



**Public Works and  
Government Services Canada**

Requisition Number: EZ 899-17226/B

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**SPECIFICATIONS for:**

**Surrey Federal Operations Building  
Partial Demolition**

**Issued for 100%**

**October 28, 2016**

**Project No: R.078656.001**

**APPROVED BY:**

  
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Regional Manager, AES

2016-11-29.


Date

  
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2016-11-27.

Date

**TENDER:**

  
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2016-11-21

Date

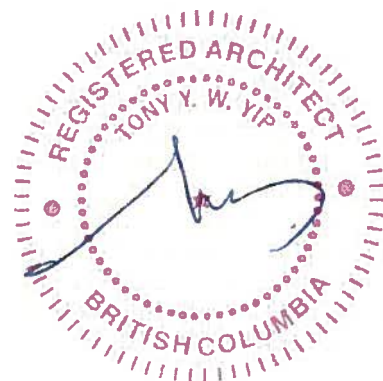


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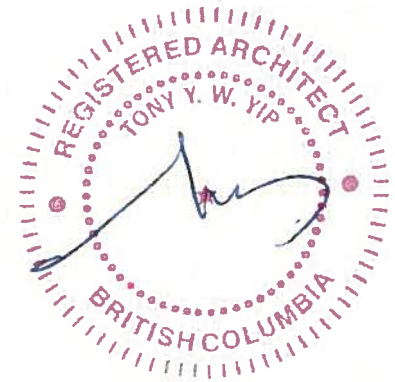
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END OF SECTION 00 00 10





## 1.0 GENERAL

### 1.1 CODES

- .1 Perform work in accordance with National Building Code for Canada 2015, Workers' Compensation Board of BC, BC Building Code 2012 and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .2 Meet or exceed requirements of specified standards, codes and referenced documents.

### 1.2 DESCRIPTION OF WORK

- .1 Work under this Contract comprises, but is not limited to, the provision of all labor, materials, services and equipment necessary to carry out demolition work for the Surrey Federal Operations Building in Surrey, BC. This generally includes non-structural partial demolition of existing tenant space at main floor, 2<sup>nd</sup> floor and the 3<sup>rd</sup> floor, including but not necessarily limited to removal of existing suspended ceiling, walls, mechanical and electrical fixtures, interior windows and doors, millwork, flooring, etc, all as more fully described in the Tender Documents.
- .2 The full scope of work is intended to be carried out in 2 phases.
  - .1 Phase 1: Carry out partial demolition to the main floor. The building is fully occupied by existing tenants on the 2<sup>nd</sup> and 3<sup>rd</sup> floors during the full duration of Phase 1. Maintain necessary emergency egress and general access to the floors above at all times.
  - .2 Phase 2: Carry out partial demolition to the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> floor upon complete move out of the 2<sup>nd</sup> and 3<sup>rd</sup> floor tenants. The Contractor will be notified 6 weeks in advance of handover of the project areas to the Contractor.

### 1.3 CONTRACT DOCUMENTS

- .1 The Contract documents, drawings and specifications are intended to complement each other.
- .2 Drawings are, in general, diagrammatic and are intended to indicate the scope and general arrangement of the work.

### 1.4 TIME OF COMPLETION

- .1 Commence work immediately upon official notification of acceptance of offer and complete by July 31<sup>st</sup>, 2017 according to the following phasing schedule.
  - .1 Phase 1 : Commence work immediately upon official notification of acceptance of offer and complete within four (4) weeks.
  - .2 Phase 2 : Commence work immediately upon handover of the vacated project area and complete the work within six (6) weeks after commencement of Phase 2, which is anticipated to be on or around May 31<sup>st</sup>, 2017. As necessary, the handover date may have to be deferred for up to two additional months and the Contractor shall have allowed for in his/her bid all costs associated with the possibility of extension of the contract.

### 1.5 HOURS OF WORK

- .1 All work which generates excessive noise, including cutting and coring, hammer drills and power activated fastening shall be executed outside of the normal operating hours. Normal operating hours is defined as 6:30 a.m. to 5:30 p.m. weekdays. Coordination with CRA and BGIS for after-hours access must be made as well. Alarm points and systems will be activated for the entire site. This hours of work applies to Phase 1 work only when 2<sup>nd</sup> and 3<sup>rd</sup> floors are occupied.

1.6 WORK SCHEDULE

- .1 Carry out work as follows:
  - .1 Within 3 (three) working days after Contract award, provide a “phasing bar chart” and a schedule showing anticipated progress stages and final completion of the work within the time period required by the Contract documents. Indicate the following:
    - .1 Submission of shop drawings, product data, MSDS sheets and samples.
    - .2 Commencement and completion of work of each section of the specifications or trades for each phase as outlined.
    - .3 Final completion date within the time period required by the Contract documents.
  - .2 Do not change approved Schedule without notifying Departmental Representative.
  - .3 Interim reviews of work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of Departmental Representative.

1.7 COST BREAKDOWN

- .1 Before submitting the first progress claim, submit a breakdown of the Contract price in detail as directed by the Departmental Representative and aggregating Contract price. After approval, the cost breakdown will form the basis of progress payments.
- .2 Provide separate breakout price for remove and dispose of all existing furniture on second and third floor including the removal of electrical related to furniture. (Refer to reference drawings for furniture layout)

1.8 CODE, BYLAWS, STANDARDS

- .1 Perform work in accordance with the National Building Code of Canada (NBCC) 2015, BC Building Code 2012, and other indicated Codes, Construction Standards and/or any other Code or Bylaw of local application.
- .2 Comply with applicable local bylaws, rules and regulations enforced at the location concerned.
- .3 Meet or exceed requirements of Contract documents, specified standards, codes and referenced documents.
- .4 In any case of conflict or discrepancy, the most stringent requirements shall apply.

1.9 DOCUMENTS REQUIRED

- .1 Maintain one copy each of the following at the job site:
  - .1 Contract drawings.
  - .2 Contract specifications.
  - .3 Addenda to Contract documents.
  - .4 Copy of work schedule.
  - .5 Reviewed shop drawings.
  - .6 Change orders.
  - .7 Other modifications to Contract.
  - .8 Field test reports.
  - .9 One set of record drawings and specifications for “as-built” purposes.
  - .10 National Building Code of Canada 2010.
  - .11 Current construction standards of workmanship listed in technical Sections.
  - .12 Building Safety Plan.



1.10 REGULATORY REQUIREMENTS

- .1 Submit, obtain and pay for the Building Permit, Occupancy Permit, Certificates, Licenses and other Trades Permits required by City of Surrey, provincial or federal authorities to complete the work.
- .2 Provide inspection authorities with plans and information required for issue of acceptance certificates.
- .3 Furnish inspection certificates in evidence that the work installed conforms to the requirements of the authority having jurisdiction.

