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit.

.4 CSA C22.2 No. 83-M1985(R1999), Electrical Metallic Tubing.

1.3 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 19 – Construction/Demolition Waste Management and Disposal, and with the Waste Reduction Work plan.

PART 2 PRODUCTS

2.1 CONDUITS

.1 Rigid metal conduit: to CSA C22.2 No. 45, hot dipped galvanized steel threaded.

.2 Electrical metallic tubing (EMT): to CSA C22.2 No. 83, with couplings and with expanded ends.

.3 Flexible metal conduit: to CSA C22.2 No. 56, aluminum and liquid-tight flexible metal.

.4 Color coding to match existing on site.

2.2 CONDUIT FASTENINGS

.1 One hole malleable iron straps to secure surface conduits 50 mm and smaller. Two hole steel straps for conduits larger than 50 mm.

.2 Beam clamps to secure conduits to exposed steel work.

.3 Channel type supports for two or more conduits at 1.5m oc.

.4 Threaded rods, 6 mm dia. to support suspended channels.

2.3 CONDUIT FITTINGS

.1 Fittings: manufactured for use with conduit specified. Coating: same as conduit.

.2 Factory "L" where 90 degree bends are required for 25 mm and larger conduits.

.3 Steel couplings/connectors for conduits.

2.4 EXPANSION FITTINGS FOR RIGID CONDUIT

.1 Weatherproof expansion fittings with internal bonding assembly suitable for 100 mm linear expansion.

.2 Watertight expansion fittings with integral bonding jumper suitable for linear expansion and 19 mm deflection in all directions.

.3 Weatherproof expansion fittings for linear expansion at entry to panel.

2.5 FISH CORD

.1 Polypropylene.

PART 3 EXECUTION

3.1 INSTALLATION

.1 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.

.2 Conceal conduits except in mechanical and electrical service rooms.

.3 Use rigid hot dipped galvanized steel threaded conduit where exposed to mechanical damage.

.4 Use electrical metallic tubing (EMT) where not subject to mechanical injury.

.5 Use flexible metal conduit for connection to motors in dry areas, connection to surface or recessed fluorescent fixtures.

.6 Use liquid tight flexible metal conduit for connection to motors or vibrating equipment in damp, wet or corrosive locations.

.7 Minimum conduit size for lighting and power circuits: 19 mm.

.8 Bend conduit cold. Replace conduit if kinked or flattened more than $1/10^{th}$ of its original diameter.

.9 Mechanically bend steel conduit over 19mm dia.

.10 Field threads on rigid conduit must be of sufficient length to draw conduits up tight.

.11 Install fish cord in empty conduits.

.12 Remove and replace blocked conduit sections. Do not use liquids to clean out conduits.

.13 Dry conduits out before installing wire.

.14 All penetrations through walls and floors to be properly sealed with approved fire rated materials.

3.2 SURFACE CONDUITS

.1 Run parallel or perpendicular to building lines.

.2 Locate conduits behind infrared or gas fired heaters with 1.5 m clearance.

.3 Run conduits in flanged portion of structural steel.

.4 Group conduits wherever possible on suspended on surface channels.

.5 Do not pass conduits through structural members except as indicated.

.6 Do not locate conduits less than 75 mm parallel to steam or hot water lines with minimum of 25 mm at crossovers.

.7 Surface conduit shall only to be installed in Electrical and Mechanical utility rooms.

3.3 CONCEALED CONDUITS

.1 Run parallel or perpendicular to building lines.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 26 05 00 – Common Work Results for Electrical.

.2 Section 01 74 19 – Construction/Demolition Waste Management and Disposal.

1.2 REFERENCES

.1 CSA International

.1 CSA C22.2 No.42-10, General Use Receptacles, Attachment Plugs and Similar Devices.

.2 CAN/CSA C22.2 No.42.1-00(R2009), Cover Plates for Flush-Mounted Wiring Devices (Bi-national standard, with UL 514D).

.3 CSA C22.2 No.55-M1986(R2008), Special Use Switches.

.4 CSA C22.2 No.111-10, General-Use Snap Switches (Bi-national standard, with UL 20).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for wiring devices and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 CLOSEOUT SUBMITTALS

.1 Operation and Maintenance Data: submit operation and maintenance data for wiring devices for incorporation into manual.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

.1 Store materials indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect wiring devices from nicks, scratches, and blemishes.

.3 Replace defective or damaged materials with new.

PART 2 PRODUCTS

2.1 SWITCHES

.1 15 A, 347 V, single pole switches to: CSA C22.2 No.55 and CSA C22.2 No.111.

.2 Manually-operated general purpose AC switches with following features:

.1 Terminal holes approved for No. 10 AWG wire.
.2 Silver alloy contacts.
.3 Urea or melamine moulding for parts subject to carbon tracking.
.4 Suitable for back and side wiring.
.5 Ivory toggle.

.3 Toggle operated fully rated for tungsten filament and fluorescent lamps, and up to 80% of rated capacity of motor loads and heating loads.

.4 Switches of one manufacturer throughout project.

2.2 RECEPTACLES

.1 Duplex receptacles, CSA type 5-15 R, 125 V, 15 A, U ground, to: CSA C22.2 No.42 with following features:

.1 Ivory urea moulded housing.
.2 Suitable for No. 10 AWG for back and side wiring.
.3 Break-off links for use as split receptacles.
.4 Eight back wired entrances, four side wiring screws.
.5 Triple wipe contacts and rivetted grounding contacts.

.2 Single receptacles CSA type 5-15 R, 125 V, 15 A, U ground with following features:

.1 Ivory urea moulded housing.
.2 Suitable for No. 10 AWG for back and side wiring.
.3 Four back wired entrances, 2 side wiring screws.

.3 Other receptacles with ampacity and voltage as indicated.

.4 Receptacles in Lube Dispensing room as indicated on drawing.

.5 Receptacles of one manufacturer throughout project.

2.3 COVER PLATES

.1 Cover plates for wiring devices to: CSA C22.2 No.42.1.

.2 Sheet steel utility box cover for wiring devices installed in surface-mounted utility boxes.

.3 Stainless steel, vertically brushed, 1 mm thick cover plates for wiring devices mounted in flush-mounted outlet box.

.4 Sheet metal cover plates for wiring devices mounted in surface-mounted FS or FD type conduit boxes.

.5 Weatherproof double lift spring-loaded cast aluminum cover plates, complete with gaskets for duplex receptacles as indicated.

.6 Weatherproof spring-loaded cast aluminum cover plates complete with gaskets for single receptacles or switches.

2.4 SOURCE QUALITY CONTROL

.1 Cover plates from one manufacturer throughout project.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for wiring devices installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Cypress County and/or Consultant Project Manager.

.2 Inform Cypress County and/or Consultant Project Manager of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Cypress County and/or Consultant Project Manager.

3.2 INSTALLATION

.1 Switches:

.1 Install single throw switches with handle in "UP" position when switch closed.

.2 Install switches in gang type outlet box when more than one switch is required in one location.

.3 Mount toggle switches at height in accordance with Section 26 05 00 – Common Work Results for Electrical.

.2 Receptacles:

.1 Install receptacles in gang type outlet box when more than one receptacle is required in one location.

.2 Mount receptacles at height in accordance with Section 26 05 00 –Electrical General Requirements.

.3 Install surge protective type receptacles as indicated.

.4 Install GFI type receptacles as indicated.

.3 Cover plates:

.1 Install suitable common cover plates where wiring devices are grouped.

