COQUITLAM CITY HALL
PLANNING & DEVELOPMENT
OFFICE RENOVATION
3000 GUILDFORD WAY
COQUITLAM, BC

ISSUED FOR TENDER

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1.0 DESCRIPTION OF THE WORK

.1 The work generally includes, but is not limited to, the following major items of Work:

.1 Creation of new lunch room, construction of service counter booth and storefront.
.2 New flooring, wall base, storefront
.3 New Electrical associated with new furniture replacement and new mechanical equipment
.4 New plumbing and exhaust fan
.5 Supply and installation of new workstations, furniture, appliance are not in contract

.2 The Contractor shall be responsible for keeping his areas of work in a tidy and safe condition.

.3 Obtain necessary permits and inspections from authorities having jurisdiction with the exception of the building permit which, will be supplied by the Owner.

2.0 DOCUMENTS

.1 This section of the specifications forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

.2 The specifications have been divided into approximate trade sections. However, the division into sections shall not operate to define or limit the responsibility of an Subcontractor.

3.0 DOCUMENTS REQUIRED

.1 Maintain at job site, one copy each of following:

.1 Contract Drawings
.2 Specifications
.3 Addenda
.4 Reviewed shop drawings
.5 Change orders
.6 Other modifications to Contract
.7 Field test reports
.8 Copies of approved and updated work schedules
.9 Manufacturers' installation and application instructions
.10 Project meeting minutes
.11 Site instructions
.12 BC Building Code (current edition)
.13 Record set for as built drawings
.14 Safety meeting minutes

4.0 COMPLETION TIME AND CONSTRUCTION PHASING

.1 Construction timeline to be referred to RFP Document.

.2 Construction will be carried out in 4 phases, as shown on drawing. Contractor to allow a short break between each phase as needed to facilitate the installation of furniture. Contractor to coordinate on site with Owner's furniture supplier for electrical installation.

5.0 CONTRACTOR'S USE OF SITE

.1 Do not unreasonably encumber the site with materials an equipment.

.2 Move stored products or equipment that may interfere with the existing tenant operations as directed by the Owner or Consultant.

6.0 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 useable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

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

7.0 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDINGS

.1 Execute work with the least possible interference or disturbance to occupants, public and normal use of premises. Arrange with Consultant to facilitate execution of work. Provide temporary controls as required.

8.0 ADDITIONAL DRAWINGS

.1 The Consultant may furnish additional drawings in digital format for clarification. These additional drawings have the same meaning and intent as if they were included with plans referred to in the Contract Documents.

9.0 HAZMAT DISCOVERY

.1 Should material resembling spray or trowel-applied asbestos be encountered in the course of demolition work, stop work and notify the Consultant immediately. Proceed with abatement work as per Worksafe BC requirement.

.2 Majority of the interior hazmat and mold remediation has been completed under a separate demolition contract that was completed prior to this contract.

10.0 REMOVED MATERIAL

.1 Unless expressly stated otherwise in writing by the Consultant, materials indicated for removal become the Contractor's property and shall be removed from the site.

.2 Do not dispose of volatile or corrosive materials in drains.

11.0 BUILDING SMOKING ENVIRONMENT

.1 No smoking is allowed within the whole building.

12.0 COORDINATION AND COOPERATION

.1 The Contractor shall coordinate the work with his Subcontractors with efficient and continuous supervision and be fully aware of the Work requirements including, without limitation, those of the specifications and drawings.

.2 The responsibility as to which Subcontractor provides required work to be built-in or supplied rests entirely with the Contractor. Differences in interpretation of the specifications or drawings as to which Subcontractor shall provide certain work shall not be grounds for claims for extras.

.3 The Contractor shall coordinate the use of the construction plant and equipment and access, with the work of the various Subcontractors. The cost of such use by the various Subcontractors are subject to whatever arrangement exists between the Contractor and the various Subcontractors.

.4 The contractor will coordinate closely with the Owner and Owner's appointed furniture supplier for delivery and installation of furniture.

13.0 DAILY RECORD

.1 From the day of commencement of the Work, the Contractor shall maintain an accurate daily record of the progress of the Work on his standard record form, with applicable trades listed. This record shall be open to the Consultant's and the Owner's inspections at all reasonable times. A copy of the record shall be turned over to the Consultant at weekly intervals.

.2 Contractor's diary shall record all pertinent data such as:
- .1 Commencements, progress and completion of various portions of the Work.
- .2 Dates of all Site meetings.
- .3 Dates of visits or inspections by government authorities, inspectors, and any other visitors to the Site.
- .4 Record of work force employed.
- .5 Man power on site by trade supplier each day.

14.0 PERMITS AND FEES

.1 The Consultant has obtained the Building Permit. The Contractor shall obtain and pay for all other trades permits and licenses required for the Work.

.2 Contractor will apply for occupancy permit / final acceptance from the Authority Having Jurisdication.

.3 The Contractor shall conform to the codes, ordinances, regulations and orders of all authorities having jurisdiction over the performance of the Work. Should conflicts arise, the Contractor shall forthwith request clarification from the Consultant.

15.0 HOURS OF WORK

.1 Hours of work will be 7am to 5pm for work allowed to be carried out during normal office.

.2 The following work are to be carried out afterhours:
- .1 All slab coring
- .2 Demolition work that generate excessive noise such as millwork removal, cutting of steel stud
- .3 Electrical work related to furniture set up which will be carried out in parallel with the furniture supplier
- .4 All work inside the café on ground floor

.3 Other mechanical, electrical, architectural, millwork, storefront will be carried out during normal office hours.

16.0 SIGNS

.1 Signs or advertising shall not be placed on the Site without the written approval of the Owner. The Contractor shall be responsible for regulating all signage on the site in accordance with the requirements of the Owner.

17.0 PUBLICITY

.1 All publicity relating to this Project and the Work is subject to the prior approval of the Owner, and no mention of the Project in advertising or articles in any publication will be permitted unless previously approved by the Owner. Publicity or advertising implying endorsement of a product by the Owner will not be permitted.

18.0 WORK AREA

.1 The Site upon which the Work is to be conducted is shown on the drawings. The Work and the, storage of equipment, materials and/or supplies must be contained within the Project area.

.2 Additional storage/staging space can be identified in the building as needed with approval from the Owner.

19.0 CONSTRUCTION SAFETY

.1 The Contractor shall comply with the Workers' Compensation Accident Prevention Regulations of British Columbia (latest edition in force) and provide all necessary safety requirements as prescribed by such regulations.

20.0 SECURITY

.1 The Contractor shall be responsible for security of the Work.

.2 The Contractor and his Subcontractors shall make their own arrangements to ensure the security of their own equipment and materials.

.3 The Owner will not be liable for any loss or damage to materials, equipment or other property of the Contractor.

21.0 NOISE ABATEMENT

.1 Any noise or vibration which is found to be objectionable shall be corrected, at no additional cost to the Owner and to the satisfaction of the City and/or the Landlord and the Consultant.

22.0 PRECONSTRUCTION MEETING

.1 The Contractor shall attend a meeting with the Consultant, other consultants, Subcontractors, field inspectors, supervisors and the Owner to discuss and resolve administrative procedures and responsibilities, and scheduling prior to commencing the Work.

.2 Items to be discussed at such meeting shall include, but shall not necessarily be limited to the following:

.1 Confirmation of authorized representatives of the Owner, Consultant, other consultants and the Contractor and the name of the Contractor’s Construction Safety Officer.
.2 Site orientation.
.3 Schedules of submissions of shop drawings, data samples and mock-ups
.4 Schedule of Work.
.5 Site security.
.6 Construction safety program.
.7 Hazards and Mitigation measures.
.9 Contemplated change notices, change orders, procedures, approvals required, and administrative requirements.
.8 Takeover procedures, and acceptance.
.9 Monthly progress claims, administrative procedures and holdbacks.
.12 Record drawings, maintenance manuals.
.13 Appointment of inspection agencies or firms

23.0 PROGRESS MEETINGS

.1 The Contractor shall hold progress meetings through video conferencing throughout the duration of the Work to discuss progress, safety issues, required information, schedule and other project issues. Frequency of such meeting will be at a minimum of once every 2 weeks and may be more frequent depending on the site progress as determined by Consultant.

.2 The Prime Consultant, other consultants, Contractor, and major Subcontractors where appropriate involved in the Work, are to be in attendance.

.3 The Contractor will record minutes of meetings and circulate same to everyone in the distribution list within three (3) days of meeting.

.4 Agenda may include the following:

.1 Review, approval of minutes of previous meeting.
.2 Review of Work progress since previous meeting.
.3 Field observations, problems, conflicts.

.4 Problems which impede construction schedule.
.5 Review of off-site fabrication delivery schedules
.6 Corrective measures and procedures to regain projected schedule.
.7 Revision to construction schedule.
.8 Progress schedule, during succeeding work period.
.9 Review submittal schedules: expedite as required.
.10 Maintenance of quality standards.
.11 Review proposed changes for affect on construction schedule and on completion date.
.12 Other business.

24.0 SUBSTANTIAL COMPLETION

.1 The date of Substantial Completion will include the issuance of occupancy permit or final acceptance by the Authority Having Jurisdiction, meeting the requirement of the BC Lien Act, and the facility must be ready for its intended use.

.2 Achievement of Substantial Completion will not be acknowledged as the official project turnover date at which time all deficiency has been completed and the Owner takes occupancy of the project.

25.0 SYSTEMS DEMONSTRATION

.1 Prior to the application for substantial performance final inspection, the Contractor shall demonstrate operation of each system to the Owner and shall instruct personnel in operation, adjustment, and maintenance of equipment and systems, using data provided by operation and maintenance manuals as the basis for instruction.

26.0 RECORDS

.1 For at least one year after issuance of certificate of Substantial Performance, the Contractor shall keep all records, accounts, statements and other documents relating to the performance of the Work, and shall permit representatives of the Owner to inspect and audit them at all reasonable times.

27.0 PROTECTION

.1 The Contractor shall take all necessary precautions to fully protect the existing buildings' surfaces against damage during selective demolition, renovations and/or installation of new work.

.2 The Contractor shall make good, at no expense to the Owner, any damage or disruption caused to the existing buildings and to utilities and services not called for as part of the Work of this contract. All repair work shall only be done after consultation with the Consultant, Owner, and/or appropriate parties and authorities and to standards and codes of the authorities having jurisdiction.

.3 Damage of any nature done to existing buildings except where required to accommodate new construction and renovations, shall be made good to the satisfaction of the Consultant and Owner and at no additional cost.

.4 Making good shall mean restoration to at least the original condition in terms of strengths, safety, workmanship and appearance.

28.0 EXISTING UTILITIES AND SERVICES

.1 The Contractor shall verify location of and limitations imposed by existing mechanical, electrical, telephone and similar services, and protect them from damage. If necessary, he shall relocate active services to ensure that they function continuously in safety and with risk of damage.

29.0 ADDITIONAL REQUIREMENTS

.1 Contractors shall refrain from using vulgar or obscene language on site.

.2 Appropriate dress is required for all Contractors and Subcontractors.

.3 No flammable materials storage (with the exception of paint and coatings forming part of the Work) is permitted on the premises or in any buildings.

30.0 FINAL CLEANING

.1 The Contractor shall:

.1 Remove waste products and debris other than that caused by the Owner, other contractors or their employees, and leave the Work immaculately clean and suitable for occupancy.

.2 Remove surplus products, tools, construction machinery and equipment. Remove waste products and debris other than that caused by the Owner or other Contractors.

.3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris during construction and at Substantial Performance.

.4 Vacuum clean and dust building interiors.

.5 Clean off all marks and dirt from aluminum and clean and polish all glass.

.6 Also refer to Section 01 10 00 Owners General Requirements.

31.0 PROJECT COMMISSIONING

.1 The Contractor shall expedite and complete deficiencies and defects identified by the Consultant.

.2 submit required documentation such as statutory declarations, Workers' Compensation certificates, warranties, certificates of approval or acceptance from regulating bodies.

.3 attend “end-of-work” testing and break-in or start-up demonstrations.

.4 review inspection and testing reports to verify that the findings conform to the intent of the documents and that changes, repairs or replacements have been completed.

.5 review condition of equipment that has been used in the course of the Work to ensure turning over at completion in “as new condition” with warranties, dated and certified from time of Substantial Performance of the Work.

.6 provide ongoing review, inspection and attendance to building call back, and maintenance, and repair problems during the warranty periods.

32.0 COST BREAKDOWN

.1 Before submitting first progress claim submit breakdown of the Contract price in detail as directed by the Consultant and aggregating the Contract Price. After approval by the Consultant and Owner cost breakdown will be used as basis for progress payment.

END OF SECTION 01 10 00

1.0 GENERAL

1.1 INTENT

.1 This section provides requirements related to the Bid and Contract Documents for this Project, all in keeping with the Freedom of Information and Protection of Privacy Act. Bidders may wish to seek their own legal advice on specific aspects of these obligations.

.2 All responses to this Tender will be subject to the British Columbia Freedom of Information and Protection of Privacy Act (FOIPPA).

.3 Bidders may obtain more information from the Office of the Information & Privacy Commissioner for British Columbia website www.oipc.bc.ca.

1.2 BID DOCUMENTS

.1 All Records submitted by a bidder to the Owner, are in the Custody of the Owner and, as such, may be subject to the access and privacy provisions of the FOIPP ACT. This act will apply to the Owner, and will give any person a right of access to the Records in the Custody or Control of the Owner, subject to limited and specific exceptions.

.2 A bidder shall identify all information provided in bid submission documents that he considers confidential and shall disclose the basis for such confidentiality, including those parts of the bid submission that relate to:

.1 Trade secrets,

.2 Commercial, financial, labour relations, scientific or technical information,

.3 Personal information regarding persons who would provide services related to this invitation to bid, including their names, qualifications, experience, and employment history.

.1 The purpose of collecting personal information is to enable the Owner to evaluate the bidder’s submission in response to the invitation to bid.

.3 It is recommended that bidders advise persons whose personal information is being provided to the Owner as a response to this invitation to bid that their personal information may be subject to disclosure to members of the public under the FOIPP ACT.

.4 The Owner will endeavor to use the FOIPP ACT to protect information identified by bidders as confidential, however under these and other sections of the Act, the information may have to be disclosed to members of the public who request access to Records in the Owner's Custody.

.5 The Owner will not disclose, to the extent permitted by law, the evaluation of any or all bids. However, a bidder may request general information in regard to the evaluation of their own bid.

END OF SECTION 01 14 00

1.0 GENERAL

1.1 REFERENCES

.1 All references to Codes, Standards and standard Specifications referred to in these Specifications or used on drawings shall mean and intend to be the currently adopted edition, amendment and revision of such reference standards in effect at the time of Bid closing.

.2 Referenced Standards and Code requirements shall be considered minimum requirements.

.3 Applicable portions of Standards used that are not in conflict with the Contract Documents are hereby made a part of the Specifications.

.4 Modifications or exceptions to Standards shall be considered as amendments, and unmodified portions shall remain in full effect.

.5 In cases of discrepancies between the Specifications and Standards, the requirements of the Specification shall govern.

.6 In cases of discrepancies between Codes and the Specifications, the Code requirements shall govern.

.7 Where references to Codes or Standards are used in these Specifications, the Contractor must familiarize himself with the applicable portions and shall be governed by them.

.8 If requested, the Contractor shall furnish an affidavit from manufacturers certifying that materials or products delivered to the project meet the requirements specified. However, such certifications shall not relieve the Contractor from the responsibility of complying with any added requirements specified in the Contract Documents.

1.2 DESIGNATION EXPLANATION

.1 National Standard of Canada designation (CAN)
The number following the CAN designation represents the agency under whose auspices the standard is issued.
CAN1 designates CGA
CAN2 designates CGSB
CAN3 designates CSA and
CAN4 designates ULC

1.3 ABBREVIATIONS

.1 References to a Technical Society, Association, or Code is made in these Specifications in accordance with the following abbreviations:

Acoustical Materials Association	AMA
Air Movement & Control Association	AMCA
American Concrete Institute	ACI
American Iron & Steel Institute	AISI
American National Standards Institute	ANSI
American Society for Testing & Materials	ASTM
American Society of Heating, Refrigerating & Airconditioning Engineers	ASHRAE
American Society of Mechanical Engineers	ASME
American Standards Association	ASA
American Welding Society	AMS
American Wood Preservers' Association	AWPA
Architectural Woodwork Manufacturers Association of Canada	AWMAC

Association of Wall & Ceiling Contractors of B.C.	AWCC
British Columbia Building Code	BCBC
Canadian Gas Association	CGA
Canadian General Standards Board	CGSB
Canadian Institute of Steel Construction	CISC
Canadian Institute of Timber Construction	CITC
Canadian Roofing Contractors Association	CRCA
Canadian Sheet Steel Building Institute	CSSBI
Canadian Standards Association	CSA
Canadian Steel Door and Frame Manufacturing Association	CSDFMA
Canadian Welding Bureau	CWB
Canadian Wood Council	CWC
Construction Materials Board	CMB
Construction Specifications Canada	CSC
Corrugated Steel Pipe Institute	CSPI
Electrical and Electronic Manufacturers Association of Canada	EEMAC
Factory Mutual	FM
Fire Commission of Canada	FCC
Hydronics Institute	HI
Heating, Refrigerating and Air-Conditioning Institute of Canada	HRAI
Insulated Glass Manufacturers Association of Canada	IGMAC
Industrial Fabric Association International	IFAI
Master Painters Institute	MPI
National Association of Architectural Metal Manufacturers	NAAMM
National Building Code	NBC
National Electrical Manufacturers Association	NEMA
National Fire Protection Association	NFPA
National Hardwood Lumber Association	NHLA
National Lumber Grades Authority	NLGA
National Research Council	NRC
Roofing Contractors Association of BC	RCABC
Standards Council of Canada	SCC
Steel Structural Painting Council	SSPC
Terrazzo, Tile & Marble Association of Canada	TTMAC
Underwriters Laboratories Inc	UL
Underwriters Laboratories of Canada	ULC
Warnock Hersey	WH
Workers' Compensation Board	WCB

END OF SECTION 01 14 22

1.0 GENERAL

1.1 SUMMARY

.1 This section includes administrative and procedural requirements for quality assurance and quality control.

.2 Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements:

.1 Specific quality control requirements for individual construction activities are specified in the sections that specify those activities. Requirements in those sections may also cover production of standard products.

.2 Specified tests, inspections, and related actions do not limit Contractor's quality control procedures that facilitate compliance with the Contract Document requirements.

.3 Requirements for Contractor to provide quality control services required by Consultant, Owner, or authorities having jurisdiction are not limited by provisions of this section.

.3 This section specifies general requirements and procedures for Contractor construction of Mock-Ups required for Quality Assurance and confirmation of assembly techniques. Additional specific requirements for submissions are specified in individual.

1.2 RELATED SECTIONS

.1 Section 01 32 00 – Project Schedule: Develop a schedule of required tests and inspections, and construction of required mock-ups.

.2 Section 01 73 29 – Cutting and Patching: Repair and restoration of construction disturbed by testing and inspecting activities.

.3 Divisions 2 through 49 sections and drawings for specific test and inspection requirements.

1.3 REFERENCE STANDARDS

.1 Within the text of the Project Manual, reference may be made to the standards referenced in Section 00 14 22- Reference Standards-BC. The testing of materials may be requested by the Owner, to prove conformance with these standards.

.2 The referenced standard and any amendments or updates that may be in force on the day of receipt of Bids shall be applicable to the work during the duration of the Contract.

1.4 DEFINITIONS

.1 Quality Assurance Services: Activities, actions, and procedures performed before and during execution of the Work by the Contractor to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

.2 Quality Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work by a third party testing agency to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Consultant.

.3 Mock-Ups: Full size, physical example assemblies to illustrate finishes and materials. Mock-ups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not samples. Mock-ups establish the standard by which the Work will be judged.

.4 Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.5 DELEGATED DESIGN

.1 Provide letters of commitment and compliance where design services or certifications by a design a Professional Engineer are specifically required of Contractor by the Contract Documents.

1.6 SUBMITTALS

.1 Qualification Data: For testing agencies specified in 1.7 below to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

.2 Delegated Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated:

.1 Include list of codes, loads, and other factors used in performing these services.
.2 Include Letter of Commitment and Letter of Compliance when directed by technical specification section.

.3 Schedule of Tests and Inspections: Prepare in tabular form and include the following:

.1 Specification section number and title.
.2 Description of test and inspection.
.3 Identification of applicable standards.
.4 Identification of test and inspection methods.
.5 Number of tests and inspections required.
.6 Time schedule or time span for tests and inspections.
.7 Entity responsible for performing tests and inspections.
.8 Requirements for obtaining samples.
.9 Unique characteristics of each quality control service.

.4 Reports: Prepare and submit certified written reports that include the following:

.1 Date of issue.
.2 Project title and number.
.3 Name, address, and telephone number of testing agency.
.4 Dates and locations of samples and tests or inspections.
.5 Names of individuals making tests and inspections.
.6 Description of the Work and test and inspection method.
.7 Identification of product and Specification section.
.8 Complete test or inspection data.
.9 Test and inspection results and an interpretation of test results.
.10 Ambient conditions at time of sample taking and testing and inspecting.
.11 Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
.12 Name and signature of laboratory inspector.
.13 Recommendations on re-testing and re-inspecting.

.5 Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

.1 Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

.2 Factory Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

.3 Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

.4 Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.

.5 Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

.6 Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, and that specializes in types of tests and inspections to be performed.

1.8 MOCK-UPS

.1 Before installing portions of the Work requiring mock-ups, build mock-ups for each form of construction and finish required to comply with the requirements of this section, and any additional requirements listed in the technical sections, using materials indicated for the completed Work.

.2 Build mock-ups in location and of size indicated or, if not indicated, as directed by Consultant.

.3 Notify Consultant seven (7) days in advance of dates and times when Mock-ups will be constructed:

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

.2 If requested, the Consultant will assist in preparing a schedule fixing the dates for preparation or mock-ups.

.4 Demonstrate the proposed range of aesthetic effects and workmanship.

.5 Obtain Consultant's acceptance of mock-ups prior to starting work, fabrication, or construction; unacceptable mock-ups shall be modified or replaced as directed by the Consultant as required to obtain acceptance.

.6 Maintain Mock-ups during construction in an undisturbed condition as a standard for judging the completed Work.

.7 Demolish and remove mock-ups from Project site when directed by the Consultant; acceptable mock-ups in an undisturbed condition at the time of Substantial Performance may become part of the completed Work where they form a part of the completed Work.

1.9 QUALITY CONTROL

.1 Owner Responsibilities: Where quality control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services:
- .1 Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
- .2 Costs for re-testing and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- .3 The following types of testing and inspection will be paid for by the Owner:
  - .1 Additional tests and inspections may be required by the Owner where tests are determined to be necessary.
  - .2 All other testing and inspection required by Specifications or by authorities having jurisdiction shall be paid for by the Contractor. Include costs in Bid.

.2 Contractor’s Responsibilities: Unless otherwise indicated, provide quality control services specified and required by authorities having jurisdiction:
- .1 Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality control services. Contractor shall not employ the same entity engaged by Owner, unless agreed to in writing by Owner.
- .2 Contractor to include in the work the following testing inspections and as indicated in the Specifications.
  - .1 AWMAC – Reference Section 06 40 00
  - .2 MPDA – Reference Section 09 91 00
- .3 Where services are indicated as the Owner’s responsibility, the Contractor shall contact Consultant and arrange with the Owner’s testing and inspection personnel to perform their Work at proper times.
- .4 Notify testing agencies at least three (3) working days in advance of time when Work that requires testing or inspecting will be performed.
- .5 Where quality control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality control service.
- .6 Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
- .7 Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- .8 Submit electronic copy of inspection and test reports to the Consultant.

.3 Contractor's Project Control: Ensure that only specified or approved materials are used. Provide and maintain an effective quality control program and perform sufficient inspections and tests of all items of Work, including those of Subcontractor, to ensure compliance with Contract Documents:
- .1 Ensure that installation is in accordance with the Specifications and to manufacturer's directions, or to methods that have been submitted and approved in writing by the Consultant prior to proceeding with the Work.
- .2 The project Superintendent shall communicate these requirements to the trade foremen immediately before the Work of their trade commences at the site.

.4 Subcontractor’s Responsibility: The Contractor will coordinate and assign testing requirements to individual Subcontractors. Tests required by Subcontractors shall be paid for by Subcontractors, unless tests are specifically noted as being paid for by the Owner or Contractor.

.5 Manufacturer's Field Services: Where indicated, engage a factory authorized service representative to inspect field assembled components and equipment installation, including service connections. Report results in writing.

.6 Testing Agency Responsibilities: Cooperate with Consultant and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections:

.1 Notify Consultant and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
.2 Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
.3 Submit a certified written report, in duplicate, of each test, inspection, and similar quality control service through Contractor when tests are paid for by Contractor, or to the Owner when paid for by the Owner.
.4 Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
.5 Do not perform any duties of Contractor.

.7 Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
.1 Access to the Work.
.2 Incidental labour and facilities necessary to facilitate tests and inspections.
.3 Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
.4 Facilities for storage and field curing of test samples.
.5 Preliminary design mix proposed for use for material mixes that require control by testing agency.
.6 Security and protection for samples and for testing and inspecting equipment at Project site.

.8 Coordination: Coordinate sequence of activities to accommodate required quality assurance and quality control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting:
.1 Schedule times for tests, inspections, obtaining samples, and similar activities.
.2 Distribution: Distribute schedule to Owner, Consultant, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.10 RE-TESTING/RE-INSPECTIONS

.1 Re-testing/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality control services, including re-testing and re-inspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.

.2 Costs for re-testing and re-inspections shall be paid for by Contractor or as otherwise assigned to responsible Subcontractor by the Contractor.