1.11 CONTRACTOR'S USE OF SITE

- .1 Use of site:
  - .1 Exclusive and complete for execution of work.
  - .2 Assume responsibility for assigned premises for performance of this work.
  - .3 Be responsible for coordination of all work activities on site, including the work of other contractors engaged by the Departmental Representative.
  - .4 Cooperate with and coordinate construction/demolition activities with Building property manager, BGIS.
  - .5 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .2 Perform work in accordance with Contract documents. Ensure work is carried out in accordance with approved schedules.
- .3 Do not unreasonably encumber site with material or equipment.

1.12 EXAMINATION

- .1 Examine site and be familiar and conversant with existing conditions likely to affect work.

1.13 EXISTING SERVICES

- .1 Where Work involves breaking into or connecting to existing services, carry out work as directed in Section 01 14 00 – Work Restrictions.
- .2 Record locations of maintained, re-routed and abandoned service lines.
- .3 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.14 LOCATION OF EQUIPMENT AND FIXTURES

- .1 Not Used.

1.15 CUTTING AND PATCHING

- .1 Cut existing surfaces as required to accommodate new work.
- .2 Remove items so shown or specified.
- .3 Do not cut, bore, or sleeve load-bearing members.
- .4 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .5 Fit work airtight to pipes, sleeves, ducts and conduits.
- .6 Conceal pipes, ducts and wiring in raised floors, wall and ceiling construction of finished areas except where indicated otherwise.

- .7 Patch and make good surfaces cut, damaged or disturbed, to Departmental Representative's approval. Match existing material, colour, finish and texture.
- .8 Making good is defined as matching construction and finishing materials and the adjacent surfaces such that there is no visible difference between existing and new surfaces when viewed from 1.5 metres in ambient light, and includes painting the whole surface to the next change in plane.

#### 1.16 SETTING OUT OF WORK

- 1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .2 Provide devices needed to lay out and construct work.
- .3 Supply such devices as templates required to facilitate Departmental Representative's inspection of work.

#### 1.17 ACCEPTANCE OF SUBTRADES

- 1 Each trade shall examine surfaces prepared by others and job conditions which may affect his work, and shall report defects to the Departmental Representative. Commencement of work shall imply acceptance of prepared work or substrate surfaces.

#### 1.18 QUALITY OF WORK

- .1 Ensure that quality workmanship is performed through use of skilled tradesmen, under supervision of qualified journeyman.
- .2 The workmanship, erection methods and procedures to meet minimum standards set out in the National Building Code of Canada 2015 and Construction Standards as specified herein.
- .3 In cases of dispute, decisions as to standard or quality of work rest solely with the Departmental Representative, whose decision is final.

#### 1.19 WORKS COORDINATION

- .1 Coordinate work of sub-trades:
  - .1 Designate one person to be responsible for review of contract documents and shop drawings and managing coordination of Work.
- .2 Convene meetings between subcontractors whose work interfaces and ensure awareness of areas and extent of interface required.
  - .1 Provide each subcontractor with complete plans and specifications for Contract, to assist them in planning and carrying out their respective work.
  - .2 Develop coordination drawings when required, illustrating potential interference between works of various trades and distribute to affected parties.
    - .1 Pay particularly close attention to overhead work above ceilings and within or near to building structural elements.
    - .2 Identify on coordination drawings, building elements, services lines, rough-in points and indicate location services entrance to site.
  - .3 Facilitate meeting and review coordination drawings. Ensure subcontractors agree and sign off on drawings.
  - .4 Publish minutes of each meeting.
  - .5 Plan and coordinate work in such a way to minimize quantity of service line offsets.
  - .6 Submit copy of coordination drawings and meeting minutes to Departmental Representative for information purposes.
- .3 Submit shop drawings and order of prefabricated equipment or rebuilt components only after

- coordination meeting for such items has taken place.
- .4 Work cooperation:
    - .1 Ensure cooperation between trades in order to facilitate general progress of Work and avoid situations of spatial interference.
    - .2 Ensure that each trade provides all other trades reasonable opportunity for completion of Work and in such a way as to prevent unnecessary delays, cutting, patching and removal or replacement of completed work.
    - .3 Ensure disputes between subcontractors are resolved.
  - .5 Departmental Representative is not responsible for, or accountable for extra costs incurred as a result of Contractor's failure to coordinate Work.
  - .6 Maintain efficient and continuous supervision.

#### 1.20 APPROVAL OF SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- .1 In accordance with Section 01 33 00, submit the requested shop drawings, product data, MSDS sheets and samples indicated in each of the technical Sections.
- .2 Allow sufficient time for the following:
  - .1 Review of product data.
  - .2 Approval of shop drawings.
  - .3 Review of re-submission.
  - .4 Ordering of approved material and/or products.

#### 1.21 PROJECT MEETINGS

- .1 Contractor shall arrange project meetings on-site and assume responsibility for setting times and distributing minutes.
- .2 Departmental Representative will arrange pre-construction meeting. Contractor is responsible to record and issue meeting minutes two (2) days after the meeting.

#### 1.22 TESTING AND INSPECTION

- .1 Requirements for inspection and testing to verify conformance of work to specification is to be carried out by testing service or laboratory approved by the Departmental Representative.
- .2 The Departmental Representative may require, and pay for, inspection and testing services to verify conformance of Contractor's work to specification.
- .3 Where tests or inspections by designated testing laboratory reveal work is not in accordance with the Contract requirements, Contractor shall pay costs for all tests or inspections that Departmental Representative has paid for to verify defective and corrected work.
- .4 Pay costs for uncovering and making good work associated with inspection and testing as in 1.22.3 above.
- .5 Provide Departmental Representative with 2 copies of testing laboratory reports as soon as they are available.

#### 1.23 AS-BUILT DOCUMENTS

- .1 Keep one set of current white prints of all contract drawings and all addenda, revisions, clarifications, change orders, and reviewed shop drawings in the site office; and have them available at all times for inspection by the Consultant.

- .2 As the Work progresses, maintain accurate records to show all deviations from the Contract documents. Note on as-built specifications, drawings and shop drawings as changes occur.
- .3 At completion of the Work, produce mark-up drawings showing existing remaining conditions after demolition.
- .4 Refer to Section 01 78 00 – Close-out Submittals.

1.24 CLEANING

- .1 Refer to Section 01 74 11 - Cleaning.

1.25 DUST CONTROL

- .1 Provide temporary dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of work and public.
- .2 Protect furnishings and equipment within work area with 0.102 mm thick polyethylene film during construction.
- .3 Maintain protection until such work is complete.

1.26 ENVIRONMENTAL PROTECTION

- .1 Prevent extraneous materials from contaminating air beyond construction area, by providing temporary enclosures during work.
- .2 Do not dispose of waste or volatile materials into water courses, storm or sanitary sewers.
- .3 Ensure proper disposal procedures in accordance with all applicable territorial regulations.