.2 Do not use cover plates meant for flush outlet boxes on surface-mounted boxes.

3.3 CLEANING

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

.3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 – Construction/Demolition Waste Management and Disposal.

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

3.4 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Protect stainless steel cover plate finish with paper or plastic film until painting and other work is finished.

.3 Repair damage to adjacent materials caused by wiring device installation.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCE STANDARDS

.1 ASTM International

.1 ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft^3) (600kN-m/m^3).

PART 2 PRODUCTS

2.1 MATERIALS

.1 Granular Type 4 Native Material. Material from excavation or other services, approved by the owner's representative, for the intended use. Material must be unfrozen and free of rocks larger than 75mm, cinders, ashes, sods and other deleterious materials.

.2 Type 1 Granular Fill

.1 Crushed stone or gravel consisting of hard durable particles, free from clay lumps, cementation, organic material, frozen material and other deleterious material.

.2 Gradation to be within limits specified when tested to ASTM C1360-06 and ATSM C117-04 with sieve size to CAN/CGSB 8.2M88.

.3 Unshrinkable fill: proportioned and mixed to provide:

.1 Maximum compressive strength of 0.4 MPa at 28 days.

.2 Maximum Portland cement content of 25 kg/m^3.

.3 Minimum strength of 0.07 MPa at 24 hours.

.4 Concrete aggregates: to CSA A23.1/A23.2.

.5 Cement: to CSA A3000, Type GU.

.6 Slump: 160 to 200 mm.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Evaluation and Assessment:

.1 Before commencing work verify locations of buried services on and adjacent to site.

3.2 PREPARATION

.1 Temporary erosion and sedimentation control:

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according Alberta Transportation Erosion and Sediment Control Manual (June 2011).

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

.2 Protection of in-place conditions:

.1 Protect excavations from freezing.

.2 Keep excavations clean, free of standing water, and loose soil.

.3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to Owners Representative's approval.

.4 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.

.5 Protect buried services that are required to remain undisturbed.

.3 Removal:

.1 Remove trees, stumps, logs, brush, shrubs, bushes, vines, undergrowth, rotten wood, dead plant material, exposed boulders and debris within areas designated on drawings.

.2 Remove obsolete buried services within 2 m of foundations: cap cut-offs.

3.3 EXCAVATION

.1 Shore and brace excavations, protect slopes and banks and perform work in accordance with Cypress County and or/ Occupational Health and Safety regulations whichever is more stringent.

.2 Perform blasting in accordance with Cypress County regulations: repair damage as directed by Owners Representative.

.1 Do not blast within 3 m of building and where damage would result.

.3 Strip topsoil over areas to be covered by new construction, over areas where grade changes are required, and so that excavated material may be stockpiled without covering topsoil.

.1 Stockpile topsoil on site for later use.

.4 Excavate as required to carry out work.

.1 Do not disturb soil or rock below bearing surfaces.

.2 Notify Owners Representative when excavations are complete.

.3 If bearings are unsatisfactory, additional excavation will be authorized in writing and paid for as additional work.

.4 Excavation taken below depths shown without Owners Representative's written authorization to be filled with concrete of same strength as for footings at Contractor's expense.

.5 Excavate trenches to provide uniform continuous bearing and support for 150 mm thickness of pipe bedding material on solid and undisturbed ground.

.1 Trench widths below point 150 mm above pipe not to exceed diameter of pipe plus 600 mm.

.6 Excavate for slabs and paving to subgrade levels.

.1 In addition, remove all topsoil, organic matter, debris and other loose and harmful matter encountered at subgrade level.

3.4 FIELD QUALITY CONTROL

.1 Testing of materials and compaction of backfill and fill will be carried out by testing laboratory approved by Owner.

.2 Not later than 1 week minimum before backfilling or filling, submit to designated testing agency and samples of backfill.

.3 Do not begin backfilling or filling operations until material has been approved for use by Owners Representative.

.4 Not later than 48 hours before backfilling or filling with approved material, notify Owners Representative to allow compaction tests to be carried out by designated testing agency.

3.5 BACKFILLING

.1 Remove snow, ice, construction debris, organic soil and standing water from spaces to be filled.

.2 Lateral support: maintain even levels of backfill around structures as work progresses, to equalize earth pressures.

.3 Compaction of subgrade: compact existing subgrade under walks, paving, and slabs on grade, to same compaction as fill.

.1 Fill excavated areas with selected subgrade material compacted as specified for fill.

.4 Placing:

.1 Place backfill, fill and base course material in 150 mm lifts: add water as required to achieve specified density.

.5 Compaction: compact each layer of material to following densities for material to ASTM D698 :

.1 To underside of base courses: 98%.

.2 Base courses: 100%.

.3 Elsewhere: 90%.

.6 Under slabs and paving:

.1 Use Type 4 up to bottom of granular base courses.

.2 Use Type 1 for base courses.

.7 In trenches:

.1 Up to 300 mm above pipe or conduit: sand placed by hand.

.2 Over 300 mm above pipe or conduit: native material approved by Owners Representative.

.8 Under seeded and sodded areas: use site excavated material to bottom of topsoil except in trenches and within 600 mm of foundations.

.9 Blown rock material, not capable of fine grading, is not acceptable, imported material must be placed on this type of material

.10 Against foundations (except as applicable to trenches and under slabs and paving): excavated material or imported material with no stones larger than 200 mm diameter within 600 mm of structures.

.11 Underground tanks: use sand to bottom of granular base courses or to bottom of topsoil, as applicable.

3.6 GRADING

.1 Grade so that water will drain away from buildings, walls and paved areas, to catch basins and other disposal areas approved by Owners Representative.

.1 Grade to be gradual between finished spot elevations shown on drawings.

3.7 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Dispose of cleared and grubbed material off site daily.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.3 Waste Management: separate waste materials for recycling or reuse in accordance with Section 01 74 19 - Construction/Demolition Waste Management and Disposal.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 American Society for Testing and Materials International (ASTM)

.1 ASTM C127-04, Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate.

.2 ASTM D698-00ae1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (600 kN-m/m^3).

.3 ASTM D1557-02e1, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (2,700 kN-m/m^3).

.4 ASTM D4253-00, Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.

1.2 DEFINITIONS

.1 Corrected maximum dry density is defined as:

.1 D =D1xD2/(F1 x D2) + (F2 x D1)

.2 D = (F1 x D1) + (0.9 x D2 x F2)

.3 Where: D = corrected maximum dry density kg/m^3.

.1 F1 = fraction (decimal) of total field sample passing 4.75 mm sieve

.2 F2 = fraction (decimal) of total field sample retained on 4.75 mm sieve (equal to 1.00 - F1)

.3 D1 = maximum dry density, kg/m^{3}of material passing 4.75 mm sieve determined in accordance with Method A, C of ASTM D698 and ASTM D1557.

.4 D2 = bulk density, kg/m^3, of material retained on 4.75 mm sieve, equal to 1000G where G is bulk specific gravity (dry basis) of material when tested to ASTM C127.

.4 For free draining aggregates, determine D1 (maximum dry density) to ASTM D4253 (dry method) when directed by the Owners Representative.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM D4791-99, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.

1.2 SAMPLES

.1 Submit samples in accordance with Section 01 33 23 - Submittal Procedures.

.2 Provide the Departmental Representative with access to source and processed material for sampling.

.3 Pay cost of sampling and testing of aggregates which fail to meet specified requirements.

1.3 WASTE MANAGEMENT AND DISPOSAL

.1 Divert unused granular materials from landfill to local facility as approved by the Departmental Representative.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, or other substances that would act in deleterious manner for use intended.