1.11 REJECTED WORK

.1 Remove defective Work, whether the result of poor workmanship, use of defective products or damage and whether incorporated in the Work or not, which has been rejected by the Consultant as failing to conform to the Contract Documents. Replace or re-execute in accordance with the Contracts Documents.
.2 Make good other Contractor's work damaged by such removals or replacements promptly.
.3 Where corrective work is not expedient to repair rejected Work, or Work is not performed in accordance with the Contract Documents, the Owner may deduct from the Contract Price the difference in value between the Work performed and that called for by the Contract Documents, the amount of which shall be determined by the Consultant.

1.12 COORDINATION OF TESTING BY CONTRACTOR

.1 Contractor will coordinate all testing required by Owner and individual requirements of the specifications.

.2 Subcontractor shall furnish to Contractor, upon request, test results from testing performed by Subcontractor and as required by technical specifications.

2.0 PRODUCTS

2.1 MOCK-UPS

.1 Erect mock-ups on-site, at locations acceptable to Consultant.

.2 Reviewed and accepted mock-ups will become standards of workmanship and material against which installed work will be assessed.

.3 Required mock-ups are listed in the Technical Specification Sections (Divisions 02 through 40). Some mock-ups require several sections of work to cooperate and construct a complete assembly. Coordinate the activities of these sections to ensure that required mock-ups are completed.

.4 In addition to the Mock-Ups specified in the Technical Specification Sections, the Consultant will require the following:

.1 Provide list of mock-ups required from technical sections.

.5 Mock-ups that are found acceptable by the Consultant may form a part of the permanent work of the Project. Where modifications are required, they shall be completed and form the standard of acceptance for the remainder of the Project. Where mock-ups are found not acceptable, mock-up shall be repaired or replaced as directed. Specification sections identify whether the mock-up may remain as part of the Work or must be removed.

3.0 EXECUTION

3.1 REPAIR AND PROTECTION

.1 General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes:

.1 Comply with the Contract Document requirements for Section 01 73 29 – Cutting and Patching.

.2 Protect construction exposed by, or for quality control service activities.

.3 Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality control services.

END OF SECTION 01 14 50

1.0 GENERAL

1.1 SUMMARY

.1 This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.

.2 Temporary utilities may include, but are not limited to, the following:
- .1 Sanitary facilities, including toilets, wash facilities, and drinking water facilities.
- .2 Telephone and Internet service.

.3 Support facilities include, but are not limited to, the following:
- .1 Temporary signs
- .2 Field offices
- .3 Storage and fabrication areas
- .4 Lifts and hoists
- .5 Temporary elevator usage
- .6 Construction aids and miscellaneous services and facilities

.4 Security and protection facilities include, but are not limited to, the following:
- .1 Security enclosure and lockup.
- .2 Barricades, warning signs, and lights.
- .3 Fire protection.

1.2 RELATED SECTIONS

.1 Section 01 32 00 – Project Schedules: Indicate installation of critical temporary facilities, and installation and removal of temporary utilities.

.2 Divisions 2 through 49 for temporary heat, ventilation, and humidity requirements for installation environment for products in technical sections.

1.3 AVAILABILITY OF UTILITIES

.1 It is the intention of the Owner to allow the Contractor to use of existing available services such as water, electricity, etc., however, in the event of any unforeseen occurrence, the Owner may discontinue such temporary service, without notice, and without acceptance of any liability, for damage or delay, caused by such withdrawal of temporary services.

.2 Supply of temporary services by the Owner is subject to the requirements of the Owner and the level of availability of existing services.

.3 Contractor shall bear costs of all temporary services required for the project in excess of those, available from existing services, supplied by the Owner.

1.4 SUBMITTALS

.1 Temporary Utility Reports: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.

1.5 QUALITY ASSURANCE

.1 Arrange for authorities having jurisdiction to test and inspect each temporary utility before use.

.2 Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

.1 Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

.2 Keep temporary services and facilities clean and neat.

.3 Relocate temporary services and facilities as required by progress of the Work.

2.0 PRODUCTS

2.1 MATERIALS

.1 Provide new materials; undamaged, previously used materials in serviceable condition may be used if approved by Consultant. Provide materials suitable for use intended.

.2 Lumber and Plywood: In accordance with requirements in Section 06 10 00 – Rough Carpentry.

.3 Gypsum Board: Minimum 16 mm (5/8”) thickness x 1220 mm (48”) wide by maximum available lengths; regular type panels with tapered edges, as specified in Section 09 29 00 – Gypsum Board Systems.

.4 Insulation: Unfaced mineral fibre blanket, manufactured from glass, slag wool, or rock wool; with maximum flame spread and smoke developed classification of 25/50, as specified in Section 07 21 00 – Thermal Insulation.

.5 Paint: In accordance with requirements in Section 09 91 00 Painting.

.6 Tarpaulins: Fire resistive labelled with flame spread rating of 15 or less.

.7 Water: Potable.

2.2 FIRE PROTECTION

.1 Provide hand carried, portable, ULC rated fire extinguishers in class and extinguishing agent as indicated or a combination of extinguishers of NFPA recommended classes for exposures encountered on the work site.

.2 Fire extinguishers will in accordance with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

.3 During full time of construction, while existing buildings remain occupied, maintain free unobstructed access to all sides of existing buildings for fire department vehicles. Confirm access with fire department.

2.3 EQUIPMENT

.1 Provide equipment suitable for use intended.

.2 Provide containerized, tap dispenser, bottled water drinking water units, including paper cup supply.

.3 Provide properly configured, NEMA polarized outlets to prevent insertion of 110 V plugs into higher voltage outlets; equipped with ground fault circuit interrupters, reset button, and pilot light.

.4 Provide power distribution system circuits, and overhead and exposed for surveillance, wiring circuits, not exceeding 125 VAC, 20 A rating, and lighting circuits may be non-metallic sheathed cable in accordance with the requirements of the authorities having jurisdiction.

2.4 HOARDING

.1 Provide appropriate hoarding as indicated on drawing to contain the project area.

2.5 PROTECTION OF BUILDING FINISHES AND EQUIPMENT

.1 Provide protection for finished and partially finished building finishes and equipment during performance of the Work.

.2 Be responsible for damage incurred due to lack or improper protection.

2.6 SECURITY

.1 The Contractor shall adequately protect their work and adjoining work at all stages of construction until the work has been accepted by the Consultant and Owner.

2.7 FIRST AID

.1 Provide first aid resources and facilities for workers in accordance with WCB requirements and local authorities.

3.0 EXECUTION

3.1 INSTALLATION, GENERAL

.1 Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

.2 Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 WASTE DISPOSAL FACILITIES

.1 Provide waste collection containers in sizes adequate to handle waste from construction operations.

.2 Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste.

.3 Provide separate containers, clearly labelled, for each type of waste material to be deposited, if required by authorities having jurisdiction, and as per requirements of Section 01 74 19 Waste Management.

3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

.1 Secure project site against illegal entry at end of each workday.

.2 Provide protection, operate temporary facilities, and conduct construction in ways and by methods that in accordance with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

.3 Avoid using tools and equipment that produce harmful noise:

.1 Restrict use of noisemaking tools and equipment to hours that will minimize complaints from neighbouring persons or businesses near Project site.

.2 Restrict use of noisemaking tools and equipment to in accordance with local bylaws and the authorities having jurisdiction.

.3 Refer to Tenant Work Rules in Appendix 3 of specification.

3.4 TEMPORARY FIRE PROTECTION

.1 Install and maintain temporary fire protection facilities of types needed to protect against reasonably predictable and controllable fire losses until permanent facilities are complete and operational.

.1 In accordance with requirements of authorities having jurisdiction and NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations.

.2 Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.

.1 Class ABC dry chemical extinguishers or a combination of extinguishers of NFPA recommended classes for exposures.

.2 Locate fire extinguishers where convenient and effective for their intended purpose; provide not less than one extinguisher on each floor at or near each usable stairwell.

.2 Store combustible materials in containers in fire safe locations.

.3 Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways, and other access routes for firefighting. Prohibit smoking in hazardous fire exposure areas.

.4 Supervise welding operations, combustion type temporary heating units, and similar sources of fire ignition.

.5 Develop and supervise an overall fire prevention and first aid fire protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 OPERATION, TERMINATION, AND REMOVAL

.1 Enforce strict discipline in use of temporary facilities to minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

.2 Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.

.3 Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Declaration of Substantial Performance.

3.6 TERMINATION AND REMOVAL

.1 Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Performance.

.2 Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

.3 Materials and facilities that constitute temporary facilities are the property of Contractor.

END OF SECTION 01 15 00

1.0 GENERAL

1.1 SUMMARY

.1 This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
- .1 General project coordination procedures.
- .2 Project meetings.
- .3 Coordination of Drawings.
- .4 Administrative and supervisory personnel.

.2 Each Subcontractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to specific Subcontractors by the Contractor.

1.2 RELATED SECTIONS

.1 Section 01 10 00 – General Instructions

.2 Section 01 77 00 – Contract Closeout Procedures

1.3 COORDINATION

.1 Contractor shall coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work.

.2 Contractor shall coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation with the Subcontractors as follows:
- .1 Scheduling construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
- .2 Coordinating installation of different components with Subcontractors to ensure maximum accessibility for required maintenance, service, and repair.
- .3 Making adequate provisions to accommodate items scheduled for later installation.

.3 Contractor will prepare memoranda if necessary, for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings:
- .1 Prepare similar memoranda for Owner if coordination of Owner installed Work is required.

.4 Subcontractor will coordinate scheduling and timing of required administrative procedures with other construction activities, and activities of other contractors if any, to avoid conflicts and to ensure orderly progress of the Work. Administrative activities include, but are not limited to, the following:
- .1 Preparation of Contractor's Construction Schedule.
- .2 Preparation of the Schedule of Values.
- .3 Installation and removal of temporary facilities and controls.
- .4 Delivery and processing of submittals.
- .5 Progress meetings.
- .6 Preinstallation conferences.
- .7 Project closeout activities.

1.4 SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittals.

.2 Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
- .1 Indicate relationship of components shown on separate Shop Drawings.

.2 Indicate required installation sequences.

.3 Staff Names: Within 5 days of starting construction operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site:
.1 Identify individuals and their duties and responsibilities;
.2 List addresses and telephone numbers, including home and office telephone numbers;
.3 Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

.4 Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.

1.5 PROJECT MEETINGS

.1 Schedule and administer site meetings throughout the progress of the work on a minimum of biweekly basis.

.2 Prepare and distribute agenda at least three (3) days prior to the meetings.

.3 Distribute written notice of each meeting seven (7) days in advance of meeting date to Departmental Representative.

.4 Meeting space will be held in site trailer provided by the Contractor.

.5 Preside at meetings.

.6 Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.

.7 Reproduce and distribute copies of minutes within five (5) days after meetings and transmit to meeting participants and affected parties not in attendance, Departmental Representative and Consultants.

.8 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.6 PROGRESS PHOTOS

.1 Provide weekly progress photos showing progress of work. Photos to be high resolution jpeg files organized in folder by date.

2.0 PRODUCTS

2.1 NOT USED

3.0 EXECUTION

3.1 NOT USED

END OF SECTION 01 31 00

1.1 DEFINITIONS

.1 Master Schedule – The schedule, as prepared by the Consultant and Owner, which outlines the schedule for the complete project.

.2 Construction Schedule – The schedule prepared by the Contractor, which outlines the timing of the construction activities, that when agreed to by the Consultant, will form the schedule for the contractor as called for in the contract. Construction Schedule shall include shop drawing, material and equipment procurement, record drawing and commissioning activities.

.3 2-Week Forward Planning Schedule – The schedule prepared by the Contractor, which details the construction activities to be executed within the forthcoming two (2) weeks. This schedule shall be updated weekly.

.4 Milestones – The timeframes or points in the Master Schedule, which are pertinent to the overall completion of the project.

END OF SECTION 01 32 00

1.0 DOCUMENTS

.1 This section of the specification forms part of the contract Documents and is to be read, interpreted and coordinated with all other parts of the specification.

.2 Submittals are shop drawings, diagrams, illustrations, schedules, performance charts, brochures, products and other data, which the Contractor provides to illustrate details of a portion of the Work.

2.0 ADMINISTRATIVE

.1 Provide submittals listed in specification sections for review. Submit in orderly sequence so as to not cause delay in the work. Failure to submit samples in time is not considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be permitted.

.2 Work affected by the submittal will not proceed until review by the Consultant is complete.

.3 Review submittals prior to submission to the Consultant. This review by the Contractor indicates that necessary requirements have been determined with requirements of the Work and Contract Documents. Submittals not reviewed, dated stamped and signed by the Contractor will be returned without being examined and shall be resubmitted when completed.

.4 Verify that field measurements and affected adjacent work are coordinated.

.5 The Contractor’s responsibility for errors and omissions in submissions is not relieved by the Consultant’s review of submittals.

.6 The Contractor’s responsibility for deviations in submission from requirements of Contract Documents is not relieved by the Consultant’s review of submittals unless a deviation on the submittal is noted as such in writing and has been approved by the Consultant.

3.0 SHOP DRAWINGS

.1 The Contractor is responsible for submitting and instructing Subcontractors and suppliers to submit through its office to the Consultant all shop and setting drawings or diagrams in pdf format.

.2 Indicate materials, construction methods and attachment or anchorage, erections diagrams, connections, explanatory notes and other information necessary for completion of the work. Where articles or equipment attach or connect to other articles or equipment, indicate that they have been coordinated regardless of what section adjacent equipment will be supplied and installed. Indicate cross-references to design drawings and specifications.

.3 Make review comments, adjustments or revisions to be brought to the Contractor’s or supplier’s attention by the Consultant or applicable engineering consultant and returned to the Contractor for printing and distribution. Resubmission of shop tracing may be at the Consultants’ discretion. Shop drawings which require extensive correction will be sent back for revisions and resubmission as noted.

.4 The Contractor and each Subcontractor or supplier shall conform to review comments, adjustments and stamped instructions of each shop drawing reviewed.

.5 If, after Consultant review, only minor corrections are to be made, shop drawings will be returned and fabrication and installation of the Work may proceed. Only drawings rejected or noted for revisions and resubmission need be resubmitted through the same review procedure. Include revisions required by previous reviews before resubmission.

.6 No Work which is dependent on shop drawing information will proceed until final review has been completed by the Consultant. The contractor is responsible for Work performed prior to receipt of final reviewed shop drawings. No review comments and adjustments made on shop drawings by the Consultant shall be construed as authorization for changes in the Work or the Contact Price. If adjustment affects the value of the Work, advise the Consultant in writing prior to proceeding with the Work.

.7 File one (1) copy of each final reviewed shop drawing on site for construction, reference and viewing by the Consultant.

.8 Prepare shop drawings to the same measurement system (i.e.: metric or imperial units) as the Contract Documents.

.9 Contractor to submit all shop drawings in PDF format. Electronic submissions will only be reviewed and returned electronically. No hardcopies will be returned to contractor.

4.0 PHOTOGRAPHS

.1 Provide digital photographs in a format acceptable to the Owner showing standard progress of the work at weekly intervals during the work.

.2 Photographs shall show a minimum of six (6) different views of the work.

5.0 DOCUMENTATION SUBMITTALS

.1 The following is a consolidated checklist provided for convenience only and shall not limit in any manner whatsoever the requirements of the General Conditions and amendments thereto under the Supplementary Conditions.

.2 The following shall be submitted within five (5) days of award of contract:
- .1 A complete Demolition schedule.

.3 The following shall be submitted within ten (10) days after award of contract:

.4 The following documentation shall be submitted by the Contractor with the application for first payment under the Contract:
- .1 Workers' Compensation Board letter stating that the Contractor and all Subcontractors are in good standing.
- .2 Sample of proposed statutory declaration forms and list of corporate signing officers.
- .3 Shop drawings submittal schedule.
- .4 Statement regarding outstanding claims.

.5 The following shall be submitted by the Contractor with each subsequent payment under the contract.
- .1 CCDC 9A Statutory and Declaration.
- .2 Updated Construction Schedule.
- .3 Photographs of the work.

.6 During progress of the Work, the following documentation shall be provided by the Contractor:
- .1 Copies of inspection reports.
- .2 Daily record (at weekly intervals).
- .3 Updated Construction Schedules.
- .4 Photographs of work.

.7 The following documentation shall be provided by the Contractor prior to certification of Substantial Performance of the Work.
- .1 Reconciliation of all change orders.

.2 Workers' Compensation Board letter stating the Contractor and all Subcontractors are in good standing.

.8 The following documentation shall be provided by the Contractor prior to Total performance of the Work being certified by the consultant:

.1 Letter from Workers' Compensation Board stating that Contractor and all Subcontractors are in good standing.

.2 Verification that no liens are registered against the Site.

.3 Certification, acceptable to the Owner, stating that all taxes, Employment Insurance payments, Canada Pension Plan contributions, duties, royalties and all other monies required to be paid by law or statute have been paid in full by the Contractor and Subcontractors and other parties as applicable.

.4 Establish methods and procedures of work and control necessary to provide the effective application of planning to progress of the Work.

.5 Final Statement Regarding outstanding Claims.

END OF SECTION 01 33 00

1.1 GENERAL

.1 The Contractor shall be responsible for the safety of all persons and property on or about the Work and for ensuring that the Work is performed in accordance with all applicable safety requirements.

Without in any way limiting the generality of the foregoing, the Contractor shall comply fully with the following provisions

.1 Observe and enforce construction safety measures of the National Building Code of Canada, the Workers Compensation Act, The Workplace Safety and Health Act, The Department of Labour, Municipal Statues, Bylaws and any other authorities applicable to this project. The Contractor is responsible for compliance with these standards for all workers engaged in the work of this Contract.

.2 In event of conflict between any provisions of above authorities, the most stringent provision will apply.

.3 Provide at least seventy-two (72) hours written notice to all utility companies and property owners in the immediate vicinity of his operations prior to the commencement of construction and shall, if requested, cooperate with such parties in the protection, removal or relocation of their installations and property.

.4 Develop, maintain and supervise for the duration of the work a comprehensive safety program that will effectively incorporate and implement all required safety precautions. The program shall, as a minimum, respond fully to the requirements of all applicable laws, ordinances, rules, regulations and orders and general construction practices for the safety rules and regulations of the Owner and any Workers' Compensation of Occupational Health and Safety legislation or regulations that may be applicable (e.g. WHMIS).

.5 Supply and maintain, at his own expense, at his site office or other well known place at the job site, safety equipment necessary to protect the workers and general public against accident or injury as prescribed by the governing authorities.

.6 Hold regular safety meetings. Such meetings shall occur not less than once per week. The Contractor will record the minutes of such meetings and maintain a complete file for review for review by the appropriate authorities.

.7 Designate a safety officer who shall be qualified and authorized to supervise and enfore compliance with the safety program.

.8 Report in writing to the Owner and the Consultant all accidents of any sort arising out of or in connection with the performance of the Work whether on or adjacent to the job site, giving full details and statements of witnesses. If death or serious injuries or damages are caused, the accident shall be promptly reported by the Contractor to the Owner and the Consultant by telephone or messenger in addition to any reporting required under provincial laws and regulations.

.9 If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Owner and the Consultant, giving full details of the claim.

.10 Night work will be performed by the Contractor only if permission is given beforehand by the appropriate authorities. When work is carried out at night, the Contractor shall supply a sufficient number of electric or other approved lights to enable the work to be done in a safe and satisfactory manner.

.11 Perform all work in a fire-safe manner and comply with all applicable governmental legislation and, without limiting the generality of the foregoing, shall supply and maintain at the job site adequate and proper fire fighting equipment.

1.2 WORK IN HAZARDOUS AREAS

.1 Before commencing the day's work and while working in areas, which may contain an explosive, toxic or oxygen deficient atmosphere, the Contractor shall test for explosive or toxic gases or oxygen deficiency. If a hazardous condition is found, the Contractor shall make the work area safe before commencing or continuing the work.

.2 Use non-sparking tools in areas where an explosive atmosphere may exist.

.3 Provide, mount and maintain signs warning all of the hazards and of the proper procedures required for working in the hazardous areas.

1.3 OVERLOADING

.1 Ensure no part of work is subjected to a load, which will endanger its safety or will cause permanent deformation.

1.4 GENERAL SAFETY REQUIREMENTS

.1 Promote and manage accident prevention programs, and provide safety and job instruction training. Provide written safety regulations to all workers.

.2 The Owner expects excellence in health and safety performance through the support and active participation of all Contractors, Subcontractors, and workers providing services on the project. All levels of management are responsible and accountable for providing a safe work environment with proper equipment, procedures, training and programs, and all workers must accept their responsibility in complying with health and safety legislation, rules and procedures, and to work in a manner which safeguards themselves and co-workers on the project.

.3 All tools and equipment must comply with standards and regulations having jurisdiction at the work site. The Contractor assumes all risks for the use of same. This applies for the duration of the project.

.4 All openings must be guarded with proper barricades or appropriate covers with warning identification.

.5 Guy wires erected by the Contractor must be identified with attached warning signs.

.6 All temporary heaters, lights and power cables, etc. must comply with the requirements of the Canadian Electrical Code and applicable regulations.

.7 Use proper entrances and routes in proceeding directly to the work under this contract, and avoid passing through other operating locations on the project.

.8 Wear appropriate protective clothing suitable for the task to cover and protect the body.

.9 Safety glasses with face shields or other suitable eye protection must be worn when engaged in work where they will be subjected to flying objects, injurious light or heat rays, or any materials liable to injure or irritate the eyes.

.10 All persons on the job site must wear CSA approved Industrial Headwater and CSA approved Protective Footwear.

.11 Safety harness must be used where work platforms or staging complete with guardrails is impractical.

.12 Scaffolding, swing stages or other temporary work platforms must be constructed and maintained, and used in compliance with Safety Regulations.

.13 Approved containers used to store drinking water must be clearly marked and must not be used for any other purpose.

.14 Provide for the use of the Owner or the Consultant safety equipment such as ropes, safety belts, and combustible/ hazardous gas and oxygen depletion meter. Provide casual

labour to the Owner or Consultant's staff when entry is required to manholes or other areas, which may be hazardous. The Owner or Consultant is not allowed to enter such areas alone.

.15 Instruct all workers in the emergency procedures established for the work site and their required regulations.

.16 Only authorized workers are permitted to operate, adjust and repair equipment. No unattended equipment should be left running.

.17 Alcohol and unauthorized drugs are prohibited on the property of the work site. Personnel using a medically prescribed drug may impair performance or judgment and must inform their supervisor in order that tasks may be assigned to ensure worker safety is considered.

.18 A standby worker must be located immediately outside of a confined space area to render assistance in the event of an unsafe or emergency condition, and all workers inside a confined space must wear a safety lifeline where a harmful atmosphere exists or may develop. An appropriate communication system must also be maintained between the standby worker and the inside worker(s).

END OF SECTION 01 35 23

1.0 GENERAL

1.1 DEFINITIONS

.1 Regulatory requirements mean laws, by-laws, ordinances, rules, regulations, codes, orders of authorities having jurisdiction, and other legally enforceable requirements applicable to the Work and which are or become in force during the performance of the Work.

1.2 REGULATORY REQUIREMENTS

.1 Except as otherwise specified, Contractor shall apply for, obtain, and pay all fees associated with, permits, licenses, certificates, and approvals required by regulatory requirements and the Contract Documents, based on General Conditions of Contract and the following:

.1 Regulatory requirements and fees in force on date of Bid submission, and,

.2 Any change in regulatory requirements or fees scheduled to become effective after date of tender submission and of which public notice has been given before date of tender submission.

.2 Owner will obtain permanent easements and rights of servitude that may be required for performance of the work.

.3 Contractor shall give all notices required by regulatory requirements.

2.0 PRODUCTS

2.1 CONTRACT DOCUMENTS

.1 Contractor shall not be responsible for verifying that Contract Documents comply with regulatory requirements.

.2 If Contract Documents are at variance therewith, or changes that require modification to Contract Documents are made to regulatory requirements, by authorities having jurisdiction, subsequent to date of bid closing, Contractor shall notify Consultant in writing, requesting direction, immediately such variance or change becomes known to him.

.3 Owner may make changes required to Contract Documents, and any resulting change in Contract Price or Contract Time will be made in accordance with the General Conditions of Contract.

.4 If Contractor fails to notify Consultant in writing and obtain Owner's direction as required in paragraph 2.1.2 above and performs work knowing it to be contrary to regulatory requirements, Contractor shall be responsible for and shall correct violations thereof and shall bear costs, expenses and damages attributable to his failure to comply with provisions of such regulatory requirements.

2.2 BUILDING CODE

.1 Conform to and perform work in accordance with the BC Building Code 2024, except as otherwise indicated in Contract Documents.

END OF SECTION 01 41 10

1.0 GENERAL

1.1 RELATED SECTIONS

.1 Section 00 10 00 – General Instructions

1.2 PRODUCT OPTIONS

.1 For products specified only by referenced standards and performance criteria, select any product that meets or exceeds the standard.

.2 For products specified by naming “Acceptable Materials”, select any product named.

.1 The term “Acceptable Materials” is used to specify products by trade name, manufacturer, catalogue number, model number, or similar reference.

.2 The term “Acceptable Materials” shall be deemed to establish the standard of acceptance that the Consultant will consider appropriate for the Work.

.3 Where a list of “Acceptable Materials” exists in the technical specification sections, any one of the specified products may be used to establish the Bid Price.

.3 Where the specification provides for selection of an option that is not consistent with the drawings and schedules (as in the case of a piece of equipment which differs from the equipment detailed in dimensions, service requirements, loads imposed on structures, etc.), and the Contractor elects to use that option, they then agree to coordinate the installation of the selected option into the Work, making such changes in the Work as may be required to accommodate the option and will bear costs and waive claims for additional compensation for costs that subsequently become apparent arising out of the option, including costs of the Consultant’s re-design, and preparation of drawings and details.

.4 For use of products other than those specified, refer to 1.3 below.