1.27 MAINTENANCE MATERIALS, SPECIAL TOOLS AND SPARE PARTS

- .1 Not used

1.28 ADDITIONAL DRAWINGS

- .1 The Departmental Representative may furnish additional drawings for clarification. These additional drawings have the same meaning and intent as if they were included with drawings referred to in the Contract Documents. Documents will only be distributed in electronic format.

1.29 BUILDING SMOKING ENVIRONMENT

- .1 Smoking within the building and within 7.5m of all air intakes is not permitted.

1.30 SYSTEM OF MEASUREMENT

- .1 The metric system of measurement (SI) will be employed on this Contract.

1.31 FAMILIARIZATION WITH SITE

- .1 Before submitting tender, visit site as indicated in tender documents and become familiar with all conditions likely to affect the cost of the work.

1.32 SECURITY REQUIREMENTS

- .1 Refer to Section 01 14 00.

1.33 SUBMISSION OF TENDER

- .1 Submission of a tender is deemed to be confirmation of the fact that the Tenderer has analyzed the Contract documents and inspected the site, and is fully conversant with all conditions.

## 1.0 GENERAL

### 1.1 FACILITY OPERATIONS AND SECURITY PROCEDURES

- .1 Cooperate with and coordinate construction/demolition activities with Building Property Manager firm, BGIS.

### 1.2 ACCESS AND EGRESS

- .1 Construct and maintain temporary "access to" and "egress from" work areas as indicated in this document, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.
- .2 Refer to drawing for designated site access, site office and laydown area.

### 1.3 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2 Maintain existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security as per Departmental Representatives direction. This must also be coordinated with CRA for impact to occupants.
- .4 Closures: protect work temporarily until permanent enclosures are completed.
- .5 Second (2<sup>nd</sup>) and Third (3<sup>rd</sup>) Floor of the existing building will be occupied by government staff during entire construction period.
- .6 Coordinate with Departmental Representative in scheduling operations to minimize conflict and to maintain the portion of main floor area that is required for access and egress of both 2<sup>nd</sup> and 3<sup>rd</sup> Floor occupants.

### 1.4 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to building operations, occupants, and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.

### 1.5 EXISTING SERVICES

- .1 Notify, Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Departmental Representative 3 working days of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Carry out interruptions after normal working hours. The maximum number of shut-downs is limited to 4 for the duration of the project.
  - .1 Optimize and plan shut-downs so that services are restored in time for normal building operation hours. Coordinate all shut-downs with utility providers, Departmental Representative, building users, and the property manager.
  - .2 Contractor shall be held responsible for damages to facility equipment as the result of service shut-downs.
  - .3 Contractor shall be held responsible for any and all unscheduled shut-downs of building utilities and services.

- .4 Contractor will not be allowed to connect to existing building data and communication services.
- .5 Submit a "Fire Alarm Bypass" request to Departmental Representative 72 hours in advance for approval.
- .6 Obtain permission from Departmental Representative for access to restricted areas outside the construction zones 24 hours in advance.
- .3 Provide for personnel and vehicular traffic.
- .4 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

**1.6 SPECIAL REQUIREMENTS**

- .1 Carry out noise generating Work outside the normal operating hours. Normal operating hours is defined as per Section 10 11 00 paragraph 1.5.1.
  - .1 Means and procedures of controlling and isolating other construction noise affecting occupied areas shall be responsibility of the Contractor and approved by the Departmental Representative.
  - .2 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.

**1.7 SECURITY**

- .1 Access to rooms 119, 132, 133, 134 on the 1<sup>st</sup> floor, and the 2<sup>nd</sup> and 3<sup>rd</sup> floors is prohibited. Prior arrangement must be made with Departmental Representative and BGIS if access is proved to be necessary for execution of work, and provided that there is no alternative.

**1.8 BUILDING SMOKING ENVIRONMENT**

- .1 Comply with smoking restrictions. Smoking is not permitted within the building.

**1.9 NOISE CONTROL**

- .1 Refer to section 01 11 00 clause 1.6 for policy for excessive noise and vibration generation.
- .2 Means and procedures of controlling and isolating construction noise affecting occupied areas shall be responsibility of the contractor and approval of Departmental Representative.
- .3 Level of work noise must be maintained at a level no greater than 87 dBA, over an eight-hour period.
- .4 If work noise level exceeds 87 dBA, reduce noise either by using engineering devices to reduce or by shortening the duration of exposure.
  - .1 Refer to Table of maximum duration of exposure to sound levels higher than 87dBA permitted by Canada Occupational Health and Safety Regulations:

Sound Level in dBA	Maximum Duration of Exposure in Hours per Employee per 24-Hour Period	Sound Level in dBA	Maximum Duration of Exposure in Hours per Employee per 24-Hour Period
87	8.0	104	0.16
88	6.4	105	0.13
89	5.0	106	0.10
90	4.0	107	0.080
91	3.2	108	0.064
92	2.5	109	0.050

93	2.0		110	0.040
94	1.6		111	0.032
95	1.3		112	0.025
96	1.0		113	0.020
97	0.80		114	0.016
98	0.64		115	0.013
99	0.50		116	0.010
100	0.40		117	0.008
101	0.32		118	0.006
102	0.25		119	0.005
103	0.20		120	0.004

- .5 All Hoarding enclosing noise generating activities must be acoustically sealed to structure. All temporary construction doors to be solid core wood door installed with door seal, door bottom and threshold.
- .6 If requested by Departmental Representative, Contractor is to provide site monitoring, demonstrate and record noise level at occupied area.

END OF SECTION 01 14 00





## 1.0 GENERAL

### 1.1 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are coordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.
- .11 Do not proceed with work until relevant submissions are reviewed by Departmental Representative.

### 1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 When specified in the contract document, submit drawings stamped and signed by professional engineer registered or licensed in Province of British Columbia of Canada.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow 3 days for Departmental Representative's review of each submission, unless noted otherwise.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change

- Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
  - .7 Accompany submissions with transmittal letter, in duplicate, containing:
    - .1 Date.
    - .2 Project title and number.
    - .3 Contractor's name and address.
    - .4 Identification and quantity of each shop drawing, product data and sample.
    - .5 Other pertinent data.
  - .8 Submissions include:
    - .1 Date and revision dates.
    - .2 Project title and number.
    - .3 Name and address of:
      - .1 Subcontractor.
      - .2 Supplier.
      - .3 Manufacturer.
    - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
    - .5 Details of appropriate portions of Work as applicable:
      - .1 Fabrication.
      - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
      - .3 Setting or erection details.
      - .4 Capacities.
      - .5 Performance characteristics.
      - .6 Standards.
      - .7 Operating weight.
      - .8 Wiring diagrams.
      - .9 Single line and schematic diagrams.
      - .10 Relationship to adjacent work.
  - .9 After Departmental Representative's review, distribute copies.
  - .10 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
  - .11 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
  - .12 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
    - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
    - .2 Testing must have been within 3 years of date of contract award for project.