.2 Flat and elongated particles of coarse aggregate: to ASTM D4791.

.1 Greatest dimension to exceed five times least dimension.

.3 Fine aggregates satisfying requirements of applicable section to be one, or blend of following:

.1 Natural sand.

.2 Manufactured sand.

.3 Screenings produced in crushing of quarried rock, boulders, gravel or slag.

.4 Coarse aggregates satisfying requirements of applicable section to be one of or blend of following:

.1 Crushed rock.

.2 Gravel and crushed gravel composed of naturally formed particles of stone.

.3 Light weight aggregate, including slag and expanded shale.

2.2 SOURCE QUALITY CONTROL

.1 Inform the Owners Representative of proposed source of aggregates and provide access for sampling at least 4 weeks prior to commencing production.

.2 If, in opinion of the Owners Representative, materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate an alternative source or demonstrate that material from source in question can be processed to meet specified requirements.

.3 Advise the Owners Representative 4 weeks in advance of proposed change of material source.

.4 Acceptance of material at source does not preclude future rejection if it fails to conform to requirements specified, lacks uniformity, or if its field performance is found to be unsatisfactory.

PART 3 EXECUTION

3.1 PREPARATION

.1 Handling

.1 Handle and transport aggregates to avoid segregation, contamination and degradation.

.2 Stockpiling

.1 Stockpile aggregates on site in locations as indicated unless directed otherwise by the Owners Representative. Do not stockpile on completed pavement surfaces.

.2 Stockpile aggregates in sufficient quantities to meet Project schedules.

.3 Stockpiling sites to be level, well drained, and of adequate bearing capacity and stability to support stockpiled materials and handling equipment.

.4 Except where stockpiled on acceptably stabilized areas, provide compacted sand base not less than 150 mm in depth to prevent contamination of aggregate. Stockpile aggregates on ground but do not incorporate bottom 150 mm of pile into Work.

.5 Separate different aggregates by strong, full depth bulkheads, or stockpile far enough apart to prevent intermixing.

.6 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials as directed by the Owner Representative within 48 h of rejection.

.7 Stockpile materials in uniform layers of thickness as follows:

.1 Max 1.5 m for coarse aggregate and base course materials.

.8 Uniformly spot-dump aggregates delivered to stockpile in trucks and build up stockpile as specified.

.9 Do not cone piles or spill material over edges of piles.

.10 Do not use conveying stackers.

.11 During winter operations, prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.

3.2 CLEANING

.1 Leave aggregate stockpile site in tidy, well drained condition, free of standing surface water.

.2 Leave any unused aggregates in neat compact stockpiles at a site directed by the Departmental Representative.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

.1 Section 01 74 19 – Construction/Demolition Waste Management and Disposal.

1.2 REFERENCES

.1 American Society for Testing and Materials International (ASTM)

.1 ASTM C117-04, Standard Test Method for Material Finer than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.

.2 ASTM C136-05, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

1.3 DEFINITIONS

.1 Excavation classes: One class of excavation will be recognized.

.1 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials in accordance with Section 01 74 19 - Construction/Demolition Waste Management and Disposal.

1.5 EXISTING CONDITIONS

.1 Buried services:

.1 Before commencing work verify location of buried services on and adjacent to site.

.2 Prior to beginning excavation Work, the Contractor is to clearly mark limits of work and notify the consultant.

.3 Confirm locations of buried utilities by careful test excavations or soil hydrovac methods if required.

.4 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered as indicated.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Type 1 fill: properties to Section 31 05 16 - Aggregate Materials and the following requirements:

.1 Crushed, pit run or screened stone, gravel or sand.

.2 Gradations to be within limits specified when tested to ASTM C136 and ASTM C117. Sieve sizes to CAN/CGSB-8.1.

.3 Table:

Sieve Designation	% Passing Type 1
80 mm	-
50 mm	-
40 mm	-
25 mm	-
20 mm	100
16 mm	84 – 94
12.5 mm	-
10 mm	63 - 86
8 mm	-
5 mm	40 - 67
1.25 mm	20 - 43
0.630 mm	14 - 34
0.315 mm	9 - 26
0.160 mm	5 - 18
0.080 mm	2 - 10

PART 3 EXECUTION

3.1 SITE PREPARATION

.1 Remove obstructions from surfaces to be excavated within limits indicated.

3.2 PREPARATION/PROTECTION

.1 Protect existing features in accordance with Section 01 56 00 - Temporary Barriers and Enclosures and applicable OH&S regulations.

.2 Keep excavations clean, free of standing water, and loose soil.

.3 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction.

.4 Protect buried services that are required to remain undisturbed.

3.3 STOCKPILING

.1 Stockpile fill materials in areas designated by the consultant.

.1 Stockpile granular materials in manner to prevent segregation.

.2 Protect fill materials from contamination.

.3 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and onto municipal infrastructure.

3.4 DEWATERING AND HEAVE PREVENTION

.1 Keep excavations free of water while Work is in progress.

.2 Protect open excavations against flooding.

.3 Dispose of water in manner not detrimental to public and private property, or portion of Work completed or under construction.

3.5 EXCAVATION

.1 Excavate to lines, grades, elevations and dimensions as indicated.

.2 Keep excavated and stockpiled materials a safe distance away from edge of building structures.

.3 Restrict vehicle operations directly adjacent to open trenches.

.4 Dispose of surplus and unsuitable excavated material off site.

.5 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.

.6 Notify consultant when bottom of excavation is reached.

.7 Obtain consultant approval of completed excavation.

.8 Remove unsuitable material from trench bottom including those that extend below required elevations to extent and depth as directed by the consultant.

.9 Correct unauthorized over-excavation as follows:

.1 Fill under other areas with Type 1 fill compacted to not less than 98% of corrected Standard Proctor maximum dry density.

.10 Hand trim, make firm and remove loose material and debris from excavations.

.1 Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.

3.6 BACKFILLING

.1 Do not proceed with backfilling operations until the consultant has inspected and approved installations.

.2 Areas to be backfilled to be free from debris.

.3 Place backfill material in uniform layers not exceeding 150mm compacted thickness up to grades indicated. Compact each layer before placing succeeding layer.

.4 Backfilling around installations:

.1 Place bedding and surround material as specified elsewhere.

.2 Place layers simultaneously on both sides of installed Work to equalize loading.

3.7 RESTORATION

.1 Upon completion of Work, remove waste materials and debris in accordance to Section 01 74 19 - Construction/Demolition Waste Management and Disposal, and correct defects as directed by the consultant.

.2 Maintain a site free of trash or debris.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM C117-95, Standard Test Methods for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.

.2 ASTM C131-96, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

.3 ASTM C136-96a, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

.4 ASTM D422-63 (1998), Standard Test Method for Particle-Size Analysis of Soils.

.5 ASTM D698-00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft^3) (600kN-m/m^3).

.6 ASTM D1557-00, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (2,700kN-m/m^3).

.7 ASTM D1883-99, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.

.8 ASTM D4318-00, Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Pit Run Gravel: River sand and gravel free from silt, clay, loam, friable or soluble materials, vegetative matter and conforming to the following grading:

.1 Gradation to be within the following limits when tested to ASTM C136-06 and ASTM C117-04 and giving a smooth curve without sharp breaks when plotted on a semi-log chart.