1.3 SUBSTITUTIONS

.1 Submit proposals for substitution only in writing in accordance with the Instructions to Bidders.

.2 Contractor will assemble requests for Substitutions requested by Subcontractors and submit to the Consultant for review.

.3 Consultant will review the substitute products with the Owner for acceptability within five (5) days after receipt of Proposed Substitutions.

.4 Consultant is not obliged to accept any Proposed Substitution offered by the Subcontractor. The Consultant reserves the right to dismiss any item with no further explanation.

.5 Accepted Proposed Substitutions will be provided in an addendum prior to tender closing.

.6 Completed list of substitutions must include statements of respective costs of items originally specified and proposed substitutions.

.7 Consultant may consider proposal if:

.1 Products specified are no longer available from the manufacturer.

.2 Delivery date of products proposed by contractor selected from those specified would provide schedule advantage or cost saving.

.3 Different products or construction methods to those specified that are considered by the Contractor as performing in a manner similar to, or superior to those specified.

.4 Verification that the substitute products can be obtained, meet the performance required for the project, and meet requirements of the BC Building Code 2018, and area acceptable to the Owner and are part of it’s standards.

.8 Include with Proposed Substitutions:

.1 Complete data substantiating compliance of the proposed substitute with contract requirements.

.2 Substitute Products, provide the following:

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

.2 Manufacturer's literature, including product description, performance and test data, reference standards, and limitations;

.3 Comparison of properties to specified products;

.4 Samples if appearance is relevant;

.5 Names and addresses of similar projects where the product has been used.

.3 Substitute Construction Methods, provide the following:

.1 Detailed description of the proposed method, and drawings illustrating it.

.2 Itemized comparison of proposed substitution with product or method specified.

.3 Data relating to changes in schedule.

.4 Detailed description of modifications required by proposed substitution to adjacent materials and configurations (if any).

.4 Verification that product complies with the BC Building Code 2018.

.9 Should Proposed Substitution be found acceptable by the Consultant and the Owner, in part or in whole, the Contractor shall:

.1 Assume full responsibility and costs when substitution affects any other Work.

.2 Ensure that drawings incorporating and coordinating aspects of affected Work bear the seal and signature of an Architect or Engineer registered in Province of the Work.

.10 In making a proposal for substitution the Contractor represents:

.1 That it has personally investigated the proposal and (unless the proposal explicitly states otherwise) determined that it performs in a similar way or is superior to the product or method specified;

.2 That the same guaranty will be furnished as for the originally specified product or construction method;

.3 That it will coordinate installation of the accepted substitute into the Work, making such changes in the Work as may be required to accommodate the change;

.4 That it will bear costs and waives claims for additional compensation for costs that subsequently become apparent arising out of the substitution;

.5 That the quotation is complete and includes related costs.

.11 The Consultant reserves the right to disregard any requests for substitutions submitted after the tender closes and that are not presented in with the information requested in 1.3.8 above.

.12 Substitutions will not be considered that are implicit in submitted shop drawings and samples rather than formally presented proposals as described above.

.13 Substitutions will not be considered which require substantial changes in the Contract Documents.

.14 No substitutions will be permitted without Consultant's written acceptance and issued as an addendum. Where substitutions are found in the Work that have not been formally accepted by the Consultant, the Contractor will be required to remove such products and replace with specified materials or provide a credit to the value of the contract at the Consultant’s discretion.

.15 Substitutions will not be considered that arise from negligence in ordering specified product in proper advance time considering place of origin of product, normal method of delivery and manufacturers ordering requirement. In the case of the preceding, Consultant will either select a substitute product or recommend that extraordinary delivery methods be utilized to deliver specified product at no additional cost to the Owner.

END OF SECTION 01 62 00

1.0 GENERAL

1.1 COORDINATION

.1 The Owner may employ other contractors to complete but not limited to the supply and installation of furniture, signage and IT services within the project area towards the end of the construction period. Contractor to coordinate work and delivery to site specified from owner's specified contractor and supplier's and to provide weather protected space on site to accommodate delivery of materials.

.2 Contractor shall coordinate with the Owner for installation of Owner installed items, blocking and servicing requirements and confirm dimensional requirements for items being built-in or attached to Contractor work.

.3 Contractor shall coordinate Owner supplied products, installed by Contractor for installation requirements, blocking and servicing requirements and confirm dimensional requirements for items being built-in or attached to Contractor's work.

2.0 PRODUCTS

2.1 OWNER'S WORK

.1 Owner's work will include but not limited to supply and installation of appliances, supply and installation of furniture, A/V system, and provision of IT equipment.

3.0 EXECUTION

3.1 PREPARATION

.1 Contractor shall provide all necessary framing, support and blocking to receive Owner's Work, all services roughing-in, in accordance with reviewed shop drawings, which will be later supplied by the Owner.

END OF SECTION 01 65 00

1.0 GENERAL

1.1 SUMMARY

.1 THIS SECTION INCLUDES PROCEDURAL REQUIREMENTS FOR CUTTING AND PATCHING.

1.2 RELATED SECTIONS

.1 Requirements in this Section apply to all other divisions of work, mechanical and electrical installations. Refer to mechanical and electrical drawings for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.3 DEFINITIONS

.1 **Cutting:** Removal of existing construction necessary to permit installation or performance of other Work.

.2 **Patching:** Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

.1 Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed.

.2 Include the following information on the request:

- .1 Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
- .2 Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in the work's appearance and other significant visual elements.
- .3 Products: List products to be used and firms or entities that will perform the Work.
- .4 Dates: Indicate when cutting and patching will be performed.
- .5 Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
- .6 Consultant's Acceptance: Obtain acceptance of cutting and patching proposal before cutting and patching. Review and acceptance of cutting and patching proposal does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

.1 Structural Elements: Do not cut and patch structural elements in a manner that could change their load carrying capacity or load deflection ratio.

.2 Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety, including but not limited to the following:

- .1 Primary operational systems and equipment.
- .2 Air or smoke barriers.
- .3 Fire protection systems.
- .4 Control systems.
- .5 Communication systems.
- .6 Electrical wiring systems.

.3 Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety, including but not limited to the following:

- .1 Equipment supports

.2 Piping, ductwork and equipment
.3 Noise and vibration control elements and systems

.4 Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Consultant's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner. If possible, retain original Installer or fabricator to cut and patch exposed Work listed below. If it is impossible to engage original Installer or fabricator, engage another recognized, experienced, and specialized firm, including but not limited to the following:
.1 Ornamental metal
.2 Matched veneer woodwork
.3 Firestopping and smokeseals
.4 Finished flooring
.5 Finished coatings
.6 Wall covering
.7 HVAC enclosures, cabinets, or covers

.5 Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.6 WARRANTY
.1 Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

2.0 PRODUCTS

2.1 MATERIALS
.1 General: Comply with requirements specified in other Sections of these Specifications.

.2 Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible:
.1 If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

3.0 EXECUTION

3.1 EXAMINATION
.1 Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed:
.1 Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

.2 Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION
.1 Temporary Support: Provide temporary support of Work to be cut in accordance with Section 01 15 00 – Temporary Facilities.

.2 Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

.3 Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

.4 Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

3.3 PERFORMANCE

.1 General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay:

.1 Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

.2 Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations:

.1 In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

.2 Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

.3 Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond core drill.

.4 Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

.5 Proceed with patching after construction operations requiring cutting are complete.

.3 Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications:

.1 Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

.2 Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

.3 Floors and Walls: Where walls or partitions that are removed extend from one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, colour, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform colour and appearance:

.1 Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

.4 Ceilings: Patch, repair, or re-hang existing ceilings as necessary to provide an even plane surface of uniform appearance.

END OF SECTION 01 73 29

1.0 GENERAL

1.1 PROJECT CLEANLINESS

.1 Maintain Work, including parking lot, in tidy condition, free from accumulation of waste products and debris, including that caused by Project Owner or other Contractors.

.2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Project Owner. Do not burn waste materials on site, unless approved by Project Owner.

.3 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on nor contaminate building systems.

.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. Location of containers must not impede traffic flow in parking lot.

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

.7 Dispose of waste materials and debris off site.

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

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

1.2 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.

.3 Remove waste products and debris including that caused by Project Owner or other Contractors.

.4 Remove waste materials from site at regularly scheduled times or dispose of as directed by Owner. Do not burn waste materials on site, unless approved by Owner.

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

END OF SECTION 01 74 11

1.0 GENERAL

1.1 WASTE MANAGEMENT GOALS FOR THE PROJECT

.1 The Owner has established that this Project shall generate the least waste possible and that processes shall be employed that ensure the generation of as little waste as possible including prevention of damage due to mishandling, improper storage, contamination, inadequate protection or other factors as well as minimizing over packaging and poor quantity estimating.

.2 Of the inevitable waste that is generated, ninety-five (95%) percent or more should diverted from going to landfills or incinerators, but shall be salvaged for reuse and or recycling. The objective is to divert recyclable and reusable wastes from landfill disposals by a minimum of 95%, ensuring that these will go to appropriate locations for recycling.

1.2 DEFINITIONS

.1 Clean Waste: Untreated and unpainted; not contaminated with oils, solvents, sealants or similar materials.

.2 Construction and Demolition Waste: Solid wastes typically including but not limited to, building materials, packaging, trash, debris, and rubble resulting from construction, re-modeling, repair and demolition operations.

.3 Hazardous: Exhibiting the characteristics of hazardous substances including, but not limited to, ignitability, corrosiveness, toxicity or reactivity.

.4 Non-hazardous: Exhibiting none of the characteristics of hazardous substances, including, but not limited to, ignitability, corrosiveness, toxicity, or reactivity.

.5 Non-toxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

.6 Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

.7 Recycle: To remove a waste material from the Project site to another site for remanufacture into a new product for reuse by others.

.8 Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

.9 Return: To give back reusable items or unused products to vendors for credit.

.10 Reuse: To reuse in some manner construction materials recovered from existing buildings or construction sites.

.11 Salvage: To remove a waste material from the Project site to another site for resale or reuse by others.

.12 Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

.13 Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

.14 Toxic: Poisonous to humans either immediately or after a long period of exposure.

.15 Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

.16 Volatile Organic Compounds (VOC's): Chemical compounds common in and emitted by many building products over time through outgassing
- .1 Solvents in paints and other coatings.
- .2 Wood preservatives; strippers and household cleaners.
- .3 Adhesives in particleboard, fibreboard, and some plywood; and foam insulation.
- .4 When released, VOC's can contribute to the formation of smog and can cause respiratory tract problems, headaches, eye irritations, nausea, damage to the liver, kidneys, and central nervous system, and possibly cancer.

.17 Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

.18 Waste Management Plan: A Project-related plan for the collection, transportation, and disposal of the waste generated at the construction site. The purpose of the plan is to salvage or reuse materials and ultimately reduce the amount of material being landfilled.

1.3 IMPLEMENTATION & EXECUTION

Implement the waste management plan as follows:

.1 Designate or act as On-Site recycling Coordinator whose duties will include the following:
- .1 Instruct subcontractors on application of Waste Management Plan.
- .2 Maintain recycling and waste bins in an orderly manner and clearly marked to avoid contamination of materials.
- .3 Inform designated haulers that a specific bin is ready to be removed and ensure the appropriate method of disposal is documented.
- .4 Designate an area for subcontrators to separte their construction debris into appropriate disposal bins.
- .5 Hold meeting for subcontractors when necessary if Waste Mnagement Plan is not being adhered to.
- .6 Verify hazardous wastes are beingseparated, stored and disposed of in accordance with local and EPA regulations.

.2 Supply disposal bins and recycle as required to complete the work.

.3 Record the weight/volume of outgoing mixed waste as well as visually estimate and record the composition of materials in the bin. Require the waste management company to provide the recycle rates and destination, either weekly or monthly, for all of the materials identified.

.4 A mixed debris bin may be used for some materials. If used, this bin will be sorted at an offsite regional sorting facility to separate recyclable materials from mixed bin.

1.4 OFFSITE SORTING

.1 Offsite sorting of constructin debris can substitute for onsite soting as follows:
- .1 Actual weights and volumes of the construction waste must be provided

.2 The recycler must confirm the destination and end use for each materials diverted from landfill and the resulting end-use.

1.5 CODE OF PRACTICE

.1 In addition to other requirements specified herein it is a requirement for the Work of this project that the Contractor comply with the GVRD's "3Rs Code of Practice for the Building Industry". Refer also to "Job Site Recycling: A Guide for Builders and Developers" and "Demolition & Salvage: A Guide for Developers and Renovators." All documents are available from the GVRD, Policy and Planning Department, telephone 604-437-GVRD(4873). Website address: www.gvrd.bc.ca/services/garbage/index.html.

1.6 REGULATORY REQUIREMENTS

.1 Conform to applicable codes and regulations for disposal and removal of common and hazardous waste. Handle and dispose of all hazardous and banned materials in accordance with the BC Waste Management's Act and Special Waste Regulation, and regional and municipal regulations. These hazardous and banned materials include but are not limited to asbestos, drywall (banned from disposal), underground storage tanks, Polychlorinated Biphenyl's (PCBs), abandoned chemicals (gasoline, pesticides, herbicides, flammable and combustible substances), freon from cooling equipment, lead-based paints, smoke detectors, and mercury containing switches.

.2 Licensed facilities: Only those brokerage, storage, transfer and disposal facilities which are licensed shall be used by the Contractor for the recycling and disposal of waste materials from the project.

1.7 WASTE MANAGEMENT PLAN

.1 Waste Management Plan: Within 10 calendar days after receipt of Notice of Award of Contract, or prior to any waste removal, whichever occurs sooner, the Contractor shall submit to the Owner and Consultant a Waste Management Plan. Attached is a sample format together with sample waste generation rates to aid the Contractor in formulating the Plan. The Contractor may use this form or provide a custom form containing the same information. The Plan shall contain the following:

.1 Analysis of the proposed job site waste to be generated, including the types of recyclable and waste materials generated (by volume or weight). In the case of demolition, a list of each item proposed to be salvaged during the course of the project should also be prepared.

.2 Alternatives to Landfilling: Contractor shall designate responsibility for preparing a list of each material proposed to be salvaged, reused, or recycled during the course of the Project.

.3 List of compulsory materials to be recycled, shall include, at minimum, the following materials:

.1 Old corrugated cardboard
.2 Clean dimensional wood, palette wood
.3 Concrete/Brick/Concrete Block/Asphalt
.4 Scrap Metal
.5 Drywall
.6 Paint (return to Paint Depot)

.4 List of additional optional materials to be recycled:

.1 Fluorescent Tubes
.2 Land clearing Debris

.5 List of Materials to be Salvaged:

.1 Brick and Block
.2 Electric Equipment and Light Fixtures

.2 Meetings: Contractor shall conduct Project Waste Management meetings. Meeting shall include subcontractors affected by the Waste Management Plan. At a minimum, waste management goals and issues shall be discussed at the following meetings:

.1 Pre-bid meeting
.2 Pre-construction meeting
.3 Regular job-site meetings

.3 Materials Handling Procedures: prevent contamination of materials to be recycled and salvaged and handle materials consistent with requirements for acceptance by designated facilities. Where space permits, source separations recommended. Where materials must be co-mingled they must be taken to a processing facility for separation off site.

.4 Transportation: The Contractor may engage a hauling subcontractor or self haul or make each subcontractor responsible for their own waste. In any case compliance with these requirements is mandatory.

.5 If requested submit, to the Consultant and/or Owner waybills, invoices and other documentation confirming that all materials have been hauled to the required locations.

.6 Waste Management Plan Implementation:
.1 Manager: The Contractor shall designate an on-site party (or parties) responsible for Instructing workers and overseeing and documenting results of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner, and the Consultant.
.2 Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner, and the Consultant.
.3 Instruction: The Contractor shall provide on-site instruction of appropriate separation, handling, and recycling to be used by all parties at the appropriate stages of the Project. On demolition projects the Contractor shall provide on-site instructions for salvage and requirements for reusing salvaged materials within the project, either in new construction or in a renovation.
.4 Separation Facilities: The Contractor shall lay out and label a specific area to facilitate separation of materials for recycling and salvage. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials. The requirement for separation will only be waived if the Contractor can demonstrate to the Owner/Consultant that there is insufficient room to accommodate it. If this is the case the materials must be sent to a processing facility for separation off site.
.5 Application for Progress Payments: The Contractor shall submit with each Application for Progress Payment a summary of waste materials, recycled, salvaged and disposed of by the Project using the form appended to this specification or a form generated by the Contractor containing the same information. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payment. The Summary shall contain the following information:
For each material salvaged and recycled from the Project, include the amount (in cubic yards or tonnes or in the case of salvaged items state quantities by number, type and size of items) and the destination (i.e. recycling facility, used building materials yard).
For each material land filled or incinerated from the Project, include the amount (in cubic yards or tonnes) of material and the identity of the landfill, incinerator and/or transfer station.

2.0 PRODUCTS

- Not Applicable

3.0 EXECUTION

.1 Sample- Construction Waste Management Diversion Summary. Note the data are sample only.

WASTE MATERIALS DESCRIPTION (Wood, Steel, Masonry)	**DIVERSION / RECYCLING HAULER OR LOCATION**	**AMOUNT OF WASTE (tonnes or cu.m.)**	**DIVERSION RATE (%)**	**QUANTITY OF DIVERTED / RECYCLED WASTE (tonnes or cu.m))**
TOTAL WASTE DIVERTED				

Total Constructuction Waste Sent to Landfill		**tonnes or cu m**
TOTAL - All Construction Waste		**tonnes or cu m**
Percentage of Construction Waste Diverted to Landfill		
***** *Calculations can be done by weight or volume but must be consistent*		

Explanatory note:

Waste generation rates vary depending on project type and size, sub trade efficiency, accurate material estimation, on-site materials storage procedures and product packaging.

Estimate the volumes or quantities of materials generated on the site by multiplying the floor area of your project with the generation rates listed for the different materials.

.2 Waste Management Plan

Name of Company	Contact Person	Telephone
Project Site/Location	Project Type ❿ Construction ❿ Demolition	Project Size (in square feet)

	Pre-Project	**Project Updates** **For Period:**	**to:**
Material	Estimated Generation	Recycled/Salvaged/Disposed	Facility
Total			

Signature	Title	Date

Explanatory note:

Column 1 - “Material” – enter materials targeted for recycling and/or salvage and include a category for waste materials requiring disposal.
Column 2 - “Estimated Generation” – enter estimated volumes (cu.yd.) or quantities (metric tonnes) of recyclable and waste materials generated and state number of salvageable items.
Column 3 - “Recycled/Salvaged/Disposed” – enter volumes (cu.yd.) or quantities (metric tonnes) of materials recycled and disposed and state number of items salvaged.
Column 4 - “Facility” – enter end-destination of recycled, salvaged and disposed materials.

.2 Sample Construction Waste Diversion Form – to be filled by Recycler.

Construction Waste Reduction and Management Plan

Name of Recycling Facility:					
Project Name and Location:					
Project Type:		☐ Construction	☐ Renovation	☐ Demolition	
Material	**Total Estimated Generation (m^3 or tonnes)**	**Proposed Quantity (m^3 or tonnes)**			
		Reuse/Resale	**Recycle**	**Dispose**	**Comments**
Totals					

Contact Name: _____	I declare that this report is accurate to the best of my knowledge.
Title:	
Phone Number:	Signature: _____
	Date: _____

Explanatory note:

Column 1 - "Material" – enter materials targeted for recycling and/or salvage and include a category for waste materials requiring disposal.
Column 2 - "Estimated Generation" – enter estimated volumes (cu.yd.) or quantities (metric tonnes) of recyclable and waste materials generated and state number of salvageable items.
Column 3 - "Recycled/Salvaged/Disposed" – enter volumes (cu.yd.) or quantities (metric tonnes) of materials recycled and disposed and state number of items salvaged.
Column 4 - "Facility" – enter end-destination of recycled, salvaged and disposed materials.

END OF SECTION 01 74 19

1.0 GENERAL

1.1 RELATED SECTIONS

.1 General Instructions Section 01 10 00

.2 Submittals Section 01 33 00

1.2 SUMMARY

.1 This Section includes administrative and procedural requirements for contract closeout, which prior to the application for substantial performance or substantial completion/ completion will be conducted in accordance with a specific take-over process as follows:

.1 Preparation of deficiency list by Contractor.

.2 Preliminary review by Consultant and confirmation of deficiency list.

.3 Interim procedures:

.1 Submission of warranties.
.2 Submission of record drawings.
.3 Submission of operations and maintenance manuals.
.4 Submission of maintenance materials and equipment.
.5 Submission of certificates required by Consultant.
.6 Instructions to Owner and Owners personnel.
.7 Completion of final cleaning.
.8 Submission of final construction photographs.
.9 Submission of deficiency list indicating items completed, and items outstanding.
.10 Occupancy Permit.

.4 Declaration of Substantial Performance:

.1 Final review by Consultant.
.2 Submittal of Declaration of Substantial Performance.
.3 Acceptance by Consultant of Contractor's declaration.
.4 Applications for Final Payment, and administration of Lien Holdback and other holdback amounts.

1.3 DEFICIENCY LIST

.1 Contractor and all Subcontractors shall conduct an inspection of the Work, identify deficiencies and defects and repair these as required to conform to the Contract Documents.

.2 Prepare a list of incomplete items and submit three (3) copies of list to Consultant prior to declaring Substantial Performance. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed that are outside the limits of construction:

.1 Organize list of spaces in sequential order.
.2 Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
.3 Include the following information at the top of each page:

.1 Project name.
.2 Date.
.3 Name of Owner.
.4 Name of Consultant.
.5 Name of Contractor.

.6 Page number.

.4 Include value of items on the list, and reasons why the item of work is incomplete or deficient.

.5 Include space for Consultant's verification check and any additional items that the Consultant may add during preliminary review.

.6 Include space for Contractor's Correction or Completion Date.

.7 A suggested format is as follows, prepared on Contractor's Letterhead:

Item Number	Room Number	Location (Area)	Description	Value ($)	Value ($) x 2	Correction / Completion Date	Consultant's Verification Check
1	W211	Room Name	Description of damage or deficiency. Cause of damage or deficiency. Recommended correction or completion procedure.	Accurate value of repair or rectification		Filled in when completed	Consultant will check during final review

.8 The accurate value for the repair or rectification of the deficiency shall be multiplied by a factor of 2 (2 times or 200%) in determining the total deficiency.

.9 Include in the deficiency cost all outstanding As-built documents, and project manuals. The value (as multiplied by 2) of the As-built documents and manuals will not be less than 3% of the work and 3% for the specific trade/subcontractor work.

1.4 PRELIMINARY REVIEW

.1 Consultant will conduct a preliminary review after receipt of deficiency list and confirm contents, and may list additional items arising from preliminary review.

.2 Modifications to the deficiency list will be discussed with the Contractor. Contractor will be requested to update list to reflect changes arising from preliminary review ready for request for final review.

1.5 INTERIM PROCEDURES

.1 Prior to requesting final review, the Contractor shall undertake the following items in preparation for declaration of Substantial Performance.

.2 Submit a written certificate to Consultant that the following have been performed:

.1 Work has been completed and inspected for compliance with Contract Documents.

.2 Contractor's start-up of equipment and systems, functioning within normal operating parameters.

.3 Defects have been corrected and deficiencies have been completed.

.4 Equipment and systems have been tested, adjusted and balanced and are fully operational.

.5 Preliminary As-built red-line Drawings and Specifications have been completed and submitted to Consultant.

.6 Operation of systems have been demonstrated to Owner's personnel.

.7 Work is complete and ready for Final Review.

.8 Witnessed test results and list of attendees.

.3 Provide or complete the following items for the Owner prior to declaration of Substantial Performance:

.1 Advise Owner of pending insurance changeover requirements.

.2 Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

.3 Obtain and submit releases permitting Owner unrestricted use of the Work. Include occupancy permits, operating certificates, and similar releases.

.4 Prepare and submit final As-built red-lined drawings, Project Record Documents, operation and maintenance manuals, final construction photographs and similar final record information.

.5 Terminate and remove temporary facilities from Project site, along with mock-ups not forming a part of the final construction, construction tools, and similar elements.

.6 Complete final cleaning requirements.

1.6 FINAL REVIEW

.1 Request final review when the Work identified in deficiency list noted as incomplete is completed or corrected. The Consultant and Contractor will make a final review of the Work.

.2 Results of completed review will form the basis of Consultant's acceptance of Certificate of Substantial Performance.

.3 Should the Consultant determine that excessive deficiencies still exist, the final review will cease and the Contractor shall re-start the declaration procedure.

.4 Should the Consultant accept that the Work is substantially performed:

.1 The Consultant will issue a Letter of Acceptance of Contractor Certificate of Substantial Performance which will contain:

.1 Date of Substantial Performance and approval date.

.2 List of items to be completed or corrected.

.3 The time within which the Contractor shall complete or correct the Work of listed items.

.4 The amount of the holdback for deficiencies will be a minimum of 200% (2 times) of the estimated cost to correct the deficiencies.

1.7 PROJECT RECORD DOCUMENTS

.1 Submit two (2) copies of record drawings in draft form, prior to request for Substantial Performance.

.2 One copy will be returned after final inspection, with the Consultant's comments. Revise content of documents as required prior to final submittal.

1.8 RECORD DOCUMENTS – ACTUAL SITE CONDITIONS

.1 Record information on a set of black line opaque drawings, provided by the Owner.

.2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.

.3 Record information concurrently with construction progress. Do no conceal work until required information is recorded.

1.9 FINAL PAYMENT

.1 Following completion of lien period, submit claim for final lien payment in accordance with General Conditions.

.2 Submit certified copy of inspection list of items to be completed or corrected, endorsed and dated by Consultant. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

.3 There will be no partial release of the deficiency holdback. Once all items on the deficiency list have been completed or corrected or otherwise resolved, submit claim for final deficiency holdback payment in accordance with the General Conditions.