**SUBMITTAL PROCEDURES**

- .13 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit electronic copies of manufacturer's instructions for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .21 The review of shop drawings by Departmental Representative is for sole purpose of ascertaining conformance with general concept.
  - .1 This review shall not mean that Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
  - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.
- .22 Shop drawings format larger than 11" x17" (275mm x 430mm) must be submitted with hard copies together with electronic format. Submit sufficient copies such that Departmental Representative will keep 6 copies plus contractor's distribution and maintenance manual.
- .23 Electronic submissions will only be reviewed and returned electronically. No hardcopies will be returned to contractor.

### 1.3 SAMPLES

- .1 Submit for review samples in triplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's business address.
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

### 1.4 MOCK-UPS

- .1 Erect mock-ups in accordance with 01 45 00 - Quality Control.

### 1.5 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copy of colour digital photography in jpg format, standard resolution monthly with progress statement and as directed by Departmental Representative.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Viewpoints and their locations as reasonably determined by Departmental Representative.
- .4 Provide photographic documentation of adjacent existing conditions prior to commencement of construction for determining and accidental damage as a result of contractor's work.
- .5 Frequency of photographic documentation: monthly as directed by Departmental Representative.
  - .1 Upon completion of: demolition, framing and services before concealment of Work, and as directed by Departmental Representative.

### 1.6 TEST RESULTS & INSPECTION REPORTS

- .1 Submit electronic copies of test results and inspection reports required as noted in each section of specifications.

## 1.0 GENERAL

- .1 This Section includes submittal requirements and procedures to comply with Canada Green Building Council (CaGBC) LEED for Commercial Interiors CI 1.0 (2007) prerequisites and credits for the Project to simulate LEED Silver score level.

## 1.1 REFERENCES

- .1 American Society of Heating Refrigeration and Air-Conditioning (ASHRAE)
  - .1 ASHRAE 52.2-99, Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size (ANSI approved).
- .2 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI Version 1.0- LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Guide For Commercial Interiors.
- .3 Carpet and Rug Institute (CRI)
  - .1 CRI Green Label Indoor Air Quality Test Program - Green Label Testing Program.
- .4 United States Forest Stewardship Council
  - .1 Principles and Criteria for Forest Stewardship-00.
- .5 Green Seal Environmental Standards
  - .1 Standard GC-03-93, Anti-Corrosive Paints.
  - .2 Standard GS-11-97, Architectural Paints.
- .6 South Coast Air Quality Management District (SCAQMD), California State
  - .1 SCAQMD Rule 1113-04, Architectural Coatings.
  - .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.
- .7 Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
  - .1 IAQ Guideline for Occupied Buildings Under Construction.
- .8 United States Federal Trade Commission (US Federal Trade Commission)
  - .1 16 CFR 260.7 Trade Commission Guidelines for the Use of Environmental Marketing Claims.

## 1.2 DEFINITIONS

- .1 FSC - Forest Stewardship Council.
- .2 SFM - Sustainable Forest Management.
- .3 CFC - Chlorofluorocarbons.
- .4 Chain-of-Custody Certification - certificates signed by manufacturers certifying that wood used to make products was obtained from FSC certified forests. Certificates include evidence that mill is certified for chain-of-custody by FSC-accredited certification body.
- .5 HCFC - Hydro Chlorofluorocarbons.
- .6 LEED - Leadership in Energy and Environmental Design.
- .7 IAQ - Indoor Air Quality.

**LEED REQUIREMENTS**

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit required letters, calculations, spreadsheets and LEED templates.
- .3 Submit Project Materials and Cost Data: provide statement for total cost for building materials used for Project. Include statement indicating total cost of mechanical and electrical components.

2.0 PRODUCTS

2.1 RECYCLED CONTENT OF MATERIALS

- .1 Materials and Resources Credits MRc4.1 Recycled Content: 10% (post-consumer + 1/2 post-industrial) and MRc4.2 Recycled Content: 20% (post-consumer + 1/2 post-industrial). Supply building materials with a minimum post-consumer recycled content of 10% of cost of project materials or with a minimum post-consumer recycled content plus 1/2 pre-consumer recycled content of 20% of cost of project materials.
  - .1 Cost of post-consumer recycled content of material will be determined by dividing weight of post-consumer recycled content in material by total weight of materials and multiplying by cost of material.
  - .2 Cost of post-consumer recycled content plus one-half of pre-consumer recycled content of materials will be determined by dividing weight of post-consumer recycled content plus one-half of pre-consumer recycled content in material by total weight of material and multiplying by cost of material.
  - .3 Do not include mechanical and electrical components in calculations.
  - .4 Recycled content of materials in accordance with Federal Trade Commission's Guide for the Use of Environmental Marketing Claims, 16 CFR 260.7.

2.2 REGIONAL MATERIALS

- .1 Materials and Resources Credit MRc5.1 Regional Materials: 20% and Manufactured Regionally. Supply 20% of building materials (by cost) that are regionally manufactured.
- .2 Materials and Resources Credit MRc5.2 Regional Materials: 10% Extracted and Manufactured Regionally. Regionally manufactured materials required by paragraph 2.3.1, supply 50% (by cost) of building materials that are regionally extracted, harvested, or recovered.

2.3 CERTIFIED WOOD

- .1 Materials and Resources Credit MRc7 Certified Wood. Supply a minimum of 50% (by cost) of wood-based materials that are produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC Principles and Criteria.
  - .1 Wood-based materials include but not limited to the following materials when made from made wood, engineered wood products, or wood-based panel products:
    - .1 Rough carpentry.

3.0 EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT

- .1 Credit MRc2.1 Construction Waste Management: Divert 50% From Landfill and MRc2.2 Divert 75% From Landfill. Comply with Section 01 74 19 – Waste Management and Disposal.

3.2 CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT

- .1 Credit EQc3.1 Construction IAQ Management Plan: During Construction. Comply with SMACNA IAQ Guideline for Occupied Buildings under Construction.

- .2 Obtain written approval from Departmental Representative to operate permanent HVAC systems during construction. Cover all exhaust and return air grille during demolition and construction work. Install MERV-8 filter media in accordance with ASHRAE 52.2 at return-air inlets.