Sieve Sizes (Square Openings)	Percent Passing by Weight
200 mm	100 of Total Sample
150 mm	96 – 100 of Total Sample
75 mm	60 – 80 of Total Sample
25 mm	70 – 100 of Material Passing 75 mm Sieve
4.75 mm	25 – 63 of Material passing 75 mm Sieve
1.18 mm	14 – 41 of Material Passing 75 mm Sieve
0.6 mm	7 – 30 of Material Passing 75 mm Sieve
0.15 mm	3 – 18 of Material Passing 75 mm Sieve
0.075 mm	2 – 9 of Material Passing 75 mm Sieve

.2 Any grading variation from the above is at the discretion of the Owners Representative, however, the percent of material passing 0.075 mm sieve shall not exceed 2/3 of the material passing the 0.6 mm sieve.

.3 The pit run gravel shall be free from any form of coating.

.4 Pit run gravel containing clay, loam or other deleterious materials will be rejected.

.5 No oversize material is tolerated.

PART 3 EXECUTION

3.1 PLACING

.1 Place granular sub-base after subgrade is inspected and approved by Owners Representative.

.2 Construct granular sub-base to depth and grade in areas indicated.

.3 Ensure no frozen material is placed.

.4 Place material only on clean unfrozen surface, free from snow or ice.

.5 Begin spreading sub-base material on crown line or high side of one-way slope.

.6 Place granular sub-base materials using methods which do not lead to segregation or degradation.

.7 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.

.8 Place material to full width in uniform layers not exceeding 150 mm compacted thickness. Owners Representative may authorize thicker lifts (layers) if specified compaction can be achieved.

.9 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.

.10 Remove and replace portion of layer in which material has become segregated during spreading.

3.2 COMPACTION

.1 Compaction equipment to be capable of obtaining required material densities.

.2 Efficiency of equipment not specified to be proved at least as efficient as specified equipment at no extra cost and written approval must be received from Owners Representative before use.

.3 Equipped with device that records hours of actual work, not motor running hours.

.4 Compact to density of not less than 98% corrected maximum dry density in accordance with ASTM D698 and ASTM D1557.

.5 Shape and roll alternately to obtain smooth, even and uniformly compacted sub-base.

.6 Apply water as necessary during compaction to obtain specified density.

.7 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Owners Representative.

.8 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

3.3 PROOF ROLLING

.1 For proof rolling use standard roller of 45400 kg gross mass with four pneumatic tires each carrying 11350 kg and inflated to 620 kPa. Four tires arranged abreast with centre to centre spacing of 730 mm maximum.

.2 Obtain approval from Owners Representative to use non-standard proof rolling equipment.

.3 Proof roll at level in sub-base as indicated. If non-standard proof rolling equipment is approved, Owners Representative to determine level of proof rolling.

.4 Make sufficient passes with proof roller to subject every point on surface to three separate passes of loaded tire.

.5 Where proof rolling reveals areas of defective subgrade:

.1 Remove sub-base and subgrade material to depth and extent as directed by Owners Representative.

.2 Backfill excavated subgrade with common material and compact in accordance with this section.

.3 Replace sub-base material and compact.

.6 Where proof rolling reveals areas of defective sub-base, remove and replace in accordance with this section at no extra cost.

3.4 SITE TOLERANCES

.1 Finished sub-base surface to be within 10 mm of elevation as indicated but not uniformly high or low.

3.5 PROTECTION

.1 Maintain finished sub-base in condition conforming to this section until succeeding base is constructed, or until granular sub-base is accepted by Owners Representative.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM C117-95, Standard Test Methods for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.

.2 ASTM C131-96 - Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

.3 ASTM C136-96a, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

.4 ASTM D698-00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (600kN-m/m^3).

.5 ASTM D1557-00, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (2,700kN-m/m^3).

.6 ASTM D1883-99, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.

.7 ASTM D4318-00, Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

1.2 DELIVERY, STORAGE, AND HANDLING

.1 Deliver and stockpile aggregates in accordance with Section 31 05 16 - Aggregate Materials. Stockpile minimum 50% of total aggregate required prior to beginning operation.

.2 Store cement in weathertight bins or silos that provide protection from dampness and easy access for inspection and identification of each shipment.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Granular base: material in accordance with Section 31 05 16 - Aggregate Materials and following requirements:

.1 Crushed Stone / Gravel Type 1

.2 Gradation to be within following limits when tested to ASTM C136 01 and ASTM C117-95, and giving a smooth curve without sharp breaks when plotted on a semi-log grading chart.

Sieve Sizes (Square Openings)	Percent Passing by Weight
20 mm	100 of Total Sample
16 mm	84 – 94 of Total Sample
10 mm	63 – 86 of Total Sample
5 mm	40 – 67 of Total Sample
1.25mm	20 - 43 of Total Sample
630 micron	14 – 34 of Total Sample
315 micron	9 – 26 of Total Sample

160 micron	5 – 18 of Total Sample
80 micron	2 – 10 of Total Sample

.3 At least 50% of the material retained on the 5.0-mm sieve shall have two or more fractured faces.

.4 Any gravel containing clay, loam or other deleterious materials will be rejected.

PART 3 EXECUTION

3.1 SEQUENCE OF OPERATION

.1 Place granular base after subgrade surface is inspected and approved by Owners Representative.

.2 Placing

.1 Construct granular base to depth and grade in areas indicated.

.2 Ensure no frozen material is placed.

.3 Place material only on clean unfrozen surface, free from snow and ice.

.4 Begin spreading base material on crown line or on high side of one-way slope.

.5 Place material using methods which do not lead to segregation or degradation of aggregate.

.6 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.

.7 Place material to full width in uniform layers not exceeding 150 mm compacted thickness. Owners Reprsentative may authorize thicker lifts (layers) if specified compaction can be achieved.

.8 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.

.9 Remove and replace that portion of layer in which material becomes segregated during spreading.

.3 Compaction Equipment

.1 Compaction equipment to be capable of obtaining required material densities.

.2 Efficiency of equipment not specified to be proved at least as efficient as specified equipment at no extra cost and written approval must be received from **Engineer** before use.

.3 Equipment should be equipped with a device that records hours of actual work, not motor running hours.

.4 Compacting

.1 Compact to density not less than 100% corrected maximum dry density in accordance with ASTM D698 and ASTM D1557.

.2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.

.3 Apply water as necessary during compacting to obtain specified density.

.4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Owners Representative.

.5 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

.5 Proof rolling

.1 For proof rolling use standard roller of 45400 kg gross mass with four pneumatic tires each carrying 11350 kg and inflated to 620 kPa. Four tires arranged abreast with centre to centre spacing of 730 mm.

.2 Obtain approval from Owners Representative to use non-standard proof rolling equipment.

.3 Proof roll at level in granular base as indicated. If use of non-standard proof rolling equipment is approved, Owners Representative to determine level of proof rolling.

.4 Make sufficient passes with proof roller to subject every point on surface to three separate passes of loaded tire.

.5 Where proof rolling reveals areas of defective subgrade:

.1 Remove base, sub-base and subgrade material to depth and extent as directed by Owners Representative.

.2 Backfill excavated subgrade with common material and compact in accordance with this section. Sub-base material and compact in accordance with Section 32 11 16.01 - Granular Sub-Base.

.3 Replace sub-base material and compact in accordance with Section 32 11 16.01 - Granular Sub-base.

.4 Replace base material and compact in accordance with this Section.

.6 Where proof rolling reveals defective base or sub-base, remove defective materials to depth and extent as directed by Owners Representative and replace with new materials in accordance with Section 32 11 16.01 - Granular Sub-base and this section at no extra cost.