END OF SECTION 01 77 00

1.1 DEFINITION

.1 An organized compilation of operating and maintenance data including detailed technical information, documents and records describing operation and maintenance of individual products or systems as specified in individual specification sections and drawings.

1.2 GENERAL

.1 Assemble, coordinate, bind and index required data into Operations and Maintenance Manual.

.2 Submit complete Operation and Maintenance Manual to the Project Manager one (1) weeks prior to application for Total Performance of the Contract.

.3 Submit one (1) copy in PDF format.

.4 Organize data into the same numerical order as contract specifications.

.5 Label each section.

.6 Type lists and notes.

.7 Drawings, diagrams and manufacturers literature must be legible.

1.3 CONTENTS

.1 Binder 1:
- .1 Cover sheet containing:
  - .1 Date submitted
  - .2 Project title, location and project number
  - .3 Names and addresses of the Contractor, and all Subcontractors
- .2 Table of Contents of all binders
- .3 List of maintenance materials as specified
- .4 List of special tools as specified
- .5 List of spare parts as specified
- .6 Warranties, guarantees
- .7 Copies of approvals and certificates

.2 Remaining binders:
- .1 Cover sheet containing:
  - .1 Date submitted
  - .2 Project title, location and project number
- .2 Table of Contents of individual binder
- .3 Provide data as specified in individual sections
  - .1 List of equipment including service depot
  - .2 Nameplate information including equipment number, make, size capacity, model number and serial number
  - .3 Parts list
  - .4 Installation details
  - .5 Operating instructions
  - .6 Maintenance instructions for equipment
  - .7 Maintenance instructions for finishes

.3 Shop drawings:
- .1 Bind separately one complete set of reviewed final shop drawings and product data.

END OF SECTION 01 78 23

1.0 GENERAL

1.1 BONDS

.1 Bonding costs, including the expense of getting bonds executed, shall be borne by the Contractor.

.2 Provide the Owner with the following surety bonds within fourteen (14) days after Contract award:

.1 A Performance Bond to secure the due and proper performance by the Contractor of their obligations under the Contract in an amount equal to 50% of the Contract Price.

.1 The performance bonding period shall commence on the date of contract execution and end one (1) year from date of Substantial Performance.

.2 A Labour & Material Payment Bond in an amount equal to 50% of the Contract Price to secure:

.1 The due and proper payment of those having direct Contracts with the Contractor for labour, material and/ or services.

.2 Full reimbursement of the Owner for all liability and payments to those having direct Contracts with the Contractor for labour, material and/ or services in connection with the Contract.

.3 If a lien claim is filed against the title of the lands on which the work or any part thereof is performed in relation to the Contract by an entity other than the Contractor, the Contractor is to provide a Lien Bond to remove the registered lien claims and/ or certificates of action.

.4 Bonds are to be in favour of the Owner in a form satisfactory to the Owner.

.5 Bonds are to name the Owner as Obligee. The Obligors are the Contractor and a Guarantee Surety Company unobjectionable to the Owner and not insolvent, bankrupt, in receivership or winding-up proceedings.

.6 Guarantee Surety Company is to be a properly licensed surety company registered and duly authorized to transact the business of suretyship in the Province of British Columbia.

1.2 WARRANTY/ GUARANTY PERIOD

.1 Provide a One (1) year warranty for all Work of the Contract commencing on the date of substantial performance.

2.0 PRODUCTS

Not applicable.

3.0 EXECUTION

3.1 REMEDIAL WORK UNDER GUARANTY/WARRANTY

.1 Perform any required warranty repair work for the duration of the warranty period at no extra cost.

.2 Notice will be provided to the Contractor during the warranty period within thirty (30) days of the discovery of any defect in the Work. The Contractor shall take necessary steps to protect the area against further damage immediately upon receipt of notice and shall take corrective action to make good any damage incurred. The Contractor shall schedule repair work with the Owner and shall make every attempt to make good the defects within three (3) weeks of notice.

.3 Remedy is to be at no cost to the Owner and is to include all labour, material, equipment, and supervision necessary to make good defective areas of the Work and any damages incurred to obtain access to defective areas.

.4 The Contractor must reimburse the Owner for any resulting assessment costs incurred to define the extent of the defect and for costs incurred to test the repaired defect to confirm acceptability of repairs.

.5 The Contractor must reimburse the Owner for all associated costs incurred due to closure of the areas requiring repair under warranty.

.6 Warranty periods for areas requiring repair are to be extended by the amount of time lapse between issuance of notice and completion of remedial work. The warranty/ guaranty period will then re-commence upon completion of the remedial work.

.7 Warranties are not to be deemed to restrict any liability of the Contractor arising out of any applicable law.

END OF SECTION 01 78 36

1.0 GENERAL

1.1 RELATED SECTIONS

.1 General Instructions Section 01 10 00

.2 Contract Close-out Procedures Section 01 77 00

.3 Electrical and Mechanical drawings: Specific requirements from technical sections.

1.2 COORDINATION

.1 Coordinate content and presentations for demonstration workshops.

.2 Coordinate individual presentations and ensure representatives scheduled to present at seminars are in attendance.

.3 Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.

.4 Coordinate proposed dates for seminars with Owner and select mutually agreeable dates.

1.3 PREPARATION OF AGENDAS AND OUTLINES

.1 Prepare agendas and outlines including the following:
- .1 Equipment and systems, which will be included in seminars.
- .2 Name of companies and representatives presenting at seminars.
- .3 Outline of each seminar's content.
- .4 Time and date allocated to each system and item of equipment.

1.4 PROGRAM STRUCTURE

.1 Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections. For each training module, develop a learning objective and teaching outline. Include instruction for the following:
- .1 System design and operational philosophy, including the following:
  - .1 An overview of how system is intended to operate.
  - .2 Description of design parameters, constraints and operational requirements.
  - .3 Description of system operation strategies.
- .2 Review of documentation.
- .3 Operations.
- .4 Adjustments.
- .5 Troubleshooting.
- .6 Maintenance.
- .7 Repair.

.2 Present information dealing with equipment. Include following in presentations:
- .1 Explanation of how equipment operates.
- .2 Recommended preventative and routine maintenance.

1.5 DEMONSTRATION AND TRAINING

.1 Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system:
- .1 Provide instructors experienced in operation and maintenance procedures.
- .2 Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
- .3 Schedule training with Owner, through Consultant, with at least seven (7) days' advance notice.

.4 Arrange for presentation leaders familiar with the design, operation, maintenance and troubleshooting of the equipment and systems. Where a single person is not familiar with aspects of the equipment or system, arrange for specialists familiar with each aspect.

.2 Demonstrate operation of equipment and systems. Include the following in demonstration:
- .1 Start up and shut down.
- .2 Operation.
- .3 Scheduled and preventative maintenance.
- .4 Troubleshooting.
- .5 Demonstration may be conducted at time of original starting with Owner's prior approval.

.3 Demonstration and training questions:
- .1 Be prepared to answer questions raised by Owner at demonstrations and seminars. If unable to satisfactorily answer questions immediately, provide written response within three (3) days.

.4 Conditions for Demonstrations
- .1 Equipment has been inspected and put into operation.
- .2 Testing, adjusting, and balancing has been performed and equipment and systems are fully operational.
- .3 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

END OF SECTION 01 79 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and co-ordinated with all other parts.

1.2 SECTION INCLUDES

Generally, but not limited to the following:

.1 Demolish, remove existing millwork, walls (non-structural), mechanical and electrical fixtures; flooring, ceiling, etc. as shown on drawing, or as required to complete the work.

.2 All material and debris resulting from demolition shall be promptly removed from Site and disposed of in a legal manner. Salvaged materials are to be reused or turned over to the Owner as indicated in drawings or other sections of the spec.

.3 Selling of any materials at the Site is not permitted; Contractor will be assumed to have allowed for any credit he may obtain from such materials.

.4 Make good damaged areas, which will not be concealed by new construction. Make good all structural damage. Match patching and making good work at least to that displayed by the existing; provide so new surfaces are plumb, level and properly aligned with existing.

1.3 RELATED SECTIONS

.1 Mechanical

.2 Electrical

1.4 REQUIREMENTS OF REGULATORY AGENCIES

.1 Comply with all bylaws and acquire all necessary permits.

.2 Comply with all Workers' Compensation Board of B.C. Accident Prevention Regulations.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Store materials and equipment at Site only when immediately necessary, and as otherwise approved; and so as not to cause any obstruction.

1.6 SITE CONDITIONS

.1 The Contractor should accept the Site as it exists and will be responsible for all demolition work as shown on the Drawings or specified.

.2 The Contractor shall visit the Site at his own expense prior to the submission of Bids and take whatever time is required to ascertain the Site conditions and surrounding features related to the proposed demolition and new construction work, and ensure himself that conditions are suitable for the execution of the work.

.3 No additional sums of money will be allowed for any items resulting from lack of familiarity with the Site conditions; report any discrepancies to the Consultant.

.4 Use sufficient measures to protect existing services and existing space adjacent to the project area. Make good all damaged areas, which will not be covered up by new work.

.5 The Contractor will be held responsible for any such damage (movement or settlement) and must repair promptly such damage to the Owner's property at no additional cost to the Owner.

.6 Provide and maintain all legal and necessary hoarding, lights and warning signs during the execution of the work to fully protect all persons; provide adequate insurance in order that the Owner shall be saved harmless from any loss, damage, death or injury through neglect, carelessness, or incompetence of the Contractor, or the handling or condition of appliances.

.7 Maintain unobstructed safe access for personnel and removal of materials at all times.

.8 Take precautions to guard against movements, settlements, collapse and damages to adjacent structures, services, utilities and construction.

.9 Prevent debris from accumulating and blocking drainage systems and blocking safe exit passage to adjoining streets and property.

.10 Verify the existence of all known service utilities by Site examination and review of applicable engineering drawings available from the municipality, the Owner and the utility companies prior to submission of a bid and prior to the commencement of the work to identify exact locations.

.11 Keep fire extinguishing suppression equipment on hand at all times.

.12 Provide illumination for safe demolition and working conditions, but in no case less than prescribed by WSBC regulations in areas where work is being done.

1.7 SCHEDULING OF WORK

.1 Schedule the removal, capping and sealing of existing services first; then plan the demolition and removal of any other components.

.2 Sequence of Demolition is responsibility of the Contractor.

1.8 HAZARDOUS MATERIAL REMOVAL

.1 N/A

2.0 PRODUCTS

2.1 MATERIALS

.1 All materials, or equipment not specifically described but required for the proper completion of the work of this Section, shall be selected by the Contractor subject to approval by the Owner.

.2 Except for materials and equipment to be removed and relocated and materials designated to be salvaged, the Owner does not require recovery of any existing materials, fittings, fixtures and equipment to be salvaged during the demolition operation. All materials forming part of this Section of the work shall become the Contractors property and shall be removed entirely from the Site and disposed of in a legal manner to an approved disposal waste-dumping Site as applicable.

.3 Selling or burning of salvaged materials, fittings, fixtures, and equipment on Site is not permitted.

3.0 EXECUTION

3.1 INSPECTION

.1 Inspect the work and notify the Owner of any conditions affecting the performance of the work. Review the drawings and determine the total content of work to follow.

.2 Ensure all services, whether built-in or exposed, are properly located and marked as to position, type of service, size, direction of flow.

.3 Inspect materials, equipment, components to be reused or turned over to the Owner. Note their condition and advise the Owner in writing of any defects or conditions which would affect removal and reuse.

.4 Site verify and locate all existing services, in basement ceiling. Provide x-ray or GPR scan for re-bar prior to coring the concrete slab. Any damage to existing services will be the responsibility of the Contractor.

3.2 PREPARATION

.1 Cap off, disconnect and seal any required existing services, sanitary and storm sewers, waterlines, electrical and telephone services, gas service, in accordance with the contract documents as established by the appropriate consultant before starting with demolition.

.2 Take adequate measures during demolition to protect the public in conformance with CSA S350 and requirements of authorities having jurisdiction.

.3 Provide protection to ensure materials, finishes and surfaces to remain will not be damaged, scratched, or marred by work of this Section.

.4 Ensure that affected services and utilities designated for removal have been disconnected prior to the commencement of work.

3.3 WORKMANSHIP

.1 Do work in accordance with CSA S350 and Part 8.0 of BCBC 2024.

.2 Cutting, removing and demolition shall be performed so as not to cut or remove more that is necessary of to damage adjacent work. Cut existing construction back to meet straight lines allowing for replacement finishes of follow.

.3 Breakup large pieces of demolished material for handling and to prevent overloading and damage to existing construction.

.4 Schedule and execute all work in a careful manner with all necessary consideration to prevent injury or damages to persons and to surrounding property. Do not interfere with the passage to and from and operation of adjoining space.

.5 Do not let piled material endanger structure or persons at any time.

.6 Where any material, component, assembly or item is indicated for reuse, removal shall be by a trade, which normally provides or installs such an item.

.7 Store such items being reused in a protected area until ready to be reinstalled into the new construction proposed.

.8 Cut out and remove assemblies, materials, items indicated as being removed, abandoned or discarded on the drawings.

.9 Repair and make good damage to existing construction caused by the work of this Section. Use mechanics skilled in the type of work involved to replace such damaged work.

.10 Demolish in a manner as to minimize dusting. Keep dusty materials, areas contained within the project area.

.11 Clear and remove promptly by the end of each working day all demolished materials from the Site.

.12 Inspect existing conditions to confirm the extent and location of demolition will not damage adjacent areas.

.13 Should any conflicts arise, immediately contact the Consultant for direction prior to proceeding. At completion recover all materials. Leave Site neat and clean.

3.4 CLEAN-UP

.1 Continuously during the work of this Section remove all dirt, debris discarded material and deposit in waste containers. Keep routes to and from waste containers clear.

END OF SECTION 02 41 19

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and co-ordinated with all other parts.

1.2 SECTION INCLUDES

.1 Rough carpentry for the work.

.2 Rough carpentry work not specified under another section but required for the work shall be provided under this section whether or not specifically referred to herein.

.3 Backboards for electrical, telephone/communication as applicable.

.4 Backing for millwork, door frames, and wall stop.

1.3 RELATED SECTIONS

.1	Finish Carpentry	Section 06 20 00
.2	Architectural Woodwork	Section 06 40 00
.3	Storefronts	Section 08 43 00
.4	Supports for Plaster & Gypsum Board	Section 09 22 00
.5	Gypsum Board	Section 09 29 00

1.4 REFERENCE

.1 CSA B111-1974 Wire Nails, Spikes and Staples.

.2 CAN/CSA – G164-M92 Hop Dip galvanizing of irregularly shaped articles.

.3 CSA 0121-M78 Douglas Fir Plywood.

.4 CAN/CSA 0141-91 Softwood Lumber.

.5 CSA 0437 0-93, OSB Waterboard.

.6 National Lumber Grades Authority (NLGA) Standard Grading Rules for Canadian Lumber.

1.5 SOURCE QUALITY CONTROL

.1 Lumber shall be grade marked by an agency certified by the Canadian Lumber Standards Accreditation Board.

.2 Plywood shall be grade marked in accordance with the requirements of applicable CSA standards.

.3 Wood Treatment: CAN/CSA-080.

1.6 WASTE MANAGEMENT & DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 19.

.2 Separate wood waste in accordance with Waste Management Plan and place in designated areas.

.3 Set aside damaged wood for acceptable alternative uses (e.g. bracing, blocking, cripples, bridging, finger-joining, or ties). Store this separated reusable wood waste convenient to cutting station and area of work.

.4 Separate corrugated cardboard in accordance with Waste Management Plan and place in designated areas for recycling.

.5 Do not burn scrap at the project site.

.6 Fold up metal banding, flatten, and place in designated area for recycling.

2.0 PRODUCTS

2.1 MATERIALS

.1 Lumber

.1 Standards: unless specified otherwise, softwood, S4S material shall be used in accordance with the following standards:

Size, grading, inspection:	CSA 0141-1970
Species groups:	CSA 086-1976
Minimum grades:	National Lumber Grades Authority Standard Grading. Rules for Canadian Lumber NLGA 1987 edition.
Maximum moisture content:	12% interior.

.2 Furring, strapping, blocking: Douglas Fir, or Hemlock, Utility Grade.

.2 Plywood

.1 Standards: Douglas Fir Plywood: CSA 0121-M1978.

.3 Miscellaneous Materials

.1 Rough Hardware: Including machine bolts, washers, lag bolts, drift pins, dowels and such like, to CSA B33-1-1961; nails, spikes and staples to CSA B111-1974, galvanized in exterior locations, high humidity areas and elsewhere where liable to corrosion, and in treated lumber. Framing anchors by TECO, or other pre-approved as shown on structural drawings. Metal Fire stops: .455 mm (26 ga.) galvanized, as required by codes.

.4 Galvanizing: to CSA G164.

3.0 EXECUTION

3.1 INSTALLATION

.1 Install strapping, furring, blocking etc., where shown and elsewhere as required to space out and support other work.

.2 Locate, align and plumb faces of furring and blocking to accurate location of items supported to a tolerance of 1:600.

.3 Install wood cants, nailer curbs and other wood supports as required and secure using galvanized fasteners.

.4 Countersink hardware where necessary to provide clearance for other work.

.5 Co-ordinate with other trades and do all preparing, cutting, trimming as required for passage of their work. Attach plates, blocking, spacers, supports as required to receive and provide support for items supported.

.7 Provide blocking within wall assembly for all millwork cabinets.

3.2 CLEANING

.1 Remove all debris and excess material as work proceeds and at end of installation leaving area ready for other trades; repair any defects to this work or any other defects caused by this work.

END OF SECTION 06 10 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 RELATED SECTIONS

.1	Rough Carpentry	Section 06 10 00
.2	Architectural Woodwork	Section 06 40 00
.3	Gypsum Board	Section 09 29 00
.4	Linear Wood Panels	Section 09 54 26

1.3 SECTION INCLUDES

.1 Supply and installation of items of finish carpentry fabricated and installed on site as noted herein.

.2 Job-site assembly, installation, and fitting of shop-fabricated components specified under Section 06 40 00.

1.4 REFERENCES

.1 North American Architectural Woodwork Standards (NAAWS) as published by Architectural Woodwork Manufacturer's Association of Canada (AWMAC), latest edition.

1.5 QUALITY ASSURANCE

.1 If requested by the Consultant, install mock-up of millwork units for review.

.2 Ensure that components supplied to this section for installation are in accordance with reviewed shop drawings and that the components have been fabricated to suit the existing site conditions without modification.

.3 Items not given a specific quality grade shall be Custom grade as defined in the NAAWS.

.4 The quality of workmanship and installation shall conform to or exceed the minimum requirements of the AWMAC’s standard (NAAWS) and as specified herein.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Protect items from damage and moisture changes during delivery. Protect from damage by weather while in transit.

.2 Do not deliver and store items on site in advance of installation schedule. Deliver directly to room or area where items to be installed. Protect finished surfaces.

.3. Conform to NAAWS.

1.7 JOB CONDITIONS

.1 Coordinate the work of this section with the work of others to ensure built-in items are incorporated. Provide all drawings and dimensions for the proper location of built-in anchorage and the provision of rough openings.

.2 Maintain at an ambient temperature between 16 degrees Celsius to 20 degrees Celsius and relative humidity of between 43% to 55% in the completed building, for 48 hours before

installation and continuing up until final acceptance in rooms and areas in which work of this section is to be installed.

2.0 PRODUCTS

2.1 MATERIALS

.1 Supply miscellaneous hardware for installation of millwork items including nails, screws, bolts, nuts and washers.

.2 Supply and install blocking, backing and furring materials as required for installation.

.3 Douglas Fir Plywood: G.1.S (wood patches only permitted). G.2.S where exposed both sides.

3.0 EXECUTION

3.1 PREPARATION

.1 Obtain installation details for millwork from Section 06 40 00.

.2 Check hardware items delivered to ensure compliance with hardware schedule. Obtain installation instructions and templates.

.3 Cut to proper length and fit items supplied oversized.

.4 Provide anchors, nailers and blocking to secure millwork items.

END OF SECTION 06 20 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 SECTION INCLUDES

.1 Architectural millwork including service counter, glazed screen and kitchen cabinets, as shown on drawings.

1.3 RELATED SECTIONS

.1	Rough Carpentry	Section 06 10 00
.2	Finish Carpentry	Section 06 20 00
.3	Sealants and Caulking	Section 07 92 00
.4	Painting	Section 09 91 00

1.4 SUBMITTALS

.1 Submit shop drawings as follows:

- .1 Furnish shop drawings for review. Confirm all dimensions at site prior to fabrication. Detail all architectural woodwork construction at large scale not less than 1:20.
- .2 Shop drawings shall have been reviewed by AWMAC and carry AWMAC Inspector's review stamp of acceptance, as a condition of Guarantee Certificate, prior to submittal to Consultant.
- .3 Shop drawings shall show construction details of architectural woodwork, general arrangements, locations of all service outlets; typical and special installation conditions; the material being supplied and connections, attachments, anchorage and location of exposed fastenings, as applicable.
- .4 Shop drawings shall incorporate plans, elevations, sections and details for all work included in this section. Details shall show and specify all thicknesses, types, finishes, profiles, joints and hardware.
- .5 Submit duplicate samples of plastic laminate.
- .6 Submit hardware cut sheets.
- .7 Architectural woodwork is subject to inspection and approval by the Consultant prior to installation.
- .8 Submit manufacturer's descriptive literature of specialty items not manufactured by the Architectural Woodwork Manufacturers.
- .9 Provide maintenance data for all finishes and hardware, for incorporation into maintenance manual.

1.5 QUALITY ASSURANCE

.1 Refer to the North American Architectural Woodwork Standards (NAAWS) as published by Architectural Woodwork Manufacturer's Association of Canada (AWMAC) / Woodwork Institute (WI), Latest Edition.

.2 Any reference to "Custom" or "Premium" grade in this specification shall be as defined in the Standards.

.3 All millwork shall be Custom grade as defined in the standards.

.4 If requested by the Consultant, provide a unit of architectural woodwork to the site during shop drawing review stage.

.5 Unit to be as selected by the Consultant and is to be of the actual construction, materials, and finishes specified.

.6 If approved, unit may be installed as part of the contract.

.7 Single-Source Responsibility for Fabrication and Installation. Engage a qualified woodworking firm to assume undivided responsibility for fabricating, finishing and installing woodwork specified in this section.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Do not deliver architectural woodwork until building is in proper condition and suitable arrangements have been made to properly handle, prime, store and protect this work.

.2 Assemble architectural woodwork at mill; cover with protective weatherproof wrapping and deliver in sections to clear all access openings. Protect from damage during transport and handling.

.3 In accordance with AWMAC's standards.

1.7 JOB CONDITIONS

.1 Coordinate the work of this section with the work of others to ensure provisions for items to be incorporated in architectural woodwork items.

.2 Do not deliver architectural woodwork until rooms and areas in which work of this section to be installed are maintained at an ambient temperature between 16 degrees Celsius to 21 degrees Celsius, and a relative humidity of between 43% to 55% in the building, for 48 hours before installation and continuously up until final acceptance.

1.8 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste.

.2 Separate wood waste and place in designated areas.

.3 Set aside damaged wood for acceptable alternative uses (e.g. bracing, blocking, cripples, bridging, finger-joining, or ties). Store this separated reusable wood waste convenient to cutting station and area of work.

.4 Separate corrugated cardboard in accordance with Waste Management Plan and place in designated areas for recycling.

.5 Do not burn scrap at the project site.

.6 Fold up metal banding, flatten, and place in designated area for recycling.

1.9 GUARANTEE

.1 The architectural woodworker shall furnish the owner with a two (2) year maintenance bond to the full value of the architectural woodwork sub-contract, or a two (2) year M.M.A.B.C. (The BC Chapter of AWMAC) Guarantee Certificate, certifying that the architectural woodwork has been manufactured and/or installed in accordance with the standards incorporated in the AWMAC's standards, (edition in effect at time of tender).

2.0 PRODUCTS

2.1 GENERAL

.1 Clean, new stock to comply with AWMAC grade required using material as specified.

.2 Seal exposed and concealed surfaces of wood products containing formaldehyde to prevent off – gassing.

2.2 PLASTIC LAMINATE

.1 High Pressure Decorative Laminate (HPDL): Meeting CAN3 A172 or ANSI/NEMA LD3 composed of phenolic resin impregnated Kraft paper filler stock for Class 1 Decorative Laminate of Grade required by AWMAC Manual.

.2 Grade: General Purpose as noted below or indicated on drawing.

.3 Acceptable Manufacturers: Nevamar, Wilsonart, Formica, Arborite, Pionite, Arpa, Polilam.

.4 Cabinet tops and rigid plastic bases, countertops, backsplashes: 1.22mm (plus or minus 0.127 mm) thick Horizontal General Purpose Standard (HGS) Grade.

.5 Exposed vertical surfaces: 0.71 mm (plus or minus 0.012 mm) thick Vertical General Purpose Standard (VGS) Grade – cabinets, and outside of gables.

.6 Cabinet interiors: 0.51 mm thick Cabinet Liner Standard (CLS) Grade – shelves inside cabinets, interior of gables and backs, colour white U.O.N.; same colour as face laminates for back of laminated cabinet doors, drawers.

.7 Backing sheet: 0.51mm thick Backing Sheet (BK) Grade – Undecorated backing sheet grade laminate to be used on the backside of plastic laminated panel substrates to enhance dimensional stability of the substrate, for all laminated casework components where plastic laminate finish is applied to only one surface of the component substrate. All panel substrates not mechanically constrained, should be backed with a laminate manufacturer's backing sheet to minimize moisture absorption and provide substrate stabilization.

.8 Cabinet / drawer interiors alternate: Thermoset decorative overlays (Melamine panels) – low pressure decorative laminate pre-laminated by thermal fusion to particleboard, medium density fiber board or other cellulosic material to form a part of the manufactured panel.