END OF SECTION 01 35 21





## 1.0 GENERAL

### 1.1 REFERENCES

- .1 Government of Canada.
  - .1 Canada Labour Code - Part II
  - .2 Canada Occupational Health and Safety Regulations.
- .2 National Building Code of Canada (NBC 2015):
  - .1 Part 8, Safety Measures at Construction and Demolition Sites.
- .3 The Canadian Electric Code (as amended)
- .4 Canadian Standards Association (CSA) as amended.
  - .1 CSA Z797-2009 Code of Practice for Access Scaffold.
  - .2 CSA S269.1-1975 (R2003) Falsework for Construction Purposes.
  - .3 CSA S350-M1980 (R2003) Code of Practice for Safety in Demolition of Structures.
  - .4 CSA Z1006-10 Management of Work in Confined Spaces.
  - .5 CSA Z462- Workplace Electrical Safety Standard.
- .5 National Fire Code of Canada 2010 (as amended)
  - .1 Part 5 – Hazardous Process and Operations and Division B as applicable and required.
- .6 American National Standards Institute (ANSI):
  - .1 ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems.
- .7 Province of British Columbia:
  - .1 Workers Compensation Act Part 3 – Occupational Health and Safety.
  - .2 Occupational Health and Safety Regulations.

### 1.2 RELATED SECTIONS

- .1 Refer to the following current NMS sections as required:
  - .1 Construction Progress Schedules Bar (Gantt) Chart Section 01 32 16.7
  - .2 Submittals Procedures Section 01 33 00
  - .3 Temporary Facilities Section 01 51 00
  - .4 Temporary Barriers and Enclosures Section 01 56 00

### 1.3 WORKERS' COMPENSATION BOARD COVERAGE

- .1 Comply fully with the Workers' Compensation Act, regulations and orders made pursuant thereto, and any amendments up to the completion of the work.
- .2 Maintain Workers' Compensation Board coverage during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.

### 1.4 COMPLIANCE WITH REGULATIONS

- .1 PSPC may terminate the Contract without liability to PSPC where the Contractor, in the opinion of PWGSC, refuses to comply with a requirement of the Worker's Compensation Act or the Occupational Health and Safety Regulations.
- .2 It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the work as required by the Worker's Compensation Act or the Occupational Health and Safety Regulations.

### 1.5 SUBMITTALS

- .1 Submit to Departmental Representative submittals listed for review. In accordance with Section 01 33 00
- .2 Work effected by submittal shall not proceed until review is complete.
- .3 Submit the following:
  - .1 Site Specific Health and Safety Plan.
  - .2 Copies of reports or directions issued by Federal and Provincial health and safety inspectors.
  - .3 Copies of incident and accident reports.
  - .4 Complete set of current Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.
  - .5 Emergency Procedures.
- .4 The Departmental Representative will review the Contractor's Site-Specific Health and Safety Plan and emergency procedures, and provide comments to the Contractor within 5 days after receipt of the plan. Revise the plan as appropriate and resubmit to Departmental Representative.
- .5 Medical surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of work, and submit additional certifications for any new site personnel to Departmental Representative.
- .6 Submission of the Site Specific Health and Safety Plan, and any revised version, to the Departmental Representative is for information and reference purposes only. It shall not:
  - .1 Be construed to imply approval by the Departmental Representative.
  - .2 Be interpreted as a warranty of being complete, accurate and legislatively compliant.
  - .3 Relieve the Contractor of his legal obligations for the provision of health and safety on the project.

#### 1.6 RESPONSIBILITY

- .1 Assume responsibility as the Prime Contractor for work under this contract.
- .2 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .3 Comply with and enforce compliance by employees with safety requirements of Contract documents, applicable Federal, Provincial, Territorial and local statutes, regulations, and ordinances, and with Site Specific Health and Safety Plan.

#### 1.7 HEALTH AND SAFETY COORDINATOR

- .1 The Health and Safety Coordinator must:
  - .1 Be responsible for completing all health and safety training, and ensuring that personnel that do not successfully complete the required training are not permitted to enter the site to perform work.
  - .2 Be responsible for implementing, daily enforcing, and monitoring the Site Specific Health and Safety Plan.
  - .3 Be on site during execution of work.

#### 1.8 GENERAL CONDITIONS

- .1 Provide safety barricades and lights around work site as required to provide a safe working environment for workers and protection for pedestrian and vehicular traffic.

- .2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.
  - .1 Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel, and temporary lighting as required.
  - .2 Secure site at night time [or provide security guard] as deemed necessary to protect site against entry.

#### 1.9 PROJECT/SITE CONDITIONS

- .1 Work at site will involve contact with:
  - .1 Multi-employer work site.
  - .2 Federal employees and general public.

#### 1.10 UTILITY CLEARANCES

- .1 The Contractor is solely responsible for all utility detection and clearances prior to starting the work.
- .2 The Contractor will not rely solely upon the References Drawings or other information provided for utility locations.

#### 1.11 REGULATORY REQUIREMENTS

- .1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at site.
- .2 In event of conflict between any provision of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Departmental Representative will advise on the course of action to be followed.

#### 1.12 WORK PERMITS

- .1 Obtain specialty trade permits related to project before start of work.

#### 1.13 FILING OF NOTICE

- .1 The General Contractor is to complete and submit a Notice of Project as required by Provincial authorities.
- .2 Provide copies of all notices to the Departmental Representative.

#### 1.14 HEALTH AND SAFETY PLAN

- .1 Conduct a site-specific hazard assessment based on review of Contract documents, required work, and project site. Identify any known and potential health risks and safety hazards.
- .2 Prepare and comply with a site-specific project Health and Safety Plan based on hazard assessment, including, but not limited to, the following:
  - .1 Primary requirements:
    - .1 Contractor's safety policy.
    - .2 Identification of applicable compliance obligations.
    - .3 Definition of responsibilities for project safety/organization chart for project.
    - .4 General safety rules for project.
    - .5 Job-specific safe work, procedures.
    - .6 Inspection policy and procedures.
    - .7 Incident reporting and investigation policy and procedures.
    - .8 Occupational Health and Safety Committee/Representative procedures.
    - .9 Occupational Health and Safety meetings.
    - .10 Occupational Health and Safety communications and record keeping procedures.
  - .2 Summary of health risks and safety hazards resulting from analysis of hazard assessment,

- with respect to site tasks and operations which must be performed as part of the work.
- .3 List hazardous materials to be brought on site as required by work.
  - .4 Indicate Engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.
  - .5 Identify personal protective equipment (PPE) to be used by workers.
  - .6 Identify personnel and alternates responsible for site safety and health.
  - .7 Identify personnel training requirements and training plan, including site orientation for new workers.
- .3 Develop the plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors are included in the hazard assessment and are reflected in the plan.
  - .4 Revise and update Health and Safety Plan as required, and re-submit to the Departmental Representative.
  - .5 Departmental Representative's review: the review of Site Specific Health and Safety Plan by Public Service and Procurement Canada (PSPC) shall not relieve the Contractor of responsibility for errors or omissions in final Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract documents.