3.2 SITE TOLERANCES

.1 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.

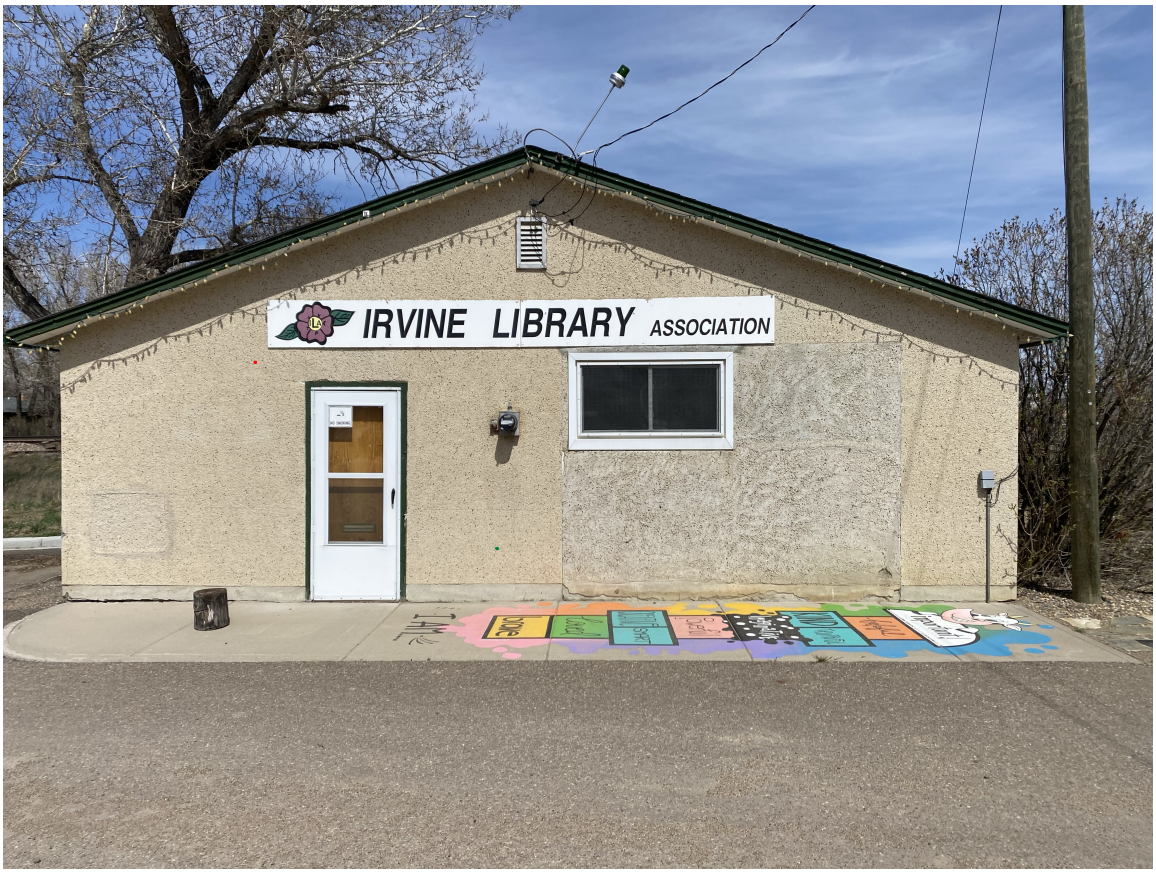
3.3 PROTECTION

.1 Maintain finished base in condition conforming to this Section until succeeding material is applied or until acceptance by Owners Representative.

END OF SECTION

SQUAREONE

CONSULTING LIMITED



78 SOUTH RAILWAY AVENUE, IRVINE, AB
HAZARDOUS MATERIALS BUILDING ASSESSMENT

Project# SQIMH24105
April 26, 2024

PREPARED FOR:

Ken Jacobs
Cypress County
816 2nd Avenue
Dunmore, AB

PREPARED BY:

Mike Anderson
Squareone Consulting Ltd.
629 UPP 3rd Street SE
Medicine Hat, AB

Table of Contents

1.0 Introduction

Squareone Consulting Ltd. (Squareone) was authorized by Ken Jacobs of Cypress County to conduct a Hazardous Materials Assessment on the Irvin Public Library located at 78 South Railway Avenue, Irvine, Alberta. The assessment was conducted from April 26, 2024, by Squareone's Mike Anderson.

The intent of this assessment is to identify both building materials as well as general products that are considered to be hazardous to humans and/or the environment, then produce all findings in a comprehensive and user-friendly report. This will be achieved by not only displaying results and findings in tables but also using colour coded floorplans, charts, and links within the report.

2.0 Scope of Work

The scope of work involved in the assessment conducted by Squareone Consulting consist of sampling and/or identifying the following:

- Asbestos containing materials
- Lead based materials
- Mercury containing materials
- Polychlorinated biphenyls (PCB's)
- Radioactive components
- Ozone depleting substances
- Urea formaldehyde
- Visible mould and water damage
- Fecal or microbial

Once the field assessment had been completed, Squareone will compile all information into a comprehensive report. This report will include tables, graphs, photographs, and colour coded floorplans.

3.0 Methodology

For the completion of this assessment, sampling and/or identifying hazardous materials throughout the building was conducted following general standards outlined by the Alberta Occupational Health and Safety Code, Alberta Asbestos Abatement Manual – 2019 and National Institute for Occupational Safety and Health (NIOSH). This was a non-intrusive assessment so areas with little to no access were not inspected. Due do the different nature of each material assessed, below is an outline for all material's specific methodologies.

3.1 Asbestos Containing Materials

Suspected asbestos containing materials were sampled and sent for laboratory analysis. Once the sample was taken, it was documented with the following information:

- Sample#
- Specific identifying location
- Specific material type
- Material distribution throughout building

All asbestos samples were taken following guidelines outlined in the Alberta Asbestos Abatement Manual – 2019.

All bulk asbestos samples are analysed at EMC Scientific Inc. using Polarized Light Microscopy (PLM) and dispersion staining techniques. All analytical procedures are in accordance with EPA 600/R-93/116 method.

All vermiculite samples are analysed at Wes-Har Asbestos Analysis & Consulting Ltd. using Polarized Light Microscopy (PLM). All analytical procedures are in accordance with EPA 600/R-04/004.

3.2 Lead Based Materials

Materials suspected to contain lead were identified or sampled and sent for laboratory analysis. All lead bulk and paint samples were sent to IATL International Asbestos Testing Laboratories for analysis. All samples were analysed using the ASTM D3335-85A "Standard Method to Test for Low Concentration of lead in Paint by Atomic Absorption Spectrophotometry" method. All samples were then compared to standards provided by Work Safe Alberta of 0.009%.

3.3 Mercury Containing Materials

A visual inspection was conducted on all thermostats, light bulbs and tubes and pressure-sensing products to determine the presence of mercury. If found, the product was documented and photographed.

3.4 Polychlorinated Biphenyls (PCB's)

PCB's are most common in florescent light ballasts. Newer T-5 tubes will not work with ballasts containing PCB's, only fixtures with T-12 - T-8 lighting tubes need to have the ballasts checked. In accordance to the Alberta Occupational Health and Safety Act, ballasts are inaccessible in the fixture is not de-energized and tagged out. For this reason, only a visual inspection was conducted on all lighting fixtures.

3.5 Radioactive Components

A visual inspection was conducted throughout the building to determine the presence of radioactive products. If found, the product was documented and photographed.