.9 Plastic Laminate Schedule:

.1	PL-1	Nevamar	Golden Anigre	WA0001 Textured Suede
.2	PL-2	Nevamar	Chai	WK0025 Textured.

.10 Melamine:

.1 Panolam, S645 True White, Chamois Texture
.2 Panolam, S405 Black, Chamois Texture

2.3 CASEWORK AND CLOSET

.1 Conform to AWMAC's standards as applicable.

.2 Casework with Plastic Laminate Finish:

.1 AWMAC Quality Grade: Custom. Locations as noted on the drawings.
.2 Construction: Conform to AWS manual for Flush Overlay Casework. Close voids and cavities at inside corners and behind end fillers of upper cabinets.
.3 General: All cabinets to be made from 19mm plywood with hardwood edges complete with 13mm plywood backing.
.4 Exposed Parts: Plastic laminate on Medite 2 core, U.N.O.

.5 Semi-Exposed Parts: Plastic laminate on Medite 2 core. Color, pattern and finish to match exposed parts, U.N.O.

.6 Exposed Shelving, U.N.O: Medite 2 core in plastic laminate with matching ABS or PVC edges.

.7 Interior Shelving, U.N.O: 19 mm (or 25 mm for longer span as per AWMAC requirement) melamine with finished edges. All interior gables and interior backing to be melamine on closed units. All doors, drawers would be plastic laminate on both sides; on open units all interior to be plastic laminate.

.8 Edge banding, U.N.O: Matching ABS material finish to face plastic laminate in colour, pattern, and finish as per AWMAC Standard.

.9 Concealed Parts: backer matching specification to manufacturer's option.

2.4 CASEWORK AND CLOSET HARDWARE

.1 Hinges: fully concealed, all metal construction, 3 dimensional 6-way adjustment, soft-close built-in. 110 degree opening. Acceptable Product: Blumotion Clip top by Blum Furniture Fittings.

.2 Door and Drawer Pulls: Brush Nickel Finish, 128mm c/c, overall length 145 mm, overall width 14 mm, overall projection 27 mm. Acceptable Product: Richelieu BP7348128195.

.3 Drawer Slides: Concealed full extension, undermount slide, steel, soft-close, synchronized feather-light glide, tool-free side / height / tilt adjustment, built-in width and depth tolerance compensation. Dynamic carrying capacity to be 40kg in general, for drawers with height 300mm or more, dynamic carrying capacity to be 70kg. Acceptable Product: Movento with Blumotion S 760H / 766H series by Blum.

.4 Adjustable Shelf Standards and Supports: Adjustable Aluminum Shelf Standards and Supports, 17-gauge aluminum, 13mm on centers adjustment increments. Natural aluminum finish. Recess standards in gables. Acceptable Product: Richelieu Knape & Vogt #255 standards and #256 supports or equivalent.

.5 Compost Bin:

.1 Location: for CC (Compost cabinet) in Lunch Room

.1 Product: Polymer Waste Bin, total capacity: 35 Litre, product dimensions to be 238mm W x 476mm D x 454mm H; color to be silver gray. Acceptable product: Richelieu Bins for Practico System, product # 56030100, or equivalent.

.2 Location: for CC (Compost Cabinet) in Pantry 1

.1 Product: Plastic Waste Bin, total capacity: 49 Litre, product dimensions to be 279mm (11") W x 356mm (14") D x 581mm (22-7/8") H; color to be grey. Acceptable product: Richelieu K-Waste Bin #51052100, or equivalent.

.6 Narrow Cabinets Drawer Slides: Runner system for narrow cabinets with soft-close mechanism. Dynamic carrying capacity of 20kg per base cabinet. Acceptable Product: Movento Space Twin with Blumotion S 760H / 766H by Blum.

.7 Finish to all cabinet hardware-Satin chrome finish unless otherwise specified.

.8 Provide colour-coordinated plastic screw caps on ctsk screws.

.9 All millwork hardware as required to complete work.

2.5 COUNTERTOPS FOR CASEWORK & INTEGRAL BACK/SIDE SPLASHES:

.1 Solid Surface on core materials.

.2 Core Materials: 19mm minimum non-telegraphing plywood at countertops with sink or other plumbing cut-outs. 25mm thick for longer span as per AWMAC requirement.

.3 Full height integral back/side splashes to underside of upper cabinet full length of countertop for countertops, also refer to drawings.

.4 Caulking at all edges.

2.6 SOLID SURFACE (SSF)

.1 Material: Solid Quartz

.1 Consist of natural quartz particles, reacted monomers and resins, pigments and various performance-enhancing additives manufactured as slabs. Materials are to be solid, non-porous and homogeneous and exhibit strength, hardness and durability.

.2 Thickness: 13 mm UNO.

.3 Edge treatment: Top ¼" Roundover, U.N.O.

.4 Sheet Size: Maximum size with minimal joint required for each application.

.5 Acceptable manufacturer, product and color:

.1 SSF: Corian Quartz Cloud White

.6 Accessories:

.1 Silicone Sealant: Mildew-resistant, FDA-compliant sealant recommended by manufacturer, in colour to match solid surface.

.2 All other accessories as recommended by solid surface manufacturer.

.3 Ultra-Bond G Adhesive: Pre-measured and pre-tinted two-part adhesive colored to match surfacing.

.4 Backsplash and Sidesplash: Integral Coved (2-piece not acceptable).

2.7 WALL PANELING

.1 AWMAC Quality Grade – Premium

.2 13 mm medite 2, wall paneling, as shown on drawings.

.3 Maple Wood Veneer, flat cut slip match, vertical grain direction to match existing paneling.

2.8 GLAZED WALL

.1 AWMAC Quality Grade – Premium

.2 Medite 2 wood framing, thickness as shown on drawings.

.3 All wood framing to be solid maple or maple wood veneer, flat cut slip match, vertical grain direction to match existing.

.4 Location: Service Counter Booth

2.9 FABRICATION

.1 Fabricate material in accordance with manufacturer's written recommendations for fabrication. Comply with AWMAC's standards.

.2 Fabricate countertops, sinks, and splash of 19mm thick material unless otherwise indicated.

.3 Cut and finish component edges with clean, sharp returns, U.N.O. Finished edges shall have a 1.6 mm radius.

.4 Cutouts for sinks shall be smooth and uniform without saw marks. The top and bottom of openings shall be finished smooth. Maintain minimum 6 mm radius for sink cutouts.

.5 Cutouts for accessories shall be smooth and uniform without saw marks. The top and bottom of openings shall be finished smooth.

.6 Set nails and countersink screws apply stained wood filler to indentations, sand smooth and leave ready to receive finish.

.7 Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.

.8 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.

.9 Provide sufficient clearance between backsplash and faucet for operation of lever handle.

.10 Ensure adjacent parts of continuous laminate work match in colour and pattern.

.11 Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 3050mm. Keep joints 600 mm from sink cutouts.

.12 Shop-install cabinet hardware for doors, shelves and drawers. Use friction catches to provide some seismic restraint.

.13 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.

.14 Shop-finish cabinet work ready for installation. Limit on-site finishing to touch-up and to site-fabricated/fitted items where shop-finishing is impractical.

.15 For solid surface, shop assembly:

.1 Fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and manufacturer’s printed instructions and technical bulletins.

.2 Form joints between components using manufacturer’s standard joint adhesive without conspicuous joints.

.3 Rout and finish component edges with clean, sharp returns and smooth edges.

3.0 EXECUTION

3.1 EXAMINATION

.1 Inspect site conditions where millwork is to be installed. Report any defects in the work of other Sections that may affect the installation of millwork to the Consultant.

3.2 PREPARATION

.1 Condition woodwork to average prevailing humidity conditions in installation areas before installing.

.2 Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including back priming and removal of packing.

3.3. INSTALLATION

.1 Quality Standard: Install woodwork to comply with AWMAC's standards for type of woodwork involved.

.2 Install woodwork plumb, level, true, and straight with no distortions. Shim as required with concealed shims. Install to a tolerance of 3mm in 2400mm for plumb and level (including tops).

.3 Fasten and anchor millwork securely. Provide heavy duty fixture attachments for wall mounted cabinets. Anchor free standing units to floor.

.4 Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork and matching final finish where transparent finish is indicated.

.5 Cabinets - general: Install without distortion so that doors and drawers fit openings properly and are accurately aligned. Adjust hardware to centre doors and drawers in openings and to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated.

.6 Shelving, adjustable: 25mm wide heavy-duty support brackets to be fastened to studs. In the absence of studs, a toggle bolt (3/16"-24, e.g. Shan Toggle) may be used. Shelf brackets to have 3 tang attachment system. End-capped shelf book brackets are to be installed (Rollit Style). All shelves must be secured to the brackets.

.7 Tops: Anchor securely to base units and other support systems as indicated. Caulk space between back-splash and wall with specified sealant.

.8 Install countertops with no more than 1/8 inch in 96-inch (3mm in 2400mm) sag, bow, or other variation from a straight line. Use draw bolts in countertop joints.

.9 Secure back-splashes to tops with concealed metal brackets at 16 inches (400 mm) O.C.

.10 Scribe and cut as required to fit abutting walls and to fit properly into recesses and to accommodate piping, columns, fixtures, outlets or other projecting, intersecting or penetrating objects.

.11 Fit hardware accurately and securely in accordance with manufacturer's written instructions.

.12 For solid surface:

- .1 Provide product in the largest pieces available.
- .2 Form field joints using manufacturer's recommended adhesive, with joints inconspicuous in finished work. Exposed joints/seams shall not be allowed.
- .3 Reinforce field joints with solid surface strips extending a minimum of 25mm on either side of the seam with the strip being the same thickness as the top.
- .4 Cut and finish component edges with clean, sharp returns.
- .5 Anchor securely to base cabinets or other supports.
- .6 Align adjacent countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop.
- .7 Carefully dress joints smooth, remove surface scratches and clean entire surface.
- .8 Attach solid surfaces material to leveled supports on frame with dabs of silicone every 460 to 610mm.

3.4 ADJUSTING AND CLEANING

.1 As installation progresses and upon completion clean up debris, packaging and leftover materials.

.2 Repair damaged and defective woodwork where possible to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

.3 Clean millwork and cabinet work, inside cupboards and drawers and outside surfaces.

.4 Clean, lubricate, and adjust hardware.

.5 Touch up shop-applied finishes to restore damaged or soiled areas.

3.5 PROTECTIONS

.1 Provide appropriate protection to millwork until building is accepted for use by owner.

.2 In the event of damage, all repairs and replacements necessary shall be made immediately to the approval of the Consultant at no extra cost.

.3 Provide final protection and maintain conditions in a manner acceptable to fabricator and Installer that ensures that woodwork is without damage or deterioration at the time of Substantial Performance.

END OF SECTION 06 40 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 SECTION INCLUDES

.1 Insulation and moisture protection as indicated on the drawings and specified herein.

1.3 RELATED SECTIONS

.1	Supports for Plaster & Gypsum Board	Section 09 22 00
.2	Gypsum Board	Section 09 29 00

1.4 PRODUCT DELIVERY, STORAGE & HANDLING

.1 Materials shall be stored in a dry and protected area, off the ground, in original undamaged, sealed container with manufacturer's labels and seals in tact. Avoid freezing.

1.5 PROJECT CONDITIONS

.1 Review manufacturer's recommendations for ambient temperatures during and after application.

.2 Report to general contractor in writing, defects of work prepared by other trades and unsatisfactory site or environmental conditions.

.3 Examine surfaces to ensure they are dry, clean, free of oil, grease, dirt, paint, mull scale or other deleterious material that would impair bonding.

.4 Commencement of work shall imply acceptance of surfaces and conditions.

2.0 PRODUCTS

.1 Acoustic and Fire Rated Wall Assembly Batt: Rock Wool Insulation. Acceptable product: Rockwool AFB (Acoustical Fire Batt).

3.0 EXECUTION

3.1 INSPECTION

.1 Ensure that surfaces to receive insulation are clean and free of obstructions.

3.2 WORKMANSHIP

.1 Install batt insulation to all other areas indicated on drawings to thickness shown.

.2 Fit closely around electrical boxes, pipes, ducts, frames, joists, and other objects in or passing through insulation.

3.3 INSTALLATION

.1 Acoustic and Fire Batt insulation installation

- .1 Install batt insulation for acoustic separations so as to press on drywall over entire surface area.
- .2 Cut and trim insulation neatly, to fit spaces. Use batts free of ripped backs and/or edges. Butt edges and ends tightly.

3.4 ADJUSTING AND CLEANING

.1 Remove waste and excess material off site at completion of application. Repair and make good any defects to this application or any defects caused by this application.

END OF SECTION 07 21 16

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 SECTION INCLUDES

.1 Provide all labour, material, services and equipment necessary for supply and installation of firestopping and smoke seals for all new and existing piping penetrations at floor and ceiling slab within the project area.

.2 Firestopping materials and/or systems intended to act as a firestop and smoke seal within fire resistive wall for any through penetrating items, poke through termination devices and electrical outlet boxes.

.3 Seals forming draft tight barriers to retard the passage of smoke, flame and hose stream.

1.3 RELATED SECTIONS

.1	Rough Carpentry	Section 06 10 00
.2	Supports for Plaster & Gypsum Board	Section 09 22 00
.3	Gypsum Board	Section 09 29 00
.4	Mechanical General Requirements	Section 21 00 01
.5	Electrical General Requirements	Section 26 05 01

1.4 REFERENCES

.1 Test Requirements: ULC-S115-M or CAN4-S115-M, “Standard Method of Fire Tests of Through Penetration Fire Stops.”

.2 Underwriters Laboratories of Canada (ULC) of Scarborough runs CAN4-S115-M under their designation of ULC-S115-M and publishes the results in their “Fire Resistance Ratings Directory” that is updated annually.

.3 Underwriters Laboratories (UL) of Northbrook, IL runs ASTM E-814 under their designation of UL 1479 and publishes the results in their “Fire Resistance Directory” that is updated annually. UL tests that meet the requirements of ULC-S115-M are given a cUL listing and are published by UL in their “Products Certified for Canada (cUL) Directory.”

.4 Test Requirements: UL 2079, “Tests for Resistance of Building Joint Systems” (July 1998.) This test requirement provides more guidelines for testing moving joints than that given in CAN4-S115-M. UL tests that meet the requirements of ULC-S115-M are given a cUL listing and are published by UL in their “Products Certified for Canada (cUL) Directory.

.5 International Firestop Council Guidelines for Evaluating Firestop Systems Engineering Judgements.

.6 CAN/ULC-S102-M, Standard Test Method for Surface Burning Characteristics of Building Materials.

.7 BC Building Code 2024.

.8 NFPA 101 – Life Safety Code.

.9 Canadian Electrical Code.

1.5 SUBMITTALS

.1 Submit shop drawings and product data in accordance with Section 01300.

.2 Shop Drawings:

.1 Submit shop drawings to show proposed material, reinforcement, anchorage, fastenings and method of installation. Construction details should accurately reflect actual job conditions.

.2 Submit manufacturer's specifications and installation instructions for each type of material required. Include data substantiating that the materials comply with specified requirements. Include composition and limitations, documentation of ULC or cUL firestop systems.

1.6 QUALITY CONTROL

1. Manufacturer: Company specializing in manufacturing products of this section with a minimum of three (3) years proven experience.

2. Applicator: Approved, licensed and supervised by the manufacturer of Firestopping Materials with a minimum of three (3) years proven experience.

3. Product: Manufactured under a Underwriter’s follow-up program and bearing listing label.

4. Pre-Installation Conference: Convene a meeting between related sections following award of contract to discuss Firestopping requirements. Ensure that other sections are aware of the maximum and minimum clearance requirements to the penetration stipulated by the Underwriter’s design listing.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver materials undamaged in manufacturer’s clearly labeled, unopened containers, identified with brand, type, and ULC or cUL label where applicable.

.2 Coordinate delivery of materials with scheduled installation date to allow minimum storage time at job-site.

.3 Store materials under cover and protect from weather and damage in compliance with manufacturer’s requirements.

.4 Comply with recommended procedures, precautions or remedies described in material safety data sheets as applicable.

.5 Do not use damaged or expired materials.

1.8 PROJECT CONDITIONS

.1 Do not use materials that contain flammable solvents.

.2 Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

.3 Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.

.4 Weather conditions: Do not proceed with installation of firestop materials when temperatures exceed the manufacturer's recommended limitations for installation printed on product label and product data sheet.

.5 During installation, provide masking and drop cloths to prevent firestopping materials from dropping.

2.0 PRODUCTS

2.1 MATERIALS

.1 Firestopping, general

.1 Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.

.2 Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire-resistance-rated systems.

.3 Firestopping Materials are either "cast-in-place" (integral with concrete placement) or "post installed." Provide cast-in-place firestop devices prior to concrete placement.

.2 Fire stopping and smoke seal systems:

.1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of CAN4-S115 and not to exceed opening sizes for which they are intended.

.2 Firestop system rating: As indicated on drawings.

.3 Service Penetration Assemblies: Certified by ULC in accordance with CAN4-S115 and listed in ULC Guide No. 40 U19.

.4 Service Penetration Firestop Components: Certified by ULC in accordance with CAN4-S115 and listed in ULC Guide No. 40 U19.13 and ULC Guide No. 40 U19.15 under the Label Service of ULC.

.5 Fire-resistance rating of installed firestopping assembly not less than the fire-resistance rating of surrounding floor and wall assembly.

.6 Firestopping and smoke seals at openings intended for ease of re-entry such as cables: Elastomeric seals; do not use cementitious or rigid seal at such locations.

.7 Firestopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: Elastomeric seal; do not use a cementitious or rigid seal at such locations.

.8 Primers: To the manufacturer's recommendation for specific material, substrate and end use.

.9 Water (if applicable): Potable, clean and free from injurious amounts of deleterious substances.

.10 Damming and Backup Materials, Supports and Anchoring Devices: To the manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.

3.0 EXECUTION

3.1 PREPARATION

.1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials. Ensure that substrates and surfaces are clean, dry and frost free.

.2 Prepare surfaces in contact with firestopping materials and smoke seals to the manufacturer's instructions.

.3 Maintain insulation around pipes and ducts penetrating fire separation.

.4 Mask where necessary to avoid spillage and overcoating onto adjoining surfaces; remove stains on adjacent surfaces.

3.2 INSTALLATION

.1 Install firestopping and smoke seal material and components in accordance with ULC / cUL certification and the manufacturer's instructions.

.2 Seal holes or voids made through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.

.3 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.

.4 Tool or trowel exposed surfaces to a neat finish.

3.3 FIELD QUALITY CONTROL

1. Notify the Consultant when ready for inspection and prior to concealing or enclosing Firestopping Materials and service penetration assemblies.

2. Tag service penetrations and every 3.0 meters of joint seal with printed tags indicating name and phone number of subcontractor and the following statement: “CAUTION! FIRESTOP: DO NOT RE-ENTER, PUNCTURE OR DESTORY UNLESS PREPARED TO RE-SEAL IMMEDIATELY WITH PROPER, APPROVED METHOD!”

3. Allow for six (6) firestops to be disassembled in the presence of the Consultant. Should any of these firestops prove inadequate, the Consultant will order the inspection of additional firestops. Following inspections, reinstate the firestops.

3.4 INSPECTION

.1 Notify the Consultant when ready for inspection and prior to concealing or enclosing firestopping materials and service penetration assemblies.

3.5 SCHEDULE

.1 Firestop and smoke seal at:

- .1 Intersection of floor slab and fire-resistance rated gypsum board partitions.
- .2 Around mechanical and electrical assemblies penetrating floor slabs and fire separations.
- .3 Rigid Ducts: Greater than 129 cm^2; firestopping to consist of bead of firestopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separation.

3.6 ADJUSTING AND CLEANING

.1 Remove excess materials and debris and clean adjacent surfaces immediately after application.

.2 Remove temporary dams after initial set of firestopping and smoke seal materials.

END OF SECTION 07 84 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and co-ordinated with all other parts.

1.2 SECTION INCLUDES

.1 Interior sealants, joint back-up and joint preparation.

1.3 RELATED SECTIONS

.1	Finish Carpentry	Section 06 20 00
.2	Storefronts	Section 08 43 00
.3	Gypsum Board	Section 09 29 00
.4	Painting	Section 09 91 00

1.4 REFERENCES

.1 Canadian Building Digest CBD-96 Use of Sealants published by National Research Council Canada

1.5 SUBMITTALS

.1 Submit product data sheets and samples of each type of material and colour at job site during application.

.2 Cure samples under conditions anticipated at job site during application.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver materials to the job site in their original unopened containers with all labels intact.

.2 Cure samples under conditions anticipated at job site during application.

1.7 ENVIRONMENTAL REQUIREMENTS

.1 Apply sealants only to completely dry surfaces and at air temperatures above minimum established by manufacturer's specifications.

1.8 SUSTAINABILITY

.1 All adhesives and sealants used on the interior of the building (inboard side of the plane of weatherproofing system) must comply with the South Coast Air Quality Management District (SCAQMD) Rule #1168, January 7, 2005.

1.9 WARRANTY

.1 Provide a written warranty stating that caulking work of this Section is guaranteed against leakage, cracking, crumbling, melting, shrinkage, running, loss of adhesion and/or staining adjacent surfaces for a period of three (3) years from the date of Certificate of Substantial Performance.

2.0 PRODUCTS

2.1 MATERIALS

.1 Primers: Type recommended by sealant manufacturer.

.2 Sealants acceptable for use on this project must be listed on the Qualified Products List issued by the CGSB Qualification Board for Joint Sealants.

.3 Joint Fillers:
- .1 General: Compatible with primers and sealant, outsized 30 to 50%.
- .2 Either polyethylene, extruded closed cell foam or foam butyl rods: Sofrod by Tremco or Ethafoam SB by Dow Chemical. Backer Rod by Sternson Limited.
- .3 Polyolefin Foam: Sof - Rod by Tremco Ltd. or open cell polyurethane Ohio by Tremco Ltd. Approved alternative is PRC Open Cell Polyurethane Backer Rod.

.4 Bond Breaker: Pressure sensitive plastic tape, which will not bond to sealants for specific sealant selected.

.5 Colours: Black in general, except clear for all floors, solid surface, millwork and wall finishes.

.6 Joint Cleaner: Non-corrosive type recommended by sealant manufacturer and compatible with joint forming materials.

.7 Sealant:
- .1 Standard: For interior work unless otherwise specified, ensure compatibility of sealants being used and other materials in contact with them, meet LEED® requirement VOC level of 250 g/L for architectural sealant, and conform to the latest editions of the specifications summarized below:
- .2 Sealant Types:

Type 1: Multi-component chemical cure sealants: unless otherwise specified conform to CAN/CGSB-2-19.24-M90 (TT-00227E-Type 11, Class A) standard, sealing compounds and as otherwise specified to exceed that standard; deliver to site and bear in addition to the product identification name, the qualification number when tested under CAN/CGSB standard, Type 1 (self-leveling - horizontal joints) Type 2 (non-sag - vertical joints), Class A for glazing standard, Class B for non-glazing standard.

Type 2: Acrylic sealant: (between GWB and masonry or concrete, interior window and door frames); conform to CGSB 19-GP-5M.

Type 3: Partition sealant: (For sealing acoustic partitions); acrylic sealant conforming to CGSB 19-GP-5M standard, for exposed to view sealing work; provide around electrical boxes, phone plugs, and other penetrations in partitions scheduled for acoustic separation.

3.0 EXECUTION

3.1 CONDITIONS OF SURFACES

.1 Verify at the site that joints and surfaces have been provided as specified under the work of other sections; and that joint conditions will not adversely affect execution, performance or quality of completed work; and that they can be put into acceptable condition by means of preparation specified in this section.

.2 Ascertain that sealers and coatings applied to substrates are compatible with sealant used and the full bond between sealant and substrate is attained. Request samples of the sealed or coated substrate from their fabricators for testing of compatibility and bond if necessary.

.3 Verify that specified environmental conditions are ensured before commencing work.

.4 Ensure that releasing agents, coatings, or other treatments have either not been applied to joint surfaces or that they are entirely removed.

.5 Defective work resulting from application to unsatisfactory joint conditions will be considered the responsibility of the sub-contractor performing the Work of this section.

3.2 PREPARATION

.1 Remove dust, paint, rust, oil, grease, frost and other foreign matter. Dry joint surfaces. Use joint cleaner where appropriate.

.2 Remove dust, silt, mill scale, and coatings from ferrous metals by wire brush, grinding or sandblasting.

.3 Install joint filler or apply bond breaker tape to achieve correct joint depth.

.4 Prepare concrete, masonry glazed and vitreous surfaces to sealant manufacturer's instructions.

.5 Examine joint sizes and correct to achieve depth ratio $^1/_2$ of joint width with minimum width and depth of 6 mm., maximum width 25 mm. Where joint configuration does not allow for proper depth/width ratio, a pressure sensitive bond breaker tape shall be placed at the back of the joint which will not bond to the sealant.

.6 Clean ferrous metal joint bonding surfaces to bare non oxidized metal and remove oil, grease and other contaminants with Xylol, methylethylketone or isopropylalcohol.

.7 Where required, prime sides of joint in accordance with manufacturer's direction immediately prior to caulking.

.8 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

.9 Apply bond breaker tape where required to manufacturer's instructions.

3.3 INSTALLATION

.1 The Consultant, the Contractor, the caulking contractor and the sealant manufacturer representative shall, at the Contractor's written notice, meet at the project site to review the material selection, joint preparations, installation procedures and co-ordination with other trades. If required, the Contractor shall perform sample installation on site in the presence of the above mentioned persons indicative of the types of joints detailed. These panels will form the basis of acceptable workmanship and refinement of installation details.

3.4 APPLICATION

.1 Apply sealants, primers, joint fillers to manufacturer's instructions. Apply sealant using a gun with proper size nozzle. Use sufficient pressure to fill voids and joints solid. Superficial pointing with skin bead is not acceptable.