#### 1.15 EMERGENCY PROCEDURES

- .1 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (i.e. names/telephone numbers) of:
  - .1 Designated personnel from own company.
  - .2 Regulatory agencies applicable to work and as per legislated regulations.
  - .3 Local emergency resources.
  - .4 Departmental Representative and site staff.
- .2 Include the following provisions in the emergency procedures:
  - .1 Notify workers and the first-aid attendant, of the nature and location of the emergency.
  - .2 Evacuate all workers safely.
  - .3 Check and confirm the safe evacuation of all workers.
  - .4 Notify the fire department or other emergency responders.
  - .5 Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.
  - .6 Notify Departmental Representative and site staff.
- .3 Provide written rescue/evacuation procedures as required for, but not limited to:
  - .1 Work at high angles.
  - .2 Work in confined spaces or where there is a risk of entrapment.
  - .3 Work with hazardous substances.
  - .4 Underground work.
  - .5 Work on, over, under and adjacent to water.
  - .6 Workplaces where there are persons who require physical assistance to be moved.
- .4 Design and mark emergency exit routes to provide quick and unimpeded exit.

#### 1.16 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information system (WHMIS) regarding use, handling, storage and disposal of hazardous materials, and regarding labeling and provision of material Safety Data Sheets (MSDS) acceptable to the Departmental Representative and in accordance with the Canada Labour Code.

- .2 Where use of hazardous and toxic products cannot be avoided:
  - .1 Advise Departmental Representative beforehand of the product(s) intended for use. Submit applicable MSDS and WHMIS documents as per Section 01 33 00.
  - .2 In conjunction with Departmental Representative, schedule to carry out work during "off hours" when tenants have left the building.
  - .3 Provide adequate means of ventilation in accordance with Section 01 51 00.
  - .4 The contractor shall ensure that the product is applied as per manufacturers recommendations.
  - .5 The contractor shall ensure that only pre-approved products are brought onto the work site in an adequate quantity to complete the work.

1.17 ASBESTOS HAZARD

- .1 Carry out any activities involving asbestos in accordance with applicable Provincial/Territorial Regulations.
- .2 Removal and handling of asbestos will be performed as indicated in Sections 02 41 16 and 02 82 10, 02 82 11, 02 82 12.

1.18 PCB REMOVALS

- .1 Mercury-containing fluorescent tubes and ballasts which contain polychlorinated biphenyls (PCBs) are classified as hazardous waste.
- .2 Remove, handle, transport and dispose of as indicated in Section 02 84 00.

1.19 REMOVAL OF LEAD-CONTAINING PAINTS

- .1 All paints containing TCLP lead concentrations above 5 ppm are classified as hazardous.
- .2 Carry out demolition and/or remediation activities involving lead-containing paints in accordance with applicable Provincial/Territorial Regulations.

1.20 ELECTRICAL SAFETY REQUIREMENTS

- .1 Comply with authorities and ensure that, when installing new facilities or modifying existing facilities, all electrical personnel are completely familiar with existing and new electrical circuits and equipment and their operation.
  - .1 Before undertaking any work, coordinate required energizing and de-energizing of new and existing circuits with Departmental Representative.
  - .2 Maintain electrical safety procedures and take necessary precautions to ensure safety of all personnel working under this Contract, as well as safety of other personnel on site.

1.21 ELECTRICAL LOCKOUT

- .1 Develop, implement and enforce use of established procedures to provide electrical lockout and to ensure the health and safety of workers for every event where work must be done on any electrical circuit or facility.
- .2 Prepare the lockout procedures in writing, listing step-by-step processes to be followed by workers, including how to prepare and issue the request/authorization form. Have procedures available for review upon request by the Departmental Representative.
- .3 Keep the documents and lockout tags at the site and list in a log book for the full duration of the Contract. Upon request, make such data available for viewing by Departmental Representative or by any authorized safety representative.

1.22 OVERLOADING

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

1.23 FALSEWORK

- .1 Design and construct falsework in accordance with CSA S269.1-1975 (R2003).

1.24 SCAFFOLDING

- .1 Design, construct and maintain scaffolding and a rigid, secure, and safe manner, in accordance with CSA Z797-2009 and B.C. Occupational Health and Safety Regulations.

1.25 CONFINED SPACES

- .1 Carry out work in confined spaces in compliance with Provincial/Territorial Regulations.

1.26 POWDER-ACTUATED DEVICES

- .1 Use powder-actuated devices in accordance with ANSI A10.3 only after receipt of written permission from the Departmental Representative.

1.27 FIRE SAFETY AND HOT WORK

- .1 Obtain Departmental Representative's authorization before any welding, cutting or any other hot work operations can be carried out on site.
- .2 Hot work includes cutting/melting with use of torch, flame heating roofing kettles, or other open flame devices and grinding with equipment which produces sparks.

1.28 FIRE SAFETY REQUIREMENTS

- .1 Store oily/paint-soaked rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
- .2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.
- .3 Portable gas and diesel fuel tanks are not permitted on most federal work sites. Approval from the DR is required prior to any gas or diesel tank being brought onto the work site.

1.29 FIRE PROTECTION AND ALARM SYSTEM

- .1 Fire protection and alarm systems shall not be:
  - .1 Obstructed.
  - .2 Shut off.
  - .3 Left inactive at the end of a working day or shift.
- .2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.
- .3 Be responsible/liable for costs incurred from the fire department, the building owner and the tenants, resulting from false alarms.

1.30 UNFORESEEN HAZARDS

- .1 Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of the work, immediately stop work and advise the Departmental Representative verbally and in writing.

1.31 POSTED DOCUMENTS

- .1 Post legible versions of the following documents on site:
  - .1 Health and Safety Plan.
  - .2 Sequence of work.
  - .3 Emergency procedures.
  - .4 Site drawing showing project layout, locations of the first-aid station, evacuation route and marshalling station, and the emergency transportation provisions.
  - .5 Notice of Project.
  - .6 Floor plans or site plans.
  - .7 Notice as to where a copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.
  - .8 Workplace Hazardous Materials Information System(WHMIS) documents.
  - .9 Material Safety Data Sheets (MSDS).
  - .10 List of names of Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.
- .2 Post all Material Safety Data Sheets (MSDS) on site, in a common area, visible to all workers and in locations accessible to tenants when work of this Contract includes construction activities adjacent to occupied areas.
- .3 Postings should be protected from the weather, and visible from the street or the exterior of the principal construction site shelter provided for workers and equipment, or as approved by the Departmental Representative.

1.32 MEETINGS

- .1 Attend health and safety pre-construction meeting and all subsequent meetings called by the Departmental Representative.

1.33 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by the Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance with health and safety issues identified.
- .3 The Departmental Representative may issue a "stop work order" if non-compliance of health and safety regulations is not corrected immediately or within posted time. The General Contractor/subcontractors will be responsible for any costs arising from such a "stop work order".