3.6 Ozone Depleting Substances

A visual inspection was conducted throughout the building for products and systems that usually containing Ozone Depleting Substances. If found, the product was documented and photographed.

3.7 Urea Formaldehyde

A visual inspection was conducted throughout the building to determine the presence of Urea Formaldehyde. If found, the product was documented and photographed.

3.8 Visible Mould and Water Damage

A visual inspection was conducted throughout the building to determine the presence of visible mould and water damage suggesting possible mould growth. If found, the product was documented and photographed. If mould growth was suspected, a swab sample was taken to determine any mould growth.

All swab samples were analysed using the method: Direct Microscopy Examination based on "CBS Laboratory Manual Series – Food and Indoor Fungi (2010)".

3.9 Fecal or microbial

A visual inspection was conducted throughout the building to determine the presence of Fecal or Microbial Contamination. If found, the product was documented and photographed.

4.0 Results and Discussion

All results from any laboratory analysis will be shown using a table to display all information pertaining to that sampling.

All Laboratory Certificate of Analysis will be displayed in the corresponding Appendix as stated at the top of the Table.

4.1 Asbestos Containing Materials

Sample #	Location	Description	Asbestos Type & %
1-1	Bathroom	Tan 12x12 Floor Tile	Chrysotile – 3.0
2-1	Exterior; SW Corner	Tan Stucco	Chrysotile – 1.0
2-2	Exterior; East Wall	Tan Stucco	Chrysotile – 1.0
2-3	Exterior; North Wall	Tan Stucco	Chrysotile – 1.0
3-1	Exterior; South Wall	Tan Stucco	N/A
4-1	SW Room; Ceiling	12x12 Tile	N/A
5-1	NW Room; Ceiling	Texture	N/A

Note:
Highlight indicates sample came back positive for asbestos content
N/A indicated that the sample was negative, so the information was not applicable
Blank sample number Indicates additional layering of above sample

4.2 Lead Based Materials

A total of four (4) paint samples were collected for analysis from throughout the building. Results from the laboratory analysis show that three (3) of the samples returned with a concentration in excess of 0.009% (90 mg/kg) by weight. Meaning that the three (3) samples are to be considered lead containing as stated by Work Safe Alberta. Due to the toxicity of lead and the chance of lead release during renovations, Squareone Consulting suggests that all precautions be taken if any removal or renovations will impact the lead containing materials.

Sample #	Location	Description	Concentration (% by weight)
L1	Interior Walls & Ceiling	Beige Paint	0.0078
L2	Interior Doors & Jambs	Brown Paint	0.528
L3	Bathroom Walls & Ceiling	White Paint	0.0626
L4	Exterior Trim	Green Paint	0.121

Notes:
Highlight indicates sample came back higher than the 0.009%
All samples are represented in lead by weight %.

4.3 Mercury Containing Materials

During the assessment no products are considered to contain mercury.

4.4 Polychlorinated Biphenyls (PCB's)

During the assessment no products are considered to contain polychlorinated biphenyls.

4.5 Radioactive Components

During the assessment no products are considered to contain radioactive components.

4.6 Ozone Depleting Substances

During the assessment no products are considered to contain ozone depleting substances.

4.7 Urea Formaldehyde

During the assessment no products are considered to contain urea formaldehyde.

4.8 Visible Mould and Water Damage

During the assessment visible water damage was observed and noted in three (3) areas. The three (3) areas of concern are:

- Under the south window
- Under the west window
- Under the bathroom sink

Mould is not considered to be present.

4.9 Fecal or microbial

During the assessment no fecal contamination was observed. Numerous rodent traps were identified but were empty.

5.0 Conclusions

Based on all observations, documentation and laboratory analysis, Squareone Consulting has collected enough information to make the following conclusions:

5.1 Asbestos Containing Materials

Suspected asbestos materials were sampled and/or identified throughout the building. A total of seven (7) samples were taken with four (4) returning positive for asbestos content. The following is a list of the asbestos containing materials found:

- Tan 12x12 Floor Tile
- Exterior Stucco

Locations and quantity totals for each material is as follows:

Grey 12x12 Floor Tile	
Locations:	Total Square Footage: 40 ft^2
Bathroom	

Exterior Stucco	
Locations:	Total Linear Footage: 1600 ft^2
All exterior sides of the building	

5.2 Lead Containing Materials

Paint with lead levels exceeding 0.009% by weight is considered to be "lead containing" by Safety Alberta.

Alberta Occupational Health and Safety does not regulate the concentration of lead in paint, but they do have an 8-hour Occupational Exposure Limit of 0.1 ppm. Below is a list of all paint samples that returned greater than 0.009%. If any of the materials below will be altered either during renovations or demolition, all precautions should be taken to limit the amount of lead release and to ensure air levels never exceed the Occupational Exposure Limit.

- Brown Paint
- White Paint
- Green Paint

5.3 Mercury Containing Materials

During the assessment no products are considered to contain mercury.

5.4 Polychlorinated Biphenyls (PCB's)

At this moment no lighting ballasts are considered to contain PCB's.

5.5 Radioactive Components

During the assessment no products are considered to contain radioactive components.

5.6 Ozone Depleting Substances

During the assessment no products are considered to contain ozone depleting substances.

5.7 Urea Formaldehyde

At this moment there is no concern for urea formaldehyde.

5.8 Visible Mould and Water Damage

Even though visible water damage is a clear indication that there could be mould present, Squareone does not suspect mould growth inside the building.

6.0 Closure

Squareone Consulting produced this assessment report for the sole purposes of Cypress County. All use of this report must be made with the acknowledgment of Cypress County. It is a statement that the presence of all hazardous materials as outlined in the report and as observed on the date this survey was conducted. The conclusions and recommendations contained in this assessment report are based upon professional opinion about the subject matter. These opinions are in accordance with accepted hygiene assessment standards and practices applicable to these locations and are subject to the following inherent limitations:

The data and findings in this assessment report are valid as of the date of the investigation. The passage of time, manifestation of latent conditions may warrant further exploration at the properties, analysis of data, and re-evaluation of the findings, observations, and conclusions expressed in this report.

The data reported and the findings, observations and conclusions expressed in this report are limited by the Scope of Work. The Scope of Work was defined by but not limited to: the requests of the client, the time and budgetary constraints, and availability of access to the site.

Because of the limitations stated above, the findings, observations and conclusions expressed by Squareone Consulting Ltd. in this report are not, and should not, be considered an opinion concerning compliance of any past or present owner or operator of the site with any federal, provincial or local laws or regulations.

No warranty or guarantee, whether expressed or implied, is made with respect to the data or the report findings, observations, and conclusions, which are based solely upon site conditions in existence at the time of investigation.

If you have any questions, comments, or are in need of further assistance please contact me directly.

Sincerely,

Mike Anderson

President & CEO

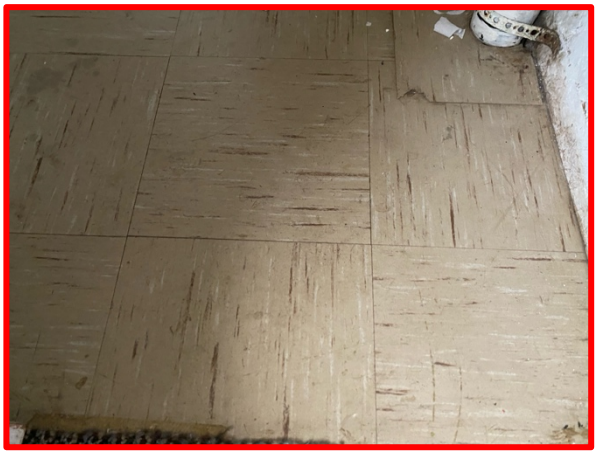
Squareone Consulting Ltd.