.2 Form surface sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, and embedded impurities. Neatly tool to a slight concave joint.

.3 Acoustic sealant:

.1 Apply to junction walls designated as acoustical on each side and at electrical or mechanical openings or penetrations through wallboard in such walls and at edges of acoustic ceilings. Apply sealant at tops of partitions after final ceiling tile adjustments are complete.

.2 Seal joint between edge of wallboard, both layers on two layer application, and adjoining surfaces on both sides of sound rated partitions, prior to taping and filling, with bead of sealant, two beads at two layer application.

.3 Extrude a full 9.5 mm. diameter bead, two beads at two layer application, into each joint to effectively block airborne sound transmission.

.4 Apply acoustic sealant to junctions of metal fire stops.
.5 Sealants used within areas of return air plenums and fire-rated assemblies must meet ULC requirements.

.4 Apply sealant to joints between window or door frames to adjacent building components, around perimeter of every external opening, to control joints in masonry walls concrete slabs and where indicated.

3.5 ADJUSTING AND CLEANING

.1 Clean adjacent surfaces immediately and leave work clean and neat. Remove excess sealant and droppings using recommended cleaners as work progresses. Remove masking after tooling of joints.

END OF SECTION 07 92 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specification forms part of the Contract Documents and is to be read, interpreted and co-ordinated with all other parts.

1.2 SECTION INCLUDES

.1 Glazed storefront framing.

1.3 RELATED SECTIONS

.1	Rough Carpentry	Section 06 10 00
.2	Architectural Woodwork	Section 06 40 00
.3	Sealants and Caulking	Section 07 92 00
.4	Glazing	Section 08 80 00

1.4 REFERENCES

.1 CAN2-12.1-M76 - Glass, Safety, Tempered or Laminated.

.2 CAN2-12.1-M76 - Glass, Polished Plate or Float, Flat, Clear.

1.5 SUBMITTALS

.1 Provide a sample of section of glazing frame 300mm long, complete with glazing gaskets in actual material, colour and finish.

.2 Submit shop drawings for review in accordance with Section 01 33 00.

.3 Shop drawings shall be prepared and sealed by a professional engineer registered in the province of British Columbia to indicate that the assembly will withstand all design loads imposed upon it, and that connections to building structure will transfer all loads, reactions and forces to the structure. The said engineer shall submit Schedule S-B and S-C to the Architect-of-Record.

.4 Clearly detail profiles, construction, assembly, installation for all conditions, also flashing, caulking, sealing, provision for thermal movement, deflection and glazing, anchorage attachment to building structure, method of adjustment.

1.6 QUALITY ASSURANCE

.1 Storefronts, glass, glazing and sealants shall be fabricated and installed by companies and skilled workers having a minimum of five (5) years proven experience in the completion of this type of installation for a comparable project.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver, handle and store units in accordance with the manufacturer's directions.

.2 Store units at site on raised wood pallets protected from the elements and corrosive materials. Do not remove from crates or other protective covering until ready for installation.

.3 Store prefabricated frame assemblies blocked off the ground in an approved manner to prevent warping, twisting, undue strain on assembly or physical abuse and damage.

.4 Match mark all components for field assembly.

.5 Glass units must be stored with a positive bottom support at right angles to the plane of the glass.

1.8 WARRANTY

.1 Provide written warranty issued in the name of the Owner and signed jointly by the Contractor and installer stating that the storefront assembly is warranted to perform in accordance with design and performance requirements specified for a period of not less than five (5) years from date of Substantial Performance.

.2 Finish: Against non-uniform fading during warranty period to extent that adjacent members have a colour range greater than originally accepted colour range samples approved by the Consultant; pitting or other type of corrosion resulting from natural elements in local atmosphere; discolouration, staining or streaking of the surface.

2.0 PRODUCTS

2.1 MATERIALS

.1 General: All materials used in this contract shall be of the highest quality as manufactured by nationally recognized manufacturers and of the type indicated on the drawings and in these specifications.

.2 Steel Shapes: To CAN3-G40.21-M81, Grade 300W.

.3 Alumininum Members: Extruded from 6063-T54 Alloy free from defects impairing strength, appearance and durability.

.4 Fastenings: Stainless steel or other corrosion resistant material.

2.2 FRAMING SYSTEM

.1 Construct frames of aluminum extrusions with minimum wall thickness to meet specified performance requirements.

.2 Interior frame members 114.3 x 44.5 mm nominal size, for interior centre glazing.

.3 Interior storefront: Clear anodic finish: to designation AA- M12C22A41, capable for connection to Aluminum Guide Rail.

.4 Interior storefront frame to include continuous acoustic rubber gasket all 3 sides.

.5 Storefront Entrance Non-Thermally Broken Framing. Acceptable product: Kawneer Trifab VersaGlaze 450 frames Centre plane

2.3 FASTENERS

.1 In accordance with AAMA Guide Specification Manual to suit base metals in which they occur. Where exposed, colour coded to match surface in which they occur.

2.5 SEALANT

.1 Refer to Section 07 92 00.

2.6 GLAZING MATERIALS

.1 Interior Glazing Gaskets: Dense, EPDM Durometer 50 (Shore A) to ASTM C509, keyed into stops and frames.

.2 Glass Setting Blocks: Compatible with glass edge seals, with a durometer hardness of 80 of ASTM D2240.

2.7 FINISHES

.1 Clear Anodized Aluminum Finish to Aluminum Association AA-M12C22A31.

2.8 FABRICATION

.1 Fabricate members to shapes, sizes and configurations as shown on the drawings in accordance with reviewed shop drawings.

.2 All materials to be used shall be corrosion resistant, nonstaining, non-bleeding and compatible with adjoining material.

.3 Fabricate all parts and assemblies to AAMA standards for aluminum framing.

.4 Fabricate units in shop in accordance with the manufacturer's assembly details and reviewed shop drawings. Build square, true, accurate to size, free from defects detrimental to appearance and performance.

.5 Machine all joints, corners, mitres, accurately to hairline joints. Provide interior reinforcing at connections of hollow assemblies to structural supports. Mechanical fasteners shall be hidden in completed installation. Join corners with metal corners sleeves and/or mitre and weld continuously along entire length of contact.

.6 Fabricate units in largest practical size for handling, transport and installation. Trial assemble all large units in shop and match-mark for field assembly.

.7 Build in expansion joints and deflection channels as required.

.8 Reinforce vertical and horizontal sections as required to ensure adequate strength to meet performance requirements and support dead load of system.

.9 Provide, install all alignment bars, brackets, clips, tees, inserts, splice plates, fastenings, anchors, etc., for fabrication and assembly. Ship loose those items required for field installation.

.10 Provide all caps, closures, trim, flashings as required to complete field installations.

2.9 ATTACHMENTS

.1 Door Sweep: Standard components as suplied by manufacturer.

.2 Weather stripping: Standard components as supplied by manufacturer.

.3 Pull Bars for each door leaf at suite entrance door.

3.0 EXECUTION

3.1 INSPECTION

.1 Inspect the work of other sections upon which the work of this section depends. Proceed only after deficiencies, if any, in the work of other sections have been corrected.

.2 Ensure that all anchor and setting or installing assemblies or components supplied by the trade for installation by others are properly located and correctly set in place.

3.2 PREPARATION

.1 Obtain all dimensions affecting the work of this section from the job site.

.2 Provide data, dimensions and components, anchors and assemblies to be installed by others in proper time for installation

3.3 ERECTION

.1 Erect and secure assemblies aligned plumb and square, free from warp, twist or superimposed loads, installed to achieve weathertight installation with air/thermal barrier seal to full system.

.2 Erect in strict accordance with the manufacturer's written instructions and reviewed shop drawings.

.3 All anchors and fitments shall be concealed. Exposed heads of fasteners not permitted unless specified otherwise. All joints in exposed work shall be flush hairline butt joints.

.4 Use anchors that will permit sufficient adjustment for accurate alignment.

.5 Build-in and provide any supplementary reinforcing and bracing required for assembly loads and deflections.

.6 Build in anchors and other items provided by other trades for incorporation into window system.

.7 Secure work adequately to structure in a manner not restricting thermal and wind movement. Touch-up any damaged finish.

.8 Correctly locate and install flashings, deflectors and weep holes to ensure proper drainage of moisture to exterior.

.9 Isolate aluminum surfaces from adjacent dissimilar materials and metals with coating of bituminous paint.

.10 Ensure that all stops, gaskets, splines, seals, etc., are perfectly aligned and ready to receive glazing as specified herein.

3.4 ADJUSTING AND CLEANING

.1 At completion of work of this section and continuously as work proceeds, remove all surplus materials, debris and scrap.

.2 At completion of work, remove all protective surface covering film and wrappings. Clean all glass panels, frames using mild soap or other cleaning agent approved by the aluminum storefront manufacturer.

.3 Remove all excess glazing or joint sealing materials from exposed surfaces. Clean and polish glass.

.4 Adjust hardware for proper function.

END OF SECTION 08 43 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and co-ordinated with all other parts.

1.2 SECTION INCLUDES

.1 Glazing as shown on the drawings and as specified herein.

1.3 RELATED SECTIONS

.1	Sealants and Caulking	Section 07 92 00
.2	Storefronts	Section 08 43 00

1.4 REFERENCES

.1 British Columbia Building Code (BCBC) 2024.

.2 Sealant insulating glass units to conform to the Insulating Glass Manufacturers' Association of Canada (IGMAC) standards.

.3 Canadian General Standards Board (CGSB)

- .1 CAN/CGSB-12.1 – Tempered or Laminated Safety Glass.
- .2 CAN/CGSB-12.2 – Flat, Clear Sheet Glass
- .3 CAN/CGSB-12.3 – Flat, Clear Float Glass.
- .4 CAN/CGSB-12.8 – Insulating Glass Units.
- .5 CAN/CGSB-12.9 – Spandrel Glass.
- .6 CAN/CGSB-12.11 – Wired Safety Glass.

1.5 SUBMITTALS

.1 Submit samples and shop drawings in accordance with Section 01 33 00.

.2 Submit 300 x 300 mm samples as requested by the Consultant.

.3 Submit maintenance and cleaning instructions for incorporation into maintenance manuals.

1.6 SOURCE QUALITY CONTROL

.1 The work of this section shall be installed, glazed and adjusted by experienced workmen in accordance with manufacturer's directions.

.2 All glass shall be installed in a perfectly true, plumb and accurate location.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver, handle and store glass by methods approved by manufacturer. Stack all glass vertically to prevent cracking. Do not remove from protective cases or other protective covering until ready for installation.

1.8 WARRANTY

.1 Provide manufacturer's warranty in writing for insulating glass units against failure of seal of enclosed air space and deposits on inner faces of glass detrimental to vision for a period of 2 years from date of substantial performance of work.

2.0 PRODUCTS

2.1 GLASS MATERIAL

.1 Indicated or to industry standards for size of opening, local wind loading and use, but shall not be less than 6 mm thick, tempered.

.2 Safety glasses: To CAN/CGSB-12.1.

.1 Tempered: Free of tong marks in final position.

2.2 GLAZING AND SEALING COMPOUND MATERIALS

.1 Sealant Compounds:

.1 Concealed within framing: CGSB 19-GP-5M acrylic terpolymer in accordance with Section 07 92 00.

.2 Exposed to view: CAN2-19.24 expoxidized polyurethane terpolymer in accordance with Section 07 92 00.

.2 Glazing tape: Preformed macro-polyisobutylene tape with continuous integral neoprene shim, paper release, black colour, width x thickness recommended by manufacturer to suit installation.

.3 Setting blocks: Neoprene, Shore “A” durometer hardness 79-90, 100 mm long x 6 mm high x widths to suit glass and insulating glass units.

.4 Glazing splines/wedges: Purpose-made extruded neoprene profiles designed to engage aluminum extrusions and form integral part of respective framing system.

.5 Gaskets: Purpose-made extruded hollow compressible EPDM or neoprene profiles designed to engage aluminum extrusions and form integral part of framing system.

.6 Primers, sealers and cleaners: To glass manufacturer’s standard.

3.0 EXECUTION

3.1 INSPECTION

.1 Examine the drawings and the site to ascertain fabrication and installation procedures so that the work may be carried out with a minimum of job site cutting and fitting. Supplement all drawing information with actual job site dimensions.

3.2 INSTALLATION

.1 All glass shall be cushioned and rattle free. Draw marks shall be installed horizontally unless prohibited by the size of the sheet.

.2 Install all glass on glazing blocks with spacer blocks, of sizes required to ensure shim spaces as recommended by the glass manufacturer with adequate space for glazing compounds and sealants.

.3 Fill gap between glass and applied stop with sealant to depth equal to bite of frame on glass but not more than 10 mm below sightline.

.4 Apply sealant to uniform and level line, flush with sightline and tooled or wiped with solvent to smooth appearance.

END OF SECTION 08 80 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 SECTION INCLUDES

.1 Supply and installation of interior steel studs and furring.

.2 Seismic restraints for suspended ceiling framing.

1.3 RELATED SECTIONS

.1	Rough Carpentry	Section 06 10 00
.2	Finish Carpentry	Section 06 20 00
.3	Sealants and Caulking	Section 07 92 00
.4	Gypsum Board	Section 09 29 00

1.4 REFERENCES

.1 CAN/CGSB-7.1-M86, "Cold Formed Steel Framing Components".

.2 ASTM A446/A446M-85, "Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Physical (Structural) Quality".

.3 ASTM A525-86, "Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process".

.4 Association of Wall and Ceiling Contractors of B.C. (AWCC), "Specification Standards Manual", 1993 Edition.

1.5 DESIGN CRITERIA

.1 Design steel studs without relying on sheathing to resist torsion and weak axis buckling.

.2 Design steel stud deflection head to allow for deflection of building structure. The building structure is designed with a maximum deflection of 1/360.

1.6 QUALITY ASSURANCE

.1 Steel stud and furring work shall be in accordance with Association of Wall and Ceiling Contractors of B.C. (AWCC), "Specification Standards Manual", Section 9.7, Interior Steel Studs and Furring, Section 9.8 Exterior Steel Stud Wall System and Section 9.10, Gypsum Shaft Wall Systems and performed by a qualified specialist firm employing skilled mechanics to British Columbia Building Code.

.2 Design suspended bulkhead framing, horizontal duct enclosures and wall framing for wall supported equipment (e.g. wall hung, cupboards, wall hung dryers, fire hose cabinets, electrical, telephone, cable panels, video monitors, etc.) to accommodate dead loads as well as seismic loading.

.3 Provide seismic restraints for all suspended ceiling framing.

.4 All interior steel stud walls shall be engineered by a Professional Engineer, according to specified design criteria. Provide signed and sealed shop drawings by the Engineer.

.5 Said engineers shall review installation of all such components and issue letters of assurance Schedule S-B, and S-C, stating that the components have installed in accordance with design and B.C.B.C. 2024 requirements.

.6 The cost of engineering shall be included in the cost of the Work.

.7 Weld in accordance with CSA W59-M1989 for steel using qualified welders certified in accordance with CSA W47.1-1983 and CSA W55.3-1965.

1.7 PRODUCT DELIVERY, STORAGE & HANDLING

.1 Store packaged material in original containers with manufacturer's seals and labels intact.

.2 Prevent damage to materials during handling and storage. Keep materials under cover and free from dampness.

1.8 SITE CONDITIONS

.1 Start no work until conditions are satisfactory. Commencement of work shall imply acceptance of conditions.

1.9 SEQUENCING & SCHEDULING

.1 Co-ordinate installation sequence of steel studs partitions and furring with the other work and materials and/or services being installed within the partitions and metal furring.

.2 Coordinate steel stud and furring work with other work on which it is in any way dependent. Ensure correct positioning and installation of other work with which steel stud partitions have to align and upon which subsequent work is dependent.

2.0 PRODUCTS

2.1 MATERIALS

.1 Steel Studs & Steel Stud Furring:

.1 Conform to CAN/CGSB-7.1-M86, non-loadbearing; C-shape, hot dipped galvanized steel studs with Z180 (G60) zinc coating to ASTM A525-86, roll formed from ASTM A446/A446M-85, Grade A steel.
Studs to have knurled face and pre-punched pass-through holes for horizontal runs of wiring and piping. Length to suit, no splicing allowed.

.2 Flange: Depth not less than 32mm, edges bent back 90 deg. and edges hemmed 5mm minimum.

.3 Widths: As scheduled and indicated.

.4 Gauges: Interior steel stud to be a minimum of 0.88mm (20 gauge). Interior door jamb studs: 0.88 mm (20 gauge), two (2) studs each side of opening. Increase gauge of steel studs at over-height locations to suit stud manufacturer's design tables, in order to maintain overall partition dimension as detailed in wall schedule and in accordance with the BC Building Code. Exterior steel stud to be minimum1.23 mm (18 gauge).

.5 Colour code steel studs for gauge in accordance with AWCC colour code chart.

.2 Stud Tracks:

.1 Top and bottom runner tracks fabricated from same materials as studs; leg design min. 32mm high, slightly bent in to hold studs; widths to equal stud width.

.2 Use extended leg top track to partitions as required for deflection.

.3 Stud Fasteners: Manufacturer's standard, suitable for intended application.

.4 Shaft Wall Framing Supports: Stud and track metal components fabricated from hot-dipped zinc coated steel meeting ASTM A446/A446M-85, Grade A to conform to ASTM C645-83. Zinc coating shall be Z180 (G60) to ASTM A525-86. Steel I-studs, J-tracks, T-

splines, L-runners, fasteners shall be of design and gauge as used within appropriate shaft wall system tested under design numbers indicated in wall schedule.

.5 Furring Channels: Hat section; roll formed from 0.53mm hot dipped galvanized steel having a Z180 (G60) coating to ASTM A525-86, dimensions 68.2 mm or 66.7mm overall width, face width 35 mm by 22.2mm deep, face knurled.

.6 "Z-bar" Furring: Roll formed from 0.46mm (26 ga.) hot dipped galvanized steel having a Z180 (G60) coating to ASTM A525-86, 32mm face dimension x depth to suit rigid insulation thickness, see drawings and wall schedule.

.7 Gypsum Board Ceiling Framing: Conform to Section 9.7 , Part 2, Item 4 of the A.W.C.C. Standards which are minimum and as otherwise described below to exceed that minimum.

.1 Tie Wire: 1.62mm (16 ga.) galvanized steel tie wire.

.2 Hangers: 3.6mm (9 ga.) diameter galvanized soft annealed steel wire, or 4.8mm diameter zinc coated or cadmium plated steel rods. Ceiling area supported:

Area	Size of Hangers
Up to 1.15m^2	3.6 mm (9 ga.) diameter galvanized wire.
Up to 1.48 m^2	4.8mm diameter rods

.3 Inserts: Able to develop full strength of supported hangers.

.4 Main Carrying Channels: Cold formed steel channels of dimension and weight as follows and protected with rust inhibitive coating. Main carrying channels shall not be less than 38mm x 12.7mm x 1.37mm cold formed channels.

Maximum Spacing of Hangers	Maximum Spacing of Main Runners
900mm	1200mm
1000mm	1000mm
1200mm	900mm

.5 Cross Furring/Ceilings: Cross furring members shall be hat-shaped furring channels as specified in Clause 2.5, above. Max. spacing between furring channels shall conform to the following requirements, based on gypsum board thicknesses and layers.

.8 Metal Backing Plates: Flat sheet from 0.91mm (20 ga.) thick galvanized steel of same type as are the studs as blocking to support work of other sections.

Gypsum Board Thickness	Maximum Furring Spacing
Single 12.7mm board	400 mm
Single 15.9mm board	600 mm
Double layer	400 mm

3.0 EXECUTION

3.1 STEEL STUDS - ERECTION

.1 Steel stud wall types are designated on the Drawings in accordance with wall types listed in Wall Construction Schedule conforming at least to Section 9.9, Part 3, Items 1 and 2 of the A.W.C.C. Standards.

.1 Fire Resistance Rated Walls: Comply with requirements of testing agency approved by the Consultant for wall systems detailed on Drawings.

.2 Install stud tracks at floor and ceiling, accurately align according to partition layout, secure at centres at max. 600mm o.c. or spacing as shown on wall schedule, whichever is less, using recommended fasteners in accordance with steel stud manufacturer's design load tables (table 9.8) for stud gauges required.

.3 Place studs vertically at centers as detailed in wall schedule and not more than 50 mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions and code requirements. Stud height and spacing limitations shall be in accordance with stud manufacturer's recommendations.

.4 Erect metal studding to tolerance of 1:1000.

.5 Attach studs to bottom and ceiling tracks using screws, subject to the requirement in 3.1.13.

.6 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.

.7 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections.

.8 Provide two studs extending from floor to ceiling at each side of openings wider than stud centres specified. Secure studs together, 50 mm apart using column clips or other approved means of fastening placed alongside frame anchor clips with any additional framing members/bracing incorporated around perimeter to adequately resist loads.

.9 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.

.10 Provide and install backing and/or reinforcing within steel stud partitions for items being hung from or anchored to such partitions or furring.

.11 Install steel studs or furring channel between studs for attaching electrical and other boxes.

.12 Extend partitions to full height to underside of structure except where noted otherwise on drawings.

.13 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use special track with extended sides where ceiling track is to be anchored to underside of structure to allow for deflection. Cut studs shorter than partition height.

.14 Install continuous track sealant tape to isolate studs from uninsulated surfaces and to seal perimeter of exterior walls.

.15 Install continuous acoustical separation tape behind studs and tracks around perimeter of sound control partitions.

.16 Provide clearances and isolation felt to ensure no contact between steel stud system and adjacent metal components to eliminate electrolytic action.

3.2 CHASE WALLS

.1 Construct chase walls where indicated, consisting of two parallel steel stud partitions as detailed in wall schedule. Comply with requirements specified for steel stud erection.

.2 Provide cross bracing consisting of 12.7 mm gypsum wallboard 300 mm deep, at quarter points, on each pair of studs. Attach cross bracing to studs with 3 drywall screws.

.3 Co-ordinate construction of chase walls to suit installation of services.

3.3 SHAFT WALL ERECTION

.1 At shaft wall partitions, use the methods of assembly as used in the fire test specimen to maintain fire and sound ratings. Coordinate with Section 09 29 00, Gypsum Board.

.2 Coordinate construction of shaft walls to suit installation of services.

3.4 CEILING & SOFFIT SUSPENSIONS

.1 Hangers:

.1 Ensure hangers for suspended gypsum board ceilings support independent of walls, columns, pipes, ducts, and are erected plumb and securely anchored to structural frame or imbedded in concrete slabs. Do not use powder actuated fasteners/anchors.
.2 Space hangers at 1200mm maximum centers along runner channels and not more than 150mm from boundary walls, interruptions of continuity and change in direction.
.3 Provide at least 25mm clearance at walls.

.2 Runner Channels:
.1 Space channels at max. 900mm centers and not more than 150mm from boundary walls, interruptions of continuity and change in direction. Provide clearance of at least 25mm at walls.
.2 Run the channels transversely to structural framing members.
.3 Where splices are necessary, lap members at least 200mm and wire each end with 2 loops. Avoid clustering or lining up splices.
.4 Attach to rod hangers by bending hanger sharply under bottom flange of runner and securely wire in place with a saddle tie.

.3 Cross Furring:
.1 Erect furring channels transversely across runner channels, or other supports.
.2 Space furring channels at 400mm centers and not more than 150mm from boundary walls, openings, interruptions in ceiling continuity and change in direction. Provide a clearance of at least 25mm at walls.
.3 Secure furring channels to each support with clips or double 1.22 mm (18 ga.) dia. wire ties. Splice joints by nesting and tying channels together.
.4 Level furring channels to a maximum tolerance of 1:1000.

.4 At openings, including ceiling access panels, in ceiling suspension system that interrupts the main carrying channels of furring channels, reinforce grillage with 19 mm cold rolled channels, wire tie to top and parallel to main runner channels, extend 19 mm channels minimum 300 mm past each end of openings.

3.5 WALL FURRING

.1 Place furring channels attached to masonry or concrete surfaces at 400mm o.c. and not more than 100mm from corners and openings.

.2 Secure flanges to wall with hardened nails, power actuated fasteners or equivalent fastenings. Maximum spacing 600 mm alternating to opposite flanges.

3.6 ADJUSTING AND CLEANING

.1 Remove debris resulting from the work of this section upon completion.

END OF SECTION 09 22 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 SECTION INCLUDES

.1 Gypsum board on studs, furring, suspended ceilings and bulkhead.

1.3 RELATED SECTIONS

.1	Sealants & Caulking	Section 07 92 00
.2	Supports for Plaster & Gypsum Board	Section 09 22 00
.3	Painting	Section 09 91 00

1.4 REFERENCES

.1 Association Wall & Ceiling Contractors BC (AWCC) "Specification Standards Manual".

.2 CAN/CSA-A82.27-M91, "Gypsum Board Products".

.3 Underwriters' Laboratories of Canada (ULC).

.4 CSA A101-M1983, "Thermal Insulation, Mineral Fibre, for Buildings".

1.5 QUALITY ASSURANCE

.1 Gypsum board shall be in accordance with Association of Wall and Ceiling Contractors of B.C. (AWCC), "Specification Standards Manual", Section 9.6, Gypsum Wallboard and performed by a qualified specialist drywall firm employing skilled mechanics.

1.6 PRODUCT DELIVERY, STORAGE & HANDLING

.1 Store packaged material in original containers with manufacturer's seals and labels intact.

.2 Prevent damage to materials during handling and storage. Keep materials under cover and free from dampness.

1.7 SITE CONDITIONS

.1 Ensure temperature of surrounding areas is within the recommended range; min. 13^{o}C, maximum 21^{o}C, twenty-four (24) hours before, during and after entire gypsum wallboard and joint treatment operations. Avoid concentrated or irregular heating during drying.

.2 Ensure proper ventilation to eliminate excessive moisture.