1.0 GENERAL

1.1 ACCESS AND DELIVERY

- .1 Only the designated entrance may be used for access to building.
  - .1 Maintain for duration of Contract.
  - .2 Make good damage resulting from Contractor's use.
- .2 The loading dock at main level will be available as primary access for the delivery and removal of materials.
- .3 Space for waste bins, Contractor's trailers, laydown area will be limited to the designated area outside the loading dock at the south parking area as shown on drawing.

1.2 CONSTRUCTION PARKING

- .1 No construction parking is allowed on site.

1.3 STORAGE FACILITIES

- .1 Confine work and operations of employees to areas indicated on Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work or existing structure or elements.
- .3 Provide and pay for all off-site storage as required. Refer to drawing for location of Contractor's site storage and lay-down area.
- .4 Refer to Section 01 74 19 Waste Management and Disposal for separate waste and recycle bin.

1.4 TEMPORARY CONSTRUCTION POWER

- .1 Designated electrical power circuits and lighting in existing building may be used for construction purposes at no extra cost, provided that warranties are not affected thereby and electrical components used for temporary power are replaced when damaged. Do not use emergency power or UPS panels for this purpose.
- .2 There is no guarantee that uninterrupted supply and full demand is available for construction. Contractor can use site available power at their own discretion.

1.5 WATER SUPPLY

- .1 Water supply is available in existing building and may be used for construction purposes at no cost.
- .2 There is no guarantee that uninterrupted supply and full demand is available for construction.

1.6 SANITARY FACILITIES

- .1 Contractor may use existing washrooms within the demolition area prior to its demolition. Contractor will then provide temporary washroom facilities for their own use. Construction Staff will not be allowed to use washrooms on other floors.

1.7 HEATING AND VENTILATION

- .1 Do not begin work until arrangements have been made with the Departmental Representative for protection of on-floor heating, ventilating and air conditioning.
- .2 If there is any dirt in the heating and ventilation system, at the completion of work, it will be the Contractor's responsibility to return system to its original state in accordance with the Departmental Representative's directions.
- .3 Prevent dust and odour migration to other occupied areas.
  - .1 Do not deactivate HVAC system to occupied floors. Purge air from construction floors only when directed by Departmental Representative, where dust and fumes will be generated.
  - .2 Change filters in existing HVAC system frequently.

1.8 SITE OFFICE

- .1 Site office setup is not a requirement in this contract.

1.9 ELEVATORS

- .1 Contractor is not required to use the elevators. In the event roof access from upstairs is required, stairs must be used.

1.10 HOARDING

- .1 Prior to all demolition and construction, install plywood/GWB hoarding to block all doorways that leads from elevator lobby and express route into the construction zone.
- .2 All hoarding to stay in place in good condition after demolition work is completed.

1.11 REMOVAL OF TEMPORARY FACILITIES

- .1 Remove temporary facilities from site after completion of work.

1.12 SIGNS AND NOTICES

- .1 Signs and notices for safety and instruction shall be in both official languages or graphic symbols conforming to CAN/CSA-Z321.

1.13 CLEAN-UP

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt of mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable.
- .4 Stack stored new or salvaged material not in construction facilities.
- .5 At completion of Project: Remove and dispose of all debris, thoroughly clean and restore site to condition found at commencement of Work. Repair and make good to all damage caused by construction activities.

## 1.0 GENERAL

### 1.2 REFERENCES

- .1 Canadian General Standards Board (CGSB)
  - .1 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
  - .2 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
- .2 Canadian Standards Association (CSA International)
  - .1 CSA-O121-M1978 R2003, Douglas Fir Plywood.
- .3 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as Of: May 14, 2004.

### 1.3 INSTALLATION AND REMOVAL

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

### 1.4 HOARDING

- .1 Refer to Section 01 51 00 Temporary Facilities.

### 1.5 GUARD RAILS AND BARRICADES

- .1 'NOT USED'

### 1.6 WEATHER ENCLOSURES

- .1 Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.
- .2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.
- .3 Design enclosures to withstand wind pressure and snow loading.

### 1.7 ACCESS TO BUILDING

- .1 Maintain access roads and sidewalk onsite for existing occupants.

### 1.8 PUBLIC TRAFFIC FLOW

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

### 1.9 FIRE ROUTES

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.
- .2 Maintain clearance for all egress routes.

### 1.10 PROTECTION OFF-SITE AND PUBLIC PROPERTY

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

### 1.11 PROTECTION OF BUILDING FINISHES

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with Departmental Representative locations and installation schedule 3 days prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.

1.12 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for recycling in accordance with Section 01 74 19 - Waste Management And Disposal.

END OF SECTION 01 56 00

1.0 GENERAL

1.1 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit written request in advance of cutting or alteration which affects:
  - .1 Structural integrity of elements of project.
  - .2 Integrity of weather-exposed or moisture-resistant elements.
  - .3 Efficiency, maintenance, or safety of operational elements.
  - .4 Visual qualities of sight-exposed elements.
  - .5 Work of Owner or separate contractor.
- .3 Include in request:
  - .1 Identification of project.
  - .2 Location and description of affected Work.
  - .3 Statement on necessity for cutting or alteration.
  - .4 Description of proposed Work, and products to be used.
  - .5 Alternatives to cutting and patching.
  - .6 Effect on Work of Owner or separate contractor.
  - .7 Written permission of affected separate contractor.
  - .8 Date and time work will be executed.

1.2 MATERIALS

- .1 Required for original installation.
- .2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

1.3 PREPARATION

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.
- .3 Beginning of cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

1.4 EXECUTION

- .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.

- .6 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .7 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- .8 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
- .9 Restore work with new products in accordance with requirements of Contract Documents.
- .10 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .11 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material in accordance with Section 07 84 00 - Firestopping, full thickness of the construction element.
- .12 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.
- .13 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

**1.6 WASTE MANAGEMENT AND DISPOSAL**

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

END OF SECTION 01 73 00

1.0 GENERAL

1.1 REFERENCES

- .1 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions "C", In Effect as Of: May 14, 2004.

1.2 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
- .3 Clear snow and ice from access to building, bank/pile snow in designated areas only.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris.
- .6 Provide and use marked separate bins for recycling. Refer to Section 01 74 19 - Waste Management and Disposal.
- .7 Dispose of waste materials and debris off site.
- .8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.3 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris including that caused by Owner or other Contractors.

- .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Clean elevator lobby and fire egress on main floor.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for recycling in accordance with Section 01 74 19 - Waste Management And Disposal.

END OF SECTION 01 74 11



## 1.0 GENERAL REQUIREMENTS

### 1.1 RELATED WORK

- .1 Refer to every technical section for waste management and disposal.

### 1.2 DEFINITIONS

- .1 Waste Audit (WA): relates to projected waste generation. Involves controlled separation of waste.
- .2 Waste Reduction Workplan (WRW): a written report which addresses opportunities for reduction, re-use or recycling of materials.
- .3 Materials Source Separation Program (MSSP): consists of a series of ongoing activities to separate re-usable and recyclable waste material into material categories from other types of waste at point of generation.