Appendices:

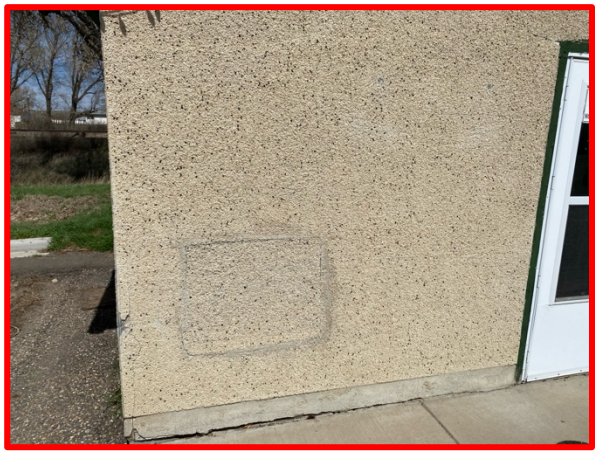
Appendix I	Positive Sample Photographs
Appendix II	Laboratory Results
Appendix III	Sample/Analysis Floor Plan

Appendix I

1-1 – Bathroom / Tan 12x12 Floor Tile

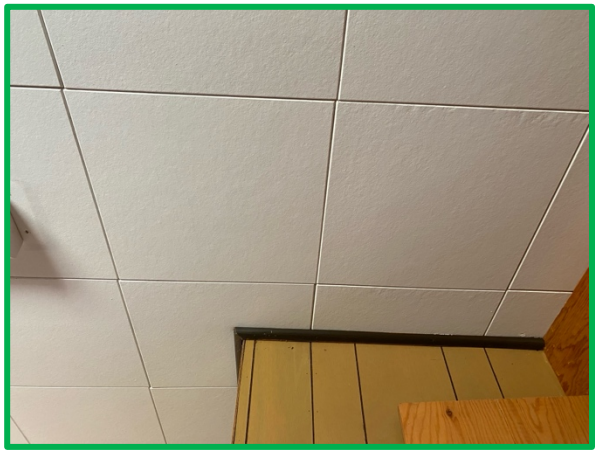


2-1 – 2-3 – Exterior / Tan Stucco

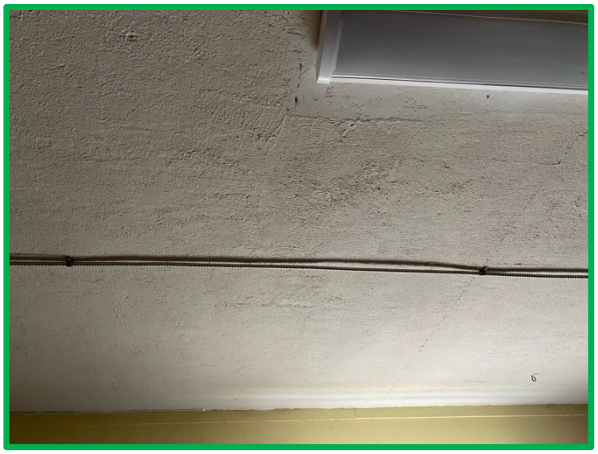


3-1 – Exterior; South Wall / Tan Stucco

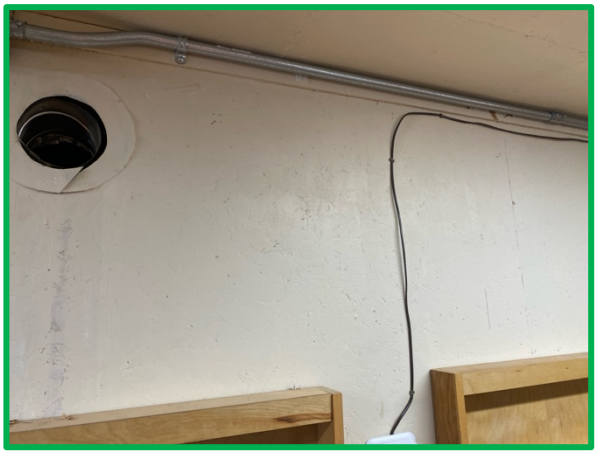
4-1 – SW Room; Ceiling / 12x12 Tile



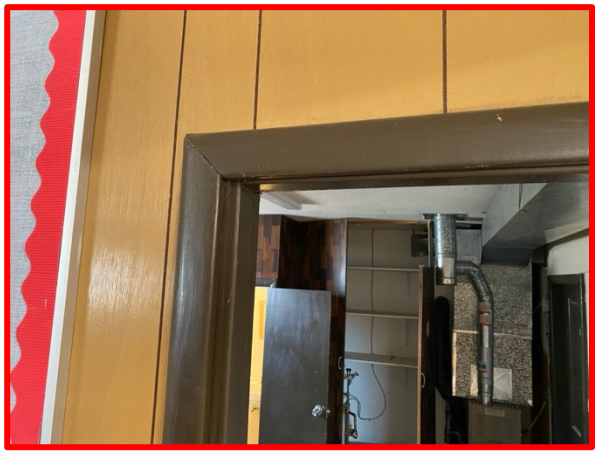
5-1 – NW Room; Ceiling / Texture



L1 – Interior Walls & Ceiling / Beige Paint

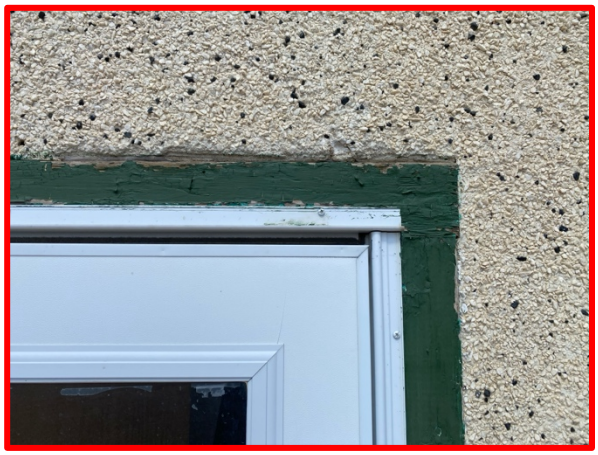


L2 – Interior Doors & Jambs / Brown Paint

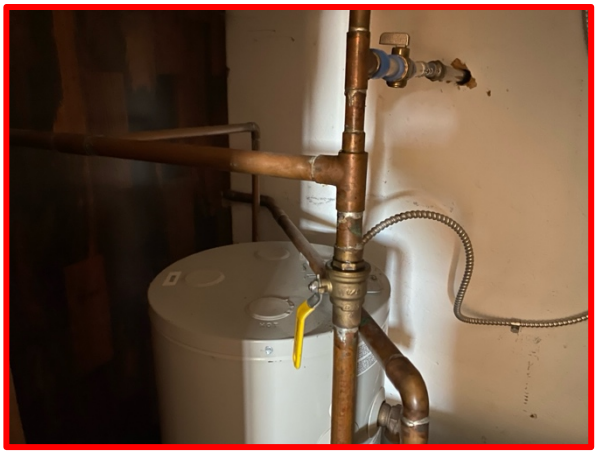


L3 – Bathroom Walls & Ceiling / White Paint

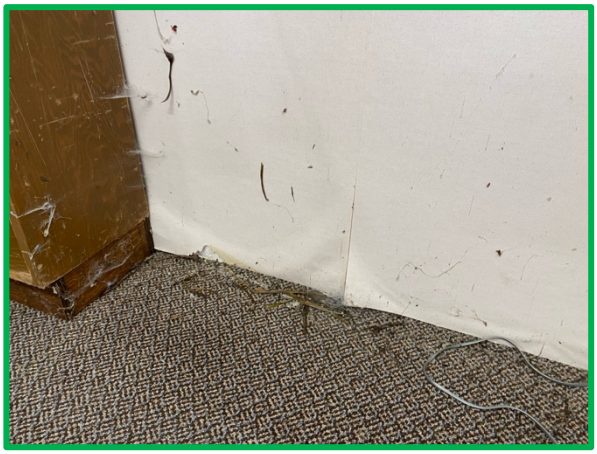
L4 – Exterior Trim / Green Paint

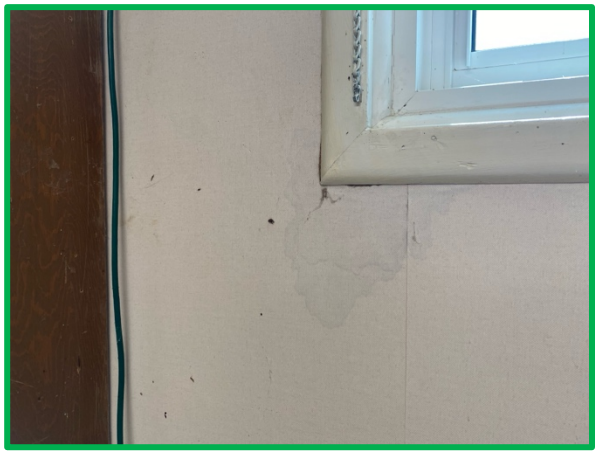


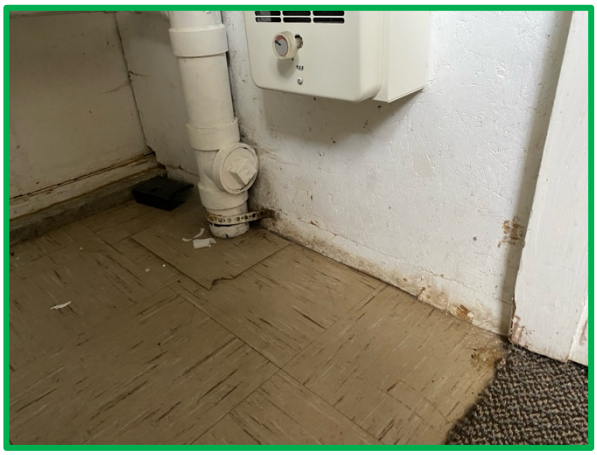
Water Lines Soldering



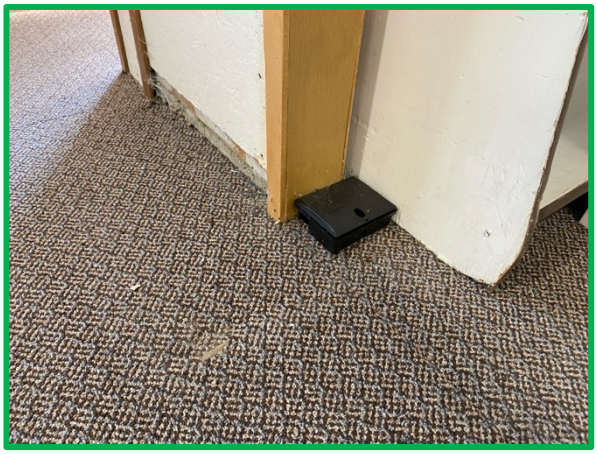
Water Staining / Water Damage







Rodent Contamination



Appendix II

emcscientific
INCORPORATED

Laboratory Analysis Report

To:

Mike Anderson
Squareone Consulting Ltd
629 UPP 3rd St SE
Medicine Hat, Alberta
T1A 0H4

EMC LAB REPORT NUMBER: A103637
Job/Project Name:
Analysis Method: Polarized Light Microscopy – EPA 600
Date Received: Apr 29/24 **Date Analyzed:** May 6/24
Analyst: Ameerah Ngai
Reviewed By: Malgorzata Sybydlo

Job No: SQ1MH24105
Number of Samples: 7
Date Reported: May 6/24

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
1-1	A103637-1	Tan 12x12 floor tile / bathroom	Beige, vinyl floor tile	**Chrysotile**	**3**		97
2-1	A103637-2	Tan stucco / exterior SW corner	Grey, textured cementitious material	**Chrysotile**	**1**		99
2-2	A103637-3	Tan stucco / exterior E wall	Grey, textured cementitious material	**Chrysotile**	**1**		99
2-3	A103637-4	Tan stucco / exterior north wall	Grey, textured cementitious material	**Chrysotile**	**1**		99
3-1	A103637-5	Tan stucco / exterior south wall	Grey, textured cementitious material	**ND**			100