.3 Start no work until conditions are satisfactory, commencement of work shall imply acceptance of conditions.

2.0 PRODUCTS

2.1 MATERIALS

.1 Gypsum board products, materials and accessories shall conform to AWCC Section 9.6, Part 2 and as follows.

2.2 GYPSUM BOARD

.1 Gypsum Wallboard: Conforming to CAN/CSA-A82.27-M1977 noncombustible gypsum core surfaced on face side with ivory coloured paper and on back side with grey paper; tapered

longitudinal edges, thickness 15.9mm; dimensions 1219mm x max. practical length for min. joints. All gypsum wallboard ceiling to be 15.9 mm thk.

.2 Fire-Rated Gypsum Wallboard: Conforming to CAN/CSA-A82.27-M91, Type "X" having ULC label for fire-resistance rating; tapered longitudinal edges, thickness 15.9mm; dimensions 1219mm x max. practical length to minimize joints.

.3 Moisture Resistant Gypsum Wallboard: Conforming to CAN/CSA-A82.27-M91; specially formulated core to resist moisture penetration covered with multi-layer face and back papers chemically treated to resist moisture penetration. Tapered longitudinal edges, thickness 15.9mm; dimensions 1219mm x max. practical length for min. joints. Type "X" having a ULC label for Fire Endurance Rating. All moisture resistant gypsum wallboard ceiling to be 15.9mm thk.

All washrooms to have moisture-resistant Gypsum wall board.

2.3 FASTENINGS & FINISHINGS

.1 Drywall Screws: Conforming to ASTM C646, self-drilling, self-threading case hardened screws with Phillips type head (bugle head). On steel studs and furring drywall screws shall have a min. penetration of 12.7mm, as follows:

Single Layer:	12.7 mm	#6 screw 25.4 mm
	15.9 mm	#6 screw 28.6 mm or 31.8
Double Layer:	12.7 mm	#7 screw 41.3 mm
	15.9 mm	#7 screw 47.6 mm

.2 Joint Treatment Materials:

.1 Tape: 50.8mm spark perforated paper tape, of type recommended by manufacturer of gypsum board products.

.2 Jointing Compound: Casein, vinyl or latex base; slow setting; bedding and finishing compounds of type recommended by manufacturer of gypsum board.

.3 Water: Fresh, clean, potable, free from deleterious matter or alkalis.

.4 Glass mat Gypsum: Type as recommended by manufacturer of sheathing board.

2.4 ACCESSORIES

.1 Corner Beads: Min. 0.45mm (26 ga.) galvanized sheet steel; beaded angle with perforated flanges; flanges 28.6mm. Use extended leg bead at external corners at double wallboard application.

.2 Casing Beads: Min. 0.45mm (26 ga.) galvanized sheet steel; 'L' type or 'J' as required; beaded angle or casing with one side perforated for joint filling, suitable for 12.7 mm and 15.9mm gypsum board.

.3 Reveal joint: Commercially available extruded plastic reveal profile for 12mm joint.

3.0 EXECUTION

3.1 INSPECTION

.1 Examine site conditions and other underlying work for defects and/or discrepancies which might impair the work of this section.

.2 Ensure that bucks, anchors, blocking, electrical and mechanical work which is to be installed in or behind gypsum board has been installed and approved, prior to commencing gypsum board application.

3.2 WORKMANSHIP

.1 Application of gypsum wallboard shall comply with AWCC Specification Standards, Section 9.6, Part 3, manufacturer's instructions and as specified herein.

.2 Finished gypsum board surfaces shall be smooth, without undulations and true to lines and levels indicated on drawings, ready for decoration.

.3 Finished joint camber shall not exceed 1.6mm over 300mm joints.

3.3 GENERAL APPLICATION

.1 Drywall partition types are designated on the Drawings in accordance with wall types listed in Wall Construction Schedule. Fire resistance rated walls and ceilings (where applicable): Comply with requirements of testing agency for wall and ceiling systems detailed on drawings.

.2 Install partitions extending from floor to underside of concrete slab or structure over unless indicated and/or listed otherwise.

.3 Install gypsum board to avoid butt-end joints if possible to reduce the amount of joint finishing.

.4 Do not locate joints on same stud on opposite sides of partitions. Stagger end joints occurring on same side of partitions.

.5 Keep vertical joints at least 300mm from the jamb lines of door, window and other openings.

.6 Cut sheets to fit accurately; butt edges of boards in moderate contact; do not force into place. Remove ragged edges or burrs with rasp or sandpaper.

.7 Cut and fit of gypsum board to accommodate recessed items in partitions and/or furring.

.8 Allow deflection spaces between drywall partitions and building structural framing components to allow for movement of framing components.

.9 Level of Finish:
- .1 Ceiling space and unexposed plenums, duct shaft – level one.
- .2 Ceiling exposed to view – level four.
- .3 Wall exposed to view – level four.
- .4 Wall indicated for environmental graphics – level five.

3.4 SINGLE LAYER APPLICATION

.1 Erect gypsum board vertically or horizontally, whichever results in fewer end joints. Locate end joints over supporting members.

.2 Arrange end joints to occur on different studs on opposite sides of a partition. Keep end joints away from prominent locations and central portions of ceilings.

.3 Locate vertical joints at least 300mm from the jamb lines of openings.

.4 Drive screws with a power screw gun and set with countersunk head slightly below the surface of the gypsum wallboard. Ensure paper face of the gypsum wallboard is not broken by screws.

.5 Ensure perimeter screws are not less than 9.5mm nor more than 12mm from edges and ends and are opposite the screws on adjacent boards.

.6 Space screws for fire-rated gypsum board 200mm o.c. at gypsum board edges and 300mm o.c. on gypsum board field on walls, 200mm o.c. on all ceilings, unless otherwise required by ULC Design Test (or other approved test) assembly for fire rating specified.

.7 Space screws for other applications at 300mm o.c. on the field and edges.

.8 Apply by screw method to steel supports or by single nailing to wood supports, in accordance with requirements of Section 9.6 - Part 3, Item 6 of A.W.C.C. Standards, 6.2 for screw (steel stud and furring) application, or otherwise described with drywall laid up in vertical position.

3.5 DOUBLE LAYER APPLICATION

.1 Apply by screwing base and face layers in accordance with Clause 3.4 for single layer application, except the locations of joints in the two layers shall not coincide.

.2 Where double layer is required, install double layer to entire wall to provide flush wall with no reveals or recesses.

3.6 SHAFT WALL ERECTION

.1 At fire-rated shaft wall partitions, the methods of assembly and applying of gypsum coreboard and wallboard shall be according to the ULC fire test specimens to maintain fire and sound ratings.

.2 Both ends to be factory sawn for tight fit joint. All uneven joint to be covered with back blocking of shaftliner over the joint.

3.7 MOISTURE RESISTANT & EXTERIOR GYPSUM SHEATHING

.1 Install and fasten moisture resistant and exterior sheathing gypsum wallboard as indicated in strict accordance with manufacturer's recommendations.

3.8 METAL ACCESSORIES

.1 Corner Beads: Install to external corners using longest practical lengths. Fix at max. 150mm o.c. (alternate sides). Use screw fixing for applying external corner beads.

.2 Casing Beads & Miscellaneous Trim: Install to openings and wherever gypsum board abuts a dissimilar material, using longest practical lengths; secure at max. 300mm o.c.

3.9 GYPSUM BOARD FINISHING

.1 Tape, fill and sand field joints and internal angles using specified paper tape.

.2 For field joints, corners and exposed screws or nail heads, beads, mix joint filler and apply in strict accordance with the printed directions of the manufacturer and as follows:

First: Embed the tape.
Second: Apply leveling coat over tape.
Third: Apply skim (polish) coat.

.3 Sand exposed joints, edges, corners, openings, screws and other filled areas to provide a smooth surface ready for decoration.

.4 Tape and fill only joints in partitions carried above ceilings and where so scheduled.

.5 Rooms without base mould or trim: Finish gypsum board joints to floor slab.

3.10 ACOUSTICAL INSULATION

.1 Install acoustical insulation, as specified, between steel studs in sound insulated partitions according to wall schedules. Tightly fit insulation between studs and install full heights of partitions. Install wire ties to hold insulation in place where steel studs have wallboard one side only.

.2 Install acoustical insulation at sound isolated drywall ceilings as indicated.

3.11 INTERIOR SEALANT

.1 Seal joints between edge of single layer drywall (exposed joint) and exposed masonry walls or other adjoining vertical surfaces with sealant compound.

.2 Seal joints between edges of gypsum board to inside of exterior walls at adjoining vertical and horizontal surfaces and at penetrations to provide an effective air barrier in accordance with code requirements.

3.12 FIRESTOP SEALANT

.1 Seal joints at penetrations of fire-rated partitions and wall construction, joint between edge of first layer gypsum board and concrete or concrete block or double layer gypsum board wall construction and where detailed to provide and effective seal against the passage of fire, smoke and water by Section 07270 - Firestopping & Smoke Seals.

3.13 PATCHING & POINTING

.1 Point up and patch gypsum board; point up and around trim and other set work and leave work complete and perfect.

.2 Perform necessary patching and making good to sleeves, conduits, cutouts in gypsum board as required.

3.14 ADJUSTING & CLEANING

.1 Clean thoroughly and remove excess materials from other finished surfaces. Particularly protect and keep clean glass and aluminum work.

.2 Promptly remove excess and waste material as work proceeds particularly jointing compounds, and at completion of work.

END OF SECTION 09 29 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and co-coordinated with all other parts.

1.2 SECTION INCLUDES

.1 Acoustical ceiling panels

1.3 RELATED SECTIONS

.1 Gypsum Board Section 09 29 00

1.4 REFERENCES

.1 AWCC (Association of Wall and Ceiling Contractors) Manual, Section 9.14, Acoustic Ceilings.

.2 ASTM C635, “Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings”.

.3 ASTM C636, “Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels”.

.4 ASTM A641M, “Specification for Zinc-Coated (Galvanized) Carbon Steel Wire”.

.5 ASTM E580, “Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Subject to Earthquake Ground Motions”.

.6 ASTM E 1264, Classification for Acoustical Ceiling Products.

.7 CAN/CGSB 92.1, Sound Absorptive Prefabricated Acoustical Units.

.8 CSA B111-74(R2003), Wire Nails, Spikes and Staples.

.9 CAN/ULC-S102-[10)], Surface Burning Characteristics of Building Materials.

1.5 SUBMITTALS

.1 Submit samples in accordance with Section 01 33 00.

.2 Manufacturer’s Data: Submit 4 copies of manufacturer’s specifications and installation instructions for each acoustic ceiling system component required. Include reports and other data as may be required to show compliance with these specifications.

.3 Samples

.1 Submit one 6” x 6” size samples of the acoustic ceiling panel.

.4 Maintenance Data: Submit for incorporation into maintenance manual complete instructions for the maintenance of ceiling materials installed in the work.

1.6 QUALITY ASSURANCE

.1 Execute all work of this section by approved and licensed workmen experienced in acoustic ceiling panel installations and in accordance with good trade practice.

.2 Conform to the requirement of the NBC for Class 25 (incombustible) Flame Spread Index according to Federal Specification SS-S-118a and have a Class 1 Flame Spread Rating according to ASTM E-84, for use in non-combustible construction for acoustic ceiling panels.

.3 Noise Reduction Coefficient (NRC), Light Reflectance Value, and Sound Transmission Class (STC) shall not be less than that listed in the “Acoustical and Board Products Association (ABPA) Bulletin”, latest edition, for each tile specified, unless otherwise specified.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver acoustical panels to Project site in original, unopened packages and store them in a fully enclosed space. Protect against damage from moisture, direct sunlight, surface contamination, and other causes.

.2 Before installing acoustical panels, permit them to reach room temperature and stabilized moisture content.

.3 Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.8 SITE CONDITIONS

.1 Environmental Conditions:

.1 Ensure temperature of surrounding areas remains above 14ºC (58ºF) before, during, and after application and relative humidity is not in excess of 80%.

.2 Protection:

.1 Protect work of this Section against damage by others.
.2 Protect work of other sections against damage, resulting from work of this Section.
.3 Repair and make good damage to approval of Consultant.

1.9 SCHEDULING

.1 Co-ordinate layout and installation of acoustical panels with other construction that penetrates ceilings or is supported by them.

2.0 PRODUCTS

2.1 CEILING PANELS

.1 ACT: Acoustic units for suspended ceiling system: to CAN/CGSB-92.1

.1 ASTM E1264 Classification: Type IV, Form 2, Pattern E, Fire Class A.
.2 Material: Wet-formed Mineral Fiber with acoustically transparent membrane.
.3 Surface Finish: Acoustically transparent membrane with factory applied latex paint.
.4 Flame spread rating of 25 or less in accordance with CAN/ULC-S102.
.5 Smoke development Classification 50 or less in accordance with CAN/ULC-S102.
.6 Noise Reduction Coefficient (NRC) designation of 0.55 to ASTM C423.
.7 Light Reflectance (LR) range of 0.83 to ASTM E 1477.
.8 CAC Rating: 33.
.9 Color: White.
.10 Shape: flat.
.11 Certified Low VOC Emissions.
.12 Humid and Sag Resist: Standard.
.13 Mold/Mildew Protection: Bioshield Treatment.
.14 Recycled Content: 33% or more total (post & pre-consumer).
.15 Warranty: Minimum 10-year performance guarantee.
.16 Size: 24in x 48in x 5/8in.
.17 Edge Profile: Reveal
.18 Acceptable Manufacturer and Product: CertainTeed Baroque Customline Mineral Fiber Fissured BET-194
.19 Location: South side unused service counter

2.1 ACOUSTIC FELT BAFFLE CEILING

2.2 ACCESSORIES

.1 Touch-up paint: in accordance with manufacturer's recommendations for surface conditions:

.1 Paint: VOC limit 250 g/L maximum to and GS-11 and SCAQMD Rule 1113.

3.0 EXECUTION

3.1 INSPECTION/PREPARATION

.1 Inspect the work of other Sections upon which the Work of this Section depends. Proceed only after deficiencies, if any, in the Work of other Sections have been corrected.

.2 Refer to Drawing schedules for types, locations of acoustic ceilings.

.3 Obtain data and dimensions from mechanical and electrical trades governing the exact location and suspension of ceiling fixtures and fittings.

3.2 INSTALLATION, APPLICATION, PERFORMANCE

.1 Panels:

.1 Ensure mechanical, electrical work and finished painting have been completed and inspected before installing panels.

.2 Neatly cut and fit acoustic panels to suspension system. Acoustic panels should be installed with undamaged edges.

.3 Make cutouts as required for fixtures.

.4 Install acoustical panels in ceiling suspension system.

3.3 ADJUSTING AND CLEANING

.1 Upon completion of the work, replace any defective or marked tile or suspension systems.

.2 Adjust and level suspension as required.

.3 Clean acoustic felt baffle ceiling according manufacturer’s written recommendations.

END OF SECTION 09 51 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 SECTION INCLUDES

.1 Prepare existing floor slab to receive new floor finish.

.2 Supply and install Linoleum sheet flooring.

.3 Supply and install Resilient Base.

1.3 RELATED SECTIONS

.1 Gypsum Board Section 09 29 00

.2 Carpeting Section 09 68 00

1.4 REFERENCES

.1 ASTM International
- .1 ASTM F 1861-08 (2012) e1, Standard Specification for Resilient Wall Base.
- .2 ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
- .3 ASTM F2034 Standard Specification for Sheet Linoleum Floor Covering.
- .4 ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- .5 Fire: ASTM E648 – Class 1; Smoke: ASTM E662 – 450 or less, CAN/ULC S102.2-M88.

.2 National Floor Covering Association (NFCA) Specification Manual.

.3 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
- .1 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

1.5 QUALITY ASSURANCE

.1 Work to be in accordance with manufacturer's standard specifications and supervised by a certified installer whose work has been approved by the manufacturer of the materials used.

.2 All preparation, materials and workmanship shall be in strict accordance with NFCA requirements and material manufacture’s written recommendation and detail requirements for conditions of work that apply and guarantee/warranty periods noted herein.

.3 Linoleum flooring must be ordered a minimum of sixty (60) days prior to start of scheduled installation.

1.6 SUBMITTALS

.1 General: Submit for Consultant's review, in accordance with Section 01 33 00.

.2 Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions (latest edition of manufacturer’s manual) for flooring and accessories.

.3 Samples:
- .1 Submit duplicate 300 mm long base as per colors specified.

.2 Submit duplicate 300 x 300 mm sample pieces of each type of resilient sheet flooring and, 300 mm long welding rod as per colors specified.

.3 Submit manufacturer's standard color range for selection, review and acceptance of each unit where colors are not specified.

.4 Submit product literature of Materials, together with the proposed ordering and delivery schedule for all such materials.

.5 Substrate Tests: Submit copies of moisture and alkalinity tests.

.6 Closeout Submittals:

.1 Submit 4 copies of the following for incorporation into manual specified in Section 01 77 00 Closeout Procedures.

.2 Maintenance and operations data includes – methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.

.3 Warranty: Warranty documents specified herein.

.7 Flame Spread Certification: Submit manufacturer's certification that resilient flooring furnished for areas indicated to comply with required flame spread rating has been tested and meets or exceeds indicated standard.

.8 Replacement Material: After completion of work, deliver to project site and store where directed, replacement materials from same manufactured lot as materials installed, and as follows:

.1 Provide 10% extra materials of each colour, pattern, and type flooring materials required for project maintenance use.

.2 Clearly identify each container of flooring materials and each container of adhesive.

.3 All maintenance materials to be in one piece as packaged by the manufacturer.

1.7 WARRANTY

.1 Guarantee: Provide a written guarantee in a form acceptable to Owner, that the work of this Section is guaranteed against shrinking, stretching, creeping, lack of adhesion and failure due to defective products and/or workmanship, for a period of five (5) years from the date of Substantial Performance.

1.8 ENVIRONMENTAL CONDITIONS

.1 Maintain air temperature and structural base temperature at flooring installation areas above 20^{o}C for 72 hours before laying, during and 72 hours after installation.

.2 Moisture: Ensure substrate is within moisture limits and alkalinity limits prescribed by manufacturer.

1.9 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver and store materials in original containers, with manufacturer's labels and seals intact, in a dry weatherproof building.

.2 Maintain storage room temperature 20 degrees Celsius minimum for 72 hours minimum prior to laying.

1.10 JOB CONDITIONS

.1 Inspect all surfaces prior to start of work and report any unsatisfactory conditions to the Consultant. Starting work shall imply acceptance.

.2 Do not commence installation until moisture tests have been conducted and conditions are found to be acceptable.

.3 Obtain instruction from Consultant before starting work, concerning directions of patterns and grains of resilient coverings.

.4 Consult other trades in advance and make provisions for work of other trades to avoid cutting and patching.

.5 Protect surrounding surfaces from soiling; make good defects.

2.0 PRODUCTS

2.1 MATERIALS

.1 Linoleum Sheet Flooring

.1	Homogeneous Linoleum Sheet Flooring to ASTM F2034 for commercial application	
.2	Width:	2 meters
.3	Length:	32 meters
.4	Gauge:	2.5 mm
.5	Backing:	Jute
.6	Static Load Limit:	850 PSI to ASTM F-970
.7	Fire Performance:	ASTM E 648 – Class 1; ASTM E 662 less than 450; CAN/UCL – S102.2: FSC1 – 150, SD-160
.8	Location:	Refer to Finish Schedule and Finishes Plans
.9	Approved color & material:	Marmoleum – Forbo Striato 5248 Urban Silver.

.3 Resilient Base

.1 Resilient Base: To ASTM F1861, rubber, continuous length top set, bullnose top, toe
.2 Height: 100 mm
.3 Thickness: 3 mm
.4 Exterior Corners: Cut backside and fold
.5 Interior Corners: Mitre on site
.6 Exposed Ends: Round off corners on site. Provide in longest lengths possible. Joints to be at corners only where possible.
.7 Acceptable Product & Manufacturer: Rubber Base by TARKETT JOHNSONITE; Color to match existing

.4 Accessories:

.1 Metal Schluter transition / reducing & edge strips tapered to meet abutting materials, colour as selected by Consultant.
.2 Provide welding rod as produced by sheet flooring manufacturer and intended for heat welding of seams of specified flooring materials. Color shall be compatible with and best match the field color of flooring.
.3 Seam Adhesive: Provide seam adhesive at seams as recommended by resilient flooring manufacturer where applicable.

.5 Primers and Levelers: Compatible types as recommended by flooring and adhesive manufacturers. Leveling and filler compound to be two-component type, consisting of liquid latex and dry-mixed filler, both supplied by same manufacturer.

.6 Adhesives: Waterproof type recommended by flooring manufacturer for the applicable conditions. Approved product: Sustain 100 Adhesive System by Forbo for linoleum flooring; FRS 885 Adhesive System by Forbo for flocked flooring. Use special base adhesive.

3.0 EXECUTION

3.1 INSPECTION

.1 Ensure concrete floors are smooth, dry and free from scale and other foreign matter likely to be detrimental to flooring.

.2 Take moisture and alkalinity tests. Use test method recommended by flooring manufacturer.

.3 Notify Consultant in writing of conditions that may effect finished flooring prior to start of work.

.4 Start of work implies acceptance of substrates.

3.2 PREPARATION

.1 Prepare for installation in accordance with manufacturer's written recommendations.

.2 Remove grease, dust and dirt remaining, fill cracks, holes, joints, with approved joint filler and rough grind to eliminate irregularities. Prohibit traffic until filler is cured and dry. Vacuum floor.

.3 Prep floor with extra concrete leveller as needed in addition to nominal skim coat especially at location of demolished partition walls, and along long hallway where all door openings need to align. Level the floor within the same area. Provide slope to floor drain location. Level along the length of operable partition to meet operable wall manufacturer’s tolerance.

.4 Carry out all preparation or work as may be required, in order to ensure a satisfactory installation, including flush leveled between floor finish changes.

.5 Seal concrete slab as recommended by resilient flooring manufacturer's written instructions.

.6 Perform Bond test prior to installation using the flooring and adhesive suitable for the subfloor, install a 915 x 915mm (3’ x3’) section following the recommended installation procedures. Select areas next to walls, columns, or other light traffic areas. Tape the perimeter with duct tape to prevent edge drying of the adhesive. After 72 hours, the adhesive should be dry and the flooring should be difficult to remove.. All test result to be documented and submit to Consultant for record.

.7 Conduct Calcium Chloride Tests before installing resilient flooring. Tests to be made for both existing and new concrete slabs on all floors where they are least subject to drying conditions. Where curing agents have been used, they should be removed in and around the test areas to help obtain accurate results. The tests should be conducted in accordance with the latest edition of ASTM F 1869, "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride." The test should comply with the maximum acceptable moisture emission levels according to Manufacturer’s requirement. All test result to be documented and submit to Consultant for record.

.8 Perform Alkali Test to existing and new Concrete slabs on all floors for alkalinity before the installation of resilient flooring. The allowable readings must be within 5 to 9 on the pH scale. All test result to be documented and submit to Consultant for record.

.9 Conduct Moisture testing in accordance with ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs using in situ Probes or ASTM F 1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor. All test result to be documented and submit to Consultant for record.

.10 Where required, prime surfaces with primers recommended by adhesives manufacturer.

3.3 INSTALLATION

.1 General:

.1 All primers, where recommended, shall be mandatory.

.2 Provide reference markers. Use chalk or other non-permanent marking devices.
.3 All tools and methods of application shall be strictly in accordance with the manufacturer's printed instruction, unless specified otherwise.
.4 Work shall be installed in accordance with approved manufacturer's standard specifications, supervised by a certified installer whose work has been approved by the manufacturer of the materials being used.
.5 At completion, all flooring shall be completely adhered to the substrate throughout and free of bumps caused by installation over improperly prepared substrate and/or loose particles covering the substrate.
.6 Work shall be subject to nominal inspection of the manufacturer's representative during and after installation.

.2 Sheet Flooring:
.1 Apply adhesive uniformly using recommended trowel. Do not spread more adhesive than can be covered by flooring before initial set takes place.
.2 Lay flooring to produce a minimum number of seams. Border widths minimum 1/3 width of full material. Avoid cross seams, filler pieces, and strips. Match edges for color shading and pattern at the seams in compliance with the manufacturer's recommendations.
.3 Double cut sheet joints and continuously seal. Heat weld seams according to manufacturer's printed instructions.
.4 As installation progresses, and after installation, roll flooring with 45 kg minimum roller to ensure full adhesion.
.5 Cut flooring neatly around fixed objects. Continue flooring over areas that will be under built-in furniture.
.6 Terminate flooring at interior of door in openings where adjacent floor finish or colour is dissimilar.
.7 Install edge strips at unprotected or exposed edges where flooring terminates.
.8 Install continuous bead of silicone sealant at joint where flooring terminates against walls prior to installing rubber base.
.9 Install flooring to pattern and direction as directed by consultant. Distribute variation in shade of pattern of production run to obtain uniform effect. Abrupt variations will not be permitted.
.10 Caulk joint between flooring and door frames, window frames and other similar conditions.
.11 Without damaging surfaces, remove any excess adhesive from the flooring and wall surfaces as the work proceeds.
.12 Prepare heat-welded seams with special routing tool supplied for this purpose and heat weld with vinyl welding rod in seams. Prepare sealed seams with special seam adhesive supplied for this purpose. Use methods and sequence of work in conformance with written instructions of the flooring manufacturer. Finish all seams flush and free from voids and gaps, recesses, and raised areas.

.3 Base:
.1 Apply to walls in continuous full lengths, using special base adhesive, with top uniform and level, to variation of 1:1000, and bottom of base uniformly tight to flooring with no gaps.
.2 Use pre-molded units at all external corners, with mitre cut internal corners.
.3 Joints to be plain, tight butt, inconspicuously placed where possible.
.4 Use 3 kg hand rollers to ensure base is firmly embedded in adhesive.
.5 Accurately scribe to frames, fitments and other obstructions.
.6 Install base on walls, columns, cabinets and fitments of rooms where base is scheduled or shown.
.4 Edge Strip:
.1 Apply edge strip at exposed edges of resilient flooring.

3.4 CLEANING AND WAXING

.1 Remove excess adhesive from floor, base and other surfaces without damage.

.2 Clean floor and base surfaces to flooring manufacturer's printed instructions.

3.5 PROTECTION

.1 Do not allow loads or traffic on flooring for at least 48 hours after installation.

.2 Do not flood with water for at least two (2) weeks after installation.

.3 Protect installed flooring in a manner recommended by flooring manufacturer against damage from rolling loads, the work of other trades, and including the placement of fixtures and furnishings.

.4 Provide manufacturer-recommended regular maintenance, until the date of Substantial Performance.

END OF SECTION 09 65 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 SECTION INCLUDES

.1 Supply and install carpeting.

1.3 RELATED SECTIONS

.1 Resilient Flooring Section 09 65 00

1.4 REFERENCES

.1 CGSB 4-GP-129+Corr & Amend - Carpets Commercial.

.2 CGSB 4-GP-156 Direct Glue - Down Carpet - Installation.

.3 CAN4 S102.2-M80 Flame Spread.

.4 CGSB 4-GP-155M Flammability.

.5 Specification Standards Manual as published by the National Floor Covering Association.

.6 Carpet and Rug Institute (CRI) Carpet Installation Standard 2009.

1.5 QUALITY ASSURANCE

.1 Work to be performed by qualified, skilled layers with five (5) years minimum experience in this type of Work and under the direct supervision of a responsible and experienced foreman.

1.6 SUBMITTALS

.1 Samples: Submit duplicate full size pieces of specified materials, for each colour selected and provide samples of accessories in accordance with Section 01 33 00.

.2 Product Data: Submit manufacturer's data verifying compliance with this specification section.

Submit evidence acceptable to Fire Marshall verifying compliance with:

.1 Flame resistance to CGSB 4-GP-129 as conforming to Hazardous Products Act, Carpet Regulations.

.2 ULC flame spread and smoke developed classification by ULC listing or test report certified by nationally recognized fire test Laboratory.
Submit certifications in accordance with Section 01 33 00.

.3 Shop Drawings:

.1 Submit shop drawings in accordance with 01 33 00 Submittal Procedures.

.2 Information on shop drawings to indicate:

.1 Nap: direction, open edges, special patterns.

.2 Cutouts: show locations where cutouts are required.

.3 Edgings: show location of edge moldings and edge bindings.

.4 Maintenance Materials: Provide 2% minimum of floor area carpeted for each colour used for future maintenance. Identify all materials. Store where directed.
Maintenance materials to be in the same production run as installed materials.

.5 Maintenance Data: Provide maintenance data for carpet.

.6 Guarantee: Provide a written guarantee that work of this Section is guaranteed against

deterioration and failure of material and workmanship detrimental to appearance and performance under normal traffic conditions, for a period of ten (10) years, and that all defects will be made good, without cost to Owner.

In addition, provide manufacturer's guarantee to cover defects in carpet material for ten (10) years against unraveling, colour fading and deterioration of backing materials.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver and store materials in original containers with manufacturers' seals and labels intact.

.2 Prevent damage to materials during handling and storage. Keep materials under cover and free from dampness.

.3 Store materials in area of installation for minimum period of 48 hours prior to installation.

.4 Store carpet and adhesive at minimum temperature of 21°C and relative humidity of maximum 65% for minimum of 72 hours before installation.

1.8 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 19 – Construction Waste Management.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal packaging material for recycling in accordance with Waste Management Plan.

.4 Vacuum used carpet before removal.

.5 Maintain possession of removed used carpet.

.6 Sort only clean, dry carpet materials for reclamation. Clean is defined as carpet free from demolition debris, asbestos contamination, garbage and tack strips.

.7 Immediately remove used carpet from site and transport to reclamation point.

1.9 PROTECTION

.1 Protect carpeting materials at the place of building, using original wrappings or heavy-duty polyethylene sheets.

.2 Upon completion of work, cover traffic areas with heavy duty polyethylene walk sheets.

.3 Protect existing work from damage; make good Work damaged at no additional cost to the Owner.

1.10 ENVIRONMENTAL CONDITIONS

.1 Temperature: Maintain ambient temperature 20 degrees C. minimum for 72 hours before and after, and during installation.

.2 Lighting: Provide 161 cd/m^2 (15c/ft^2) minimum at surface.

.3 Relative humidity: Maintain relative humidity between 10 and 65% RH for 72 hours before, during and 72 hours after installation.

.4 Safety: Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials.

.5 Ventilation: Provide adequate controlled ventilation during and after installation.

.6 Do not install carpet until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, and work above ceilings is complete.

2.0 PRODUCTS

2.1 MATERIALS

.1 General: Materials of first quality, no seconds or sub-standards, colours continuous throughout thickness of yarn.
Ensure carpet conforms to CGSB 4-GP-129+ Corr & Amend except as noted, and CGSB 4-GP-155M (flammability).

.2 Carpet Tiles:

.1	Product Construction:	Muiti-Level Patterned Loop
.2	Yarn System:	Invista Antron Lumena Type 6,6 Nylon
.3	Dye Method:	100% Solution Dyed
.4	Gauge:	½”
.5	Stitches per Inch:	8.5
.6	Pile Thickness:	0.092 inches
.7	Tufted Yarn Weight:	16 Ounces Per Square Yard
.8	Density:	Average Density = 6,261 oz/yd^3
.9	Primary Backing:	100% Synthetic
.10	Secondary Backing:	Ecoworx Tile
.11	Technologies:	Colorsafe, XGuard
.12	Size:	24in x 24in (610mm x 610mm) Modular Tiles
.13	Acceptable Product & Manufacturer:	Diffuse 24x24 Ecworx 59575 by Shaw Contract
.14	Color:	Magnetic Fields 75505
.15	Installation:	Match existing pattern

.3 TacTiles connectors or adhesive, tapes and other accessories as recommended by carpet manufacturer

.4 Carpet protection: non-staining heavy duty kraft paper or 0.152 mm thick polyethylene film.

.5 Metal transition/reducing strips tapered to meet abutting materials.

.6 Patching/Filler/Leveling Compound: Two components consisting of liquid latex and dry, premixed filler, both supplied by same manufacturer. Use Mapei-Plani/Patch or other cementitous underlay to approval of the Consultant.

3.0 EXECUTION

3.1 SURFACE CONDITION

.1 Inspect substrate prior to start of work, ensure that surfaces are sound, cured, non-dusting, smooth and free from defects likely to be detrimental to the work.

.2 Cure concrete floors 28 days minimum.

.3 Notify Consultant in writing of all defects likely to impair finished work. Start of work implies acceptance of surfaces and conditions.

3.2 PREPARATION

.1 Remove grease, dirt, and dust remaining, fill cracks, holes, and joints with approved joint filler

and rough grind to eliminate irregularities. Sweep and vacuum substrate clean.

.2 Ensure that carpet base has been installed prior to laying carpet.

.3 At all locations which receive flooring, verify condition of sub-floor and determine if the floor is level, and before installation of flooring, spread underlayment where required to provide level floors. Carpet to have flush leveled transition between other floor finishes.

.4 Sub-floor preparation as per manufacturer's written instruction. Perform concrete moisture and alkalinity testing.

3.3 INSTALLATION

.1 All primers, where recommended, shall be mandatory.

.2 All tools and methods of application shall be strictly in accordance with the requirements of the NFCA Manual, in accordance with manufacturer's written instructions and recommendations, and as modified herein.

.3 Work shall be installed in accordance with approved manufacturer's standard specifications and installation, supervised by a certified installer whose work has been approved by the manufacturer of the materials being used.

.4 Install carpet smooth and free of bubbles, puckers, and other defects.

.5 Use materials from same dye lot. Ensure colour, pattern and texture match within any one visual area. Maintain constant pile direction.

.6 Confirm lay-up pattern with Consultant before commencing any installation. Layout the work in accordance with the drawings and specifications. Install the carpet to pattern and direction, as per Floor Finishes Plan.

.7 Install only after other trades and finish work is completed, and fitments, telephone and electrical pedestal outlets are installed.

.8 Distribute variation in shade of pattern of production run to obtain uniform effect. Abrupt variations will not be permitted.

.9 Do cutting and fitting as required. Cut and fit neatly into recesses and breaks around columns, heating elements, piping, outlets and other projections through floor. Fill in strips not less than 450 mm x 900 mm.

.10 Seal finish edges of cut-outs and finish with positive binding methods to produce a 'trim free' finish.

.11 During stretching and laying operations, continually roll seams using a steel segmented roller weighing 45 kg (100 lbs.) minimum and ensure that seams lie perfectly flat.

.12 Butt edges of carpet to form a seam-free appearance, in strict accordance with recommended trade practice. Apply liquid latex to backs of seams for additional strength.

.13 Lay wall to wall square with room axis unless otherwise shown or directed, with metal edge strip at exposed edges.

.14 Lay carpet evenly over the entire area, to ensure a perfectly smooth installation, free from burring, seam separation, puckers and crooked seams, distortions of pattern and/or weave,

uneven tension and other detrimental defects.

.15 Extend carpet into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

.16 Terminate flooring at interior of door in openings where adjacent floor finish or color is dissimilar.

.17 Protect exposed carpet tile edges at transition to other flooring materials with suitable stainless steel transition strips.

3.4 FIELD QUALITY CONTROL

.1 Carpet manufacturer's representative: Visit the site before application to ensure subfloor is properly prepared. Inspect rolls as they are opened to confirm carpet is as specified. Visit the site from time to time to review installation. Examine installation prior to final acceptance and report to the consultant any defects which would affect the performance of the carpet installation.

3.5 ADJUSTING AND CLEANING

.1 Immediately after installation remove all trimmings, clippings and other excess material from the place of building.

.2 Remove spots from carpet surface with and approved spot remover, and thoroughly vacuum the carpet and leave clean and perfect.

.3 Protect traffic areas of carpeted floors with carpet protection.

.4 Repair damage to adjacent materials caused by carpeting installation.

END OF SECTION 09 68 00

1.0 GENERAL

1.1 DOCUMENTS

.1 This Section of the Specifications forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 SECTION INCLUDES

.1 Paint all surfaces to remain exposed in the finished work whether specifically indicated or not, except shop and factory finished items and those specifically indicated not to be painted. No surface shall have less than one prime coat and two finish coats.

.1 Paint walls and ceiling as specified herein except as noted on drawings.

.2 Paint all exposed piping in exposed ceiling.

.2 Colour Scheme: Colours as selected by Consultant. Allowable manufacturer: Dulux Paints

1.3 RELATED SECTIONS

.1	Finish Carpentry	Section 06 20 00
.2	Hollow Metal Doors and Frames	Section 08 11 13
.2	Wood Doors	Section 08 14 00
.3	Finish Schedule	Section 09 06 00
.4	Gypsum board	Section 09 29 00

1.4 QUALITY ASSURANCE

.1 This Contractor shall have a minimum of five (5) years proven satisfactory experience and shall show proof before commencement of work that he will maintain a qualified crew of painters throughout the duration of the work. When requested, Contractor shall provide a list of the last three comparable jobs including name and location, specifying authority/project manager, start and completion dates and cost amount of the painting work.

.2 Only qualified journeymen who have a “Tradesman Qualification Certificate of Proficiency” shall be engaged in painting and decorating work. Apprentices may be employed provided they work under the direct supervision of a qualified journeyman in accordance with trade regulations.

.3 Conform to the standards contained in the Master Painters Institute Architectural Painting Specification Manual, latest edition (hereafter referred to as MPI Painting Specification Manual) for all painting products including preparation and application of materials. MPI Painting Specification Manual as issued by the local MPI Accredited Quality Assurance Association having jurisdiction.

.4 All paint manufacturers and products used shall be as listed under the “Approved Products” section of the MPI Painting Specification manual.

.5 Other paint materials shall be the highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and shall be compatible with other coating materials as required.

.6 Single-Source Responsibility: provide primers and undercoat paint produced by the same manufacturer as the finish coat.

.7 All painting and decorating work shall be inspected by Paint Inspection Agency (inspector) acceptable to the specifying authority and the local MPI Accredited Quality Assurance Association. The painting contractor shall notify the Paint Inspection Agency a minimum of one

week prior to commencement of work and provide a copy of the project painting specification, plans and elevation drawings (including pertinent details) as well as a Finish Schedule.

.8 All surfaces requiring painting or repainting shall be inspected by the inspection agency who shall advise on all aspects of painting work including preparation, notifying the Consultant, the Contractor and the Trade Contractor of any defects or problems prior to commencing painting work or after the prime coat shows defects in the substrate, and as the work progresses.

.9 Standard of Acceptance:
- .1 Wall: No defects visible from a distance of 1000mm at 90° to surface.
- .2 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

1.5 REGULATORY REQUIREMENTS

.1 Conform to workplace safety regulations for storage, mixing, application and disposal of all paint related materials to requirements of those authorities having jurisdiction.

.2 Conform to safety precautions in accordance with the latest requirements to Industrial Health and Safety Regulations, latest edition, of authorities having jurisdiction.

1.6 SAMPLES AND MOCK-UPS

.1 When requested by the Consultant or Paint Inspection Agency, provide duplicate minimum 300 mm (12”) square samples of surfaces or acceptable facsimiles requested painted with specified paint or coating in colours, gloss/sheen and textures required to MPI Architectural Painting Specification Manual standards for review and approval. When approved, samples shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.

.2 When requested by the Consultant or Paint Inspection Agency, prepare and paint designated surface, area, room or item (in each colour scheme) to requirements specified herein, with specified paint or coating showing selected colors, gloss/sheen, textures and workmanship to MPI Architectural Painting Specification Manual standards for review and approval. When approved, surface, area, room and/or items shall become acceptable standard of finish quality and workmanship for similar on-site work.

1.7 SUBMITTALS

.1 All submittals shall be in accordance with the requirements of Section 01 33 00 – Submittals.

.2 Submit a list of all painting materials to the Consultant for review prior to ordering materials.

.3 Submit two sets of Material Safety Data Sheets (MSDS) prior to commencement of work for review and for posting at job site as required.

.4 Submit Source of VOC Data (letter, cutsheet, or MSDS) for all paint products indicating Product Name and VOC content.

.5 When requested, submit invoice list of all paint materials ordered for project work to Consultant indicating manufacturer, types and quantities for verification and compliance with specification and design requirements.

.6 When requested or required by painting of occupied areas, submit work schedule for various stages of work for the Consultant’s review and Owner’s approval.

.7 At project completion provide an itemized list complete with manufacturer, paint type and colour coding for all colours used for Owner’s later use in maintenance.

.8 At project completion provide properly packaged maintenance materials as noted herein and obtain a signed receipt.

1.8 DELIVERY, STORAGE AND HANDLING

.1 Deliver all painting materials in sealed, original labeled containers bearing manufacturer's name, brand name, type of paint or coating and colour designation, standard compliance, materials content as well as mixing and/or reducing and application requirements.

.2 Store all paint materials in original labeled containers in a secure (lockable), dry, heated and well ventilated single designated area meeting the minimum requirements of both paint manufacturer and authorities having jurisdiction and at a minimum ambient temperature of 45 degrees F (7 degrees C). Only material used on this project to be stored on site.

.3 Where toxic and/or volatile/explosive/flammable materials are being used, provide adequate fireproof storage lockers and take all necessary precautions and post adequate warnings (e.g., no smoking) as required. Take adequate measures to prevent the release of volatile organic compounds (VOC) into the atmosphere.

.4 Take all necessary precautionary and safety measures to prevent fire hazards and spontaneous combustion and to protect the environment from hazard spills. Materials that constitute a fire hazard (paints, solvents, drop clothes, etc.) shall be stored in suitable closed and rated containers and removed from the site on a daily basis.

.5 Comply with requirements of authorities having jurisdiction, in regard to the use, handling, storage and disposal of hazardous materials.

1.9 PROJECT / SITE REQUIREMENTS

.1 UNLESS specifically pre-approved by the Consultant, perform no painting or decorating work when the ambient air and substrate temperatures are below 50 degrees F (10 degrees C) for both interior and exterior work.

.2 Perform no painting or decorating work when the relative humidity is above 85% or when the dew point is less than 5 degrees F (3 degrees C) variance between the air/surface temperature.

.3 Perform no painting or decorating work when the maximum moisture content of the substrate exceeds:

- 12% for concrete and masonry (clay and concrete brick / block).
- 15% for wood.
- 12% for plaster and gypsum board.

.4 Conduct all moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple "cover patch test."

.5 Test concrete, masonry and plaster surfaces for alkalinity as required.

NOTE: Concrete and masonry surfaces must be installed at least 28 days prior to painting and decorating work and must be visually dry on both sides. This is not to be construed as including a "wetting down" process for Latex.

.6 Perform no painting or decorating work unless a minimum lighting level of 323 Lux (30 foot candles) is provided on surfaces to be painted or decorated. Adequate lighting facilities shall be provided by the General Contractor.

.7 Perform no painting or decorating work unless adequate continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above 50 degrees F (10 degrees C) for 24 hours before, during and after paint application. Provide supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.

.8 Apply paint only to dry, clean, properly cured and adequately prepared surfaces in areas where dust is no longer generated by construction activities such that airborne particles will not affect the quality of finished surfaces.

1.10 SCHEDULING

.1 Schedule painting operations to prevent disruption of and by other trades.

.2 Schedule painting operations to prevent disruption of occupants in and about the building. Obtain written authorization from Consultant for changes in work schedule.

1.11 EXISTING CONDITIONS

.1 Before starting work ensure that surfaces are clean and dry and free of defects before commencing painting. Starting work shall imply acceptance of surfaces for painting.

1.12 PROTECTION

.1 Protect adjacent work from droppings, overrun, damage or disfigurement.

.2 Coordinate with Division 16 to remove electrical plates, surface hardware, fittings and fastenings, prior to painting operations. These items shall be carefully stored, cleaned and replaced on completion of work in each area. No solvent shall be used to clean hardware that will remove the permanent lacquer finish on some of these items.

.3 Protect items that are permanently attached such as Fire Labels on doors and frames.

.4 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.

.5 As painting operations progress, place “WET PAINT” signs in occupied areas.

.6 Make good all damage caused without extra expense to Owner and to Consultant's satisfaction.

1.13 GUARANTEE

.1 Furnish a 100% two (2) year Maintenance Bond.

.2 Painting and decorating Subcontractors providing a Maintenance Bond shall provide a maintenance bond consent from a reputable surety company licensed to do business in Canada. Cash or certified cheque are not acceptable in lieu of surety consent.

1.14 MAINTENANCE MATERIALS

.1 At project completion provide 4 litres (1 gallon) of each type and colour of paint from the same production run (batch mix) used in unopened cans, properly labeled and identified for Owner’s later use in maintenance. Store where directed.

2.0 PRODUCTS

2.1 MATERIALS

.1 All materials shall be manufacturer's best quality products, and in accordance with the MPI Architectural Painting Specification Manual “Approved Product” listing and shall be from a single manufacturer for each system used.

.2 Paints shall be ready-mixed unless otherwise specified, except that any coating in paste or powder form, or to field-catalyzed shall be field-mixed in accordance with the directions of its manufacturer. Pigments shall be fully ground and shall maintain a soft paste consistency in the vehicle during storage that can and shall be dispersed readily and uniformly by paddle to a complete homogeneous mixture.

.3 The paint shall have good flowing and brushing properties and shall dry or cure free of streaks or sags, to yield the desired finish specified.

.4 Shellac and turpentine to be best quality, and to be compatible with other best materials as required.

.5 All materials and paints shall be lead LEED compliance with low / no VOC content.

.6 Where required, paint products shall meet the requirements of the Environmental Choice Program, Department of the Environment. Water based paints to be certified to ECP-12-89.

2.2 EQUIPMENT

.1 Painting and decorating equipment – to best trade standards for type of product and application.

.2 Spray painting equipment – of ample capacity, suited to the type and consistency of paint or coating being applied and kept clean and in good working order at all times.

2.3 MIXING AND TINTING

.1 Unless otherwise specified, paints shall be ready-mixed. Re-mix prior to application to ensure colour and gloss uniformity.

.2 Paste, powder or catalyzed paint mixes shall be mixed in strict accordance with manufacturer's written instructions.

.3 Perform all colour tinting operations prior to delivery of paint to site.

.4 Where thinner is used, addition shall not exceed paint manufacturer's recommendations.

2.4 GLOSS

.1 Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following values:

Gloss Level 1	A traditional matte finish - flat	Max 5 units, and	Max 10 units
Gloss Level 2	A high side sheen flat – a "velvet-like" finish	Max 10 units, and	10-35 units
Gloss Level 3	A traditional eggshell-like finish	10-25 units, and	10-35 units
Gloss Level 4	A 'satin-like finish	20-35 units, and	Min 35 units
Gloss Level 5	A traditional semi-gloss	35-70 units,and	
Gloss Level 6	A traditional gloss	70-85 units, and	
Gloss Level 7	A high gloss	More than 85 units	

2.5 FINISHES

.1 Colours shall be submitted by Contractor to the Consultant to match existing wall and ceiling color.

.2 The consultant shall decide the extent of all colour areas, where the colour shall terminate or commence, and where colour and texture shall match or contrast with adjacent areas.

2.6 INTERIOR PAINTING SYSTEMS – NEW CONSTRUCTION

.1 Plaster and gypsum board: gypsum wallboard, drywall, "sheet rock type material", and textured finishes:

.1 INT 9.2A - Latex (over latex sealer), gloss level 3 finish for walls, gloss level 1 for ceiling typical except gloss level 4 for wall in washrooms.

.2 Wood Door: Veneer Finish
.1 INT 6.3K – Polyurethane varnish gloss level 4

2.7 INTERIOR REPAINTING SYSTEMS
.1 Plaster and Gypsum Board Surfaces: gypsum wallboard, drywall, “sheet rock type material”, etc.
.1 RIN 9.2A Latex, gloss level 3 finish for wall typical, gloss level 1 finish for ceiling typical.

3.0 EXECUTION

3.1 CONDITION OF SURFACES
.1 Prior to commencement of work of this section, thoroughly examine surfaces scheduled to be painted.

.2 Report in writing to the Consultant any condition adversely affecting this work.

.3 Do not proceed with Work until all such defects have been corrected and surfaces are acceptable to the Painting Contractor.

.4 Commencement of work shall be held to imply acceptance of surfaces except as qualified herein.

3.3 PREPARATION
Before applying the paint, the various surfaces shall be prepared as described below:

.1 Drywall: Cut out scratches, cracks and abrasions in surfaces and adjoining trim as required. Fill with patching compound. Finish flush with adjoining surface and sand smooth and even when dry. Prime surface to show defects, if any. Continue painting only after defects are corrected.

.2 Wood: Surfaces to be painted shall be clean and free of loose dirt, dust or grit before painting is started. Remove loose or peeling paint and apply undercoat over bare wood. Knots, pitch streaks and sappy spots shall be first cleaned of residue and touched up with shellac where the finish coat is paint or enamel. Putty nail holes, cracks, etc., in woodwork after the first coat is applied. Paint tops, bottoms, and edges of doors as specified for faces of same after doors are fitted.

.3 Prepare all surfaces in accordance with MPI Architectural Painting Manual.

3.4 APPLICATION
.1 Use method of paint application generally as accepted by the trade method.

.2 Painting coats specified are intended to cover surfaces satisfactorily when applied in strict accordance with recommendations. Apply each coat at the proper consistency.

.3 Sand lightly and dust between coats to achieve required finish.

.4 Do not apply finishes on surfaces that are not sufficiently dry. Each coat of finish should be dry and hard before a following coat is applied unless the manufacturer's directions state otherwise.

.5 Back prime interior woodwork which is to receive a paint or enamel finish upon arrival at the job site with enamel undercoater paint. Finish tops of cabinet and projecting ledges, both above and below sightlines as specified for surrounding surfaces.

.6 Immediately after fitting and sanding and before hanging, seal the entire door with undercoater, stain or varnish as specified, including the top, bottom, opening and hardware recess edges. Finish with at least two coats of good quality oil based paint, varnish or lacquer as specified.

.7 Paint mechanical and electrical equipment, pipes conduit, hangers, ducts and access panels in rooms scheduled to be painted.

.8 Paint exposed steel framing, decking, joists and bracing in rooms scheduled to be painted.

.9 Apply paint and decorating material in a workmanlike manner using skilled and trade qualified applicators as noted under Quality Assurance.

.10 Minimum painting standards shall be in accordance with MPI Architectural Painting Specification Manual Premium Grade finish requirements.

.11 Paint all surfaces requiring paint or stain finish to minimum MPI Architectural Painting Specification Manual finish requirements with application methods in accordance with best trade practices for type and application of materials used.

.12 Apply paint and coatings within an appropriate time frame after cleaning when environmental conditions encourage flash-rusting, rusting, contamination or the manufacturer's paint specifications require earlier applications.

.13 Painting coats specified are intended to cover surfaces satisfactorily when applied at proper consistency and in accordance with manufacturer's recommendations.

.14 Tint each coat of paint progressively lighter to enable confirmation of number of coats.

.15 Apply a minimum of four coats of paint where deep or bright colours are used to achieve satisfactory results.

.16 Sand and dust between each coat to provide an anchor for next coat and to remove defects visible from a distance up to 1000mm (39").

.17 Prime coat of stain or varnish finishes may be reduced in accordance with manufacturer's directions.

3.5 CLEANING

.1 Upon completion, remove from the building materials and debris created by this work. During the progress and on completion of the work carefully clean and remove paint from adjoining surfaces, hardware, glass, etc. The whole shall be left in perfect condition. Touch up and make good any paint work damaged by other trades.

END OF SECTION 09 91 00