4-1	A103637-6	12x12 tile / SW room; ceiling	Brown, ceiling tile	**ND**		90	10
5-1	A103637-7	Texture / NW room; ceiling	White, textured cementitious material	**ND**			100

Note:
1. Bulk samples are analyzed using Polarized Light Microscopy (PLM) and dispersion staining techniques. The analytical procedures are in accordance with EPA 600/R-93/116 method.
2. The results are only related to the samples analyzed. **ND** = None Detected (no asbestos fibres were observed), **NA** = Not Analyzed (analysis stopped due to a previous positive result).
3. This report may not be reproduced, except in full without the written approval of EMC Scientific Inc. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.
4. The limit of quantification (LOQ) is 1%.

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured. Canadian owned.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: -

REPORT No: 24-011872 - Rev. 0

Report To:
EMC Scientific Inc.
5800 Ambler Dr. #100
Mississauga, ON L4W 4J4

CADUCEON Environmental Laboratories
2378 Holly Lane
Ottawa, ON K1V 7P1

Attention: Alister Haddad

DATE RECEIVED: 2024-Apr-30
DATE REPORTED: 2024-May-01
SAMPLE MATRIX: Paint Chips

CUSTOMER PROJECT: SQ1MH24105
P.O. NUMBER:

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
ICP/OES (Solid)	4	OTTAWA	APRUDYVUS	2024-May-01	D-ICP-02	EPA 6010

R.L. = Reporting Limit
NC = Not Calculated
Test methods may be modified from specified reference method unless indicated by an *

		Parameter	Lead
		Units	%
		R.L.	0.0005
Client I.D.	Sample I.D.	Date Collected	-
L1 - Beige / int. walls & ceiling	24-011872-1	2024-Apr-25	0.0078
L2 - Brown / int. doors & jambs	24-011872-2	2024-Apr-25	0.528
L3 - White / bathroom walls & ceiling	24-011872-3	2024-Apr-25	0.0626
L4 - Green / exterior trim	24-011872-4	2024-Apr-25	0.121

Michelle Dubien
Data Specialist

Appendix III

SQUAREONE

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CREATED ON
2024-04-25

DETAILS
Floors: 1
Rooms: 5

LEGEND

#-#	Negative Asbestos Sample
#-#	Positive Asbestos Sample
L#	Negative Lead Sample
L#	Positive Lead Sample

0' 2' 4' 6'
1:54

▼ 1st Floor

ROOMS: 5