### 1.3 MATERIALS SOURCE SEPARATION

- .1 Before project start-up, prepare Materials Source Separation Program. Provide separate containers for re-usable and/or recyclable materials.
- .2 Implement Materials Source Separation Program for waste generated on project in compliance with approved methods and as approved by Departmental Representative.
- .3 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .4 Locate separated materials in areas which minimize material damage .

### 1.4 DIVERSION OF MATERIALS

- .1 Create a list of materials to be separated from the general waste stream and stockpiled in separate containers, to the approval of the Departmental Representative and consistent with applicable fire regulations.
  - .1 Mark containers
  - .2 Provide instructions on disposal practices.

### 1.5 STORAGE, HANDLING AND APPLICATION

- .1 Do work in compliance with Waste Reduction Work plan.
- .2 Handle waste materials not re-used, salvaged, or recycled in accordance with appropriate regulations and codes.
- .3 Materials in separated condition: collect, handle, store on site, and transport off-site to an approved and authorized recycling facility.
- .4 Materials must be immediately separated into required categories for re-use or recycling.
- .5 Unless specified otherwise, materials for removal become the Contractor's property.
- .6 On-site sale of salvaged/recyclable material is not permitted.
- .7 Provide Departmental Representative with receipts indicating quantity of material delivered to landfill.

- .8 Provide Departmental Representative with receipts indicating quantity and type of materials sent for recycling.

END OF SECTION 01 74 19

1.0 GENERAL

1.1 SECTION INCLUDES

- .1 Administrative procedures preceding preliminary and final inspections of Work.

1.2 RELATED SECTIONS

- .1 Section 01 78 00 - Closeout Submittals.

1.3 INSPECTION AND DECLARATION

- .1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
  - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
  - .2 Request Departmental Representative's Inspection.
  - .3 Departmental Representative's Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
  - .4 Completion: submit written certificate that following have been performed:
    - .1 Work has been completed and inspected for compliance with Contract Documents.
    - .2 Defects have been corrected and deficiencies have been completed.
    - .3 Equipment and systems have been tested, adjusted, and balanced and are fully operational.
    - .4 Certificates required by authorities having jurisdiction.
    - .5 Commissioning of all systems: Final commissioning reports have been submitted to the Departmental Representative.
    - .6 Operation of systems have been demonstrated to Owner's personnel.
    - .7 Work is complete and ready for Final Inspection.

END OF SECTION 01 77 00



1.0 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 77 00 - Closeout Procedures

1.2 'AS CONSTRUCTED' DRAWINGS AND SAMPLES

- .1 In addition to requirements in General Conditions, maintain at the site one record copy of:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Change Orders and other modifications to the Contract.
  - .5 Reviewed shop drawings, product data, and samples.
  - .6 Field test records.
  - .7 Inspection certificates.
  - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.
- .6 Provide an electronic copy of as constructed drawings.

1.3 RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of black line opaque drawings, provided by Departmental Representative.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
  - .1 Measured depths of elements of foundation in relation to finish first floor datum.
  - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
  - .4 Field changes of dimension and detail.
  - .5 Changes made by change orders.
  - .6 Details not on original Contract Drawings.
  - .7 References to related shop drawings and modifications.

- .5 Specifications: legibly mark each item to record actual construction, including:
  - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
  - .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

#### 1.4 MATERIALS AND FINISHES

- .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional Requirements: as specified in individual specifications sections.

#### 1.5 WARRANTIES AND BONDS

- .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work.
- .4 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
- .5 Verify that documents are in proper form, contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal.

END OF SECTION 01 78 00

## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Section 07 84 00 Fire Stopping

### 1.2 REFERENCES

- .1 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI (Latest Version), LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Guide For Commercial Interiors.
- .2 CSA International
  - .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.

### 1.3 ACTION & INFORMATIONS SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures and 01 74 19 - Waste Management Disposal.
- .2 Sustainable Design Submittals:
  - .1 LEED Canada CI Version 1.0 Submittals: in accordance with Section 01 35 19 - LEED Requirements.
  - .2 Construction Waste Management:
    - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
    - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.

### 1.4 SITE CONDITIONS

- .1 If material resembling spray or trowel-applied asbestos or other designated substance listed as hazardous is encountered, stop work, take preventative measures, and notify Departmental Representative immediately.
  - .1 Proceed only after receipt of written instructions have been received from Consultant.
- .2 Notify Departmental Representative before disrupting building access or services.

### 1.5 HEALTH AND SAFETY

- .1 Do Construction Occupational Health and Safety in accordance with Section 01 35 33- Health and Safety Requirements and the Workers' Compensation Board of BC latest regulations.

### 1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste management materials and recycling in accordance with Section 01 74 19 – Waste Management and Disposal.

## 2.0 PRODUCTS

- .1 Not used.

## 3.0 EXECUTION

### 3.1 EXAMINATION

- .1 Inspect building with Departmental Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.

- .3 Notify and obtain approval of utility companies before starting demolition.
- .4 Disconnect, cap, plug or divert, as required, existing utilities within the building where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.
  - .1 Immediately notify Departmental Representative and the Owner concerned in case of damage to any utility or service designated to remain in place.
  - .2 Immediately notify the Departmental Representative should uncharted utility or service be encountered, and await instruction in writing regarding remedial action.

### 3.2 PREPARATION

- .1 Protection of In-Place Conditions:
  - .1 Prevent movement, settlement, or damage to adjacent structures, and utilities.
  - .2 Keep noise, dust, and inconvenience to occupants to minimum.
  - .3 Protect building systems, services and equipment.
  - .4 Provide temporary dust screens, covers, railings, supports and other protection as required.
  - .5 Do Work in accordance with Section 01 35 33 - Health and Safety Requirements.

### 3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for recycling in accordance with Section 01 74 19 - Waste Management and Disposal and 01 35 21 - LEED Requirements.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION 02 41 99



1.0 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Demolition for Minor Works Section 02 41 99

1.2 REFERENCES

- .1 LEED Canada-CI (latest version), LEED Green Building Rating System and Reference Guide For Commercial Interiors.
- .2 CSA International
- .1 CSA B111- 1974(R2003), Wire Nails, Spikes and Staples.
  - .2 CSA O121- 08, Douglas Fir Plywood.
  - .3 CAN/CSA-O141- 05, Softwood Lumber.
  - .4 CSA O151- 09, Canadian Softwood Plywood.
  - .5 CAN/CSA-O325.0- 07, Construction Sheathing.
- .3 Forest Stewardship Council (FSC)
- .1 FSC-STD-01-001- 2004, FSC Principle and Criteria for Forest Stewardship.
  - .2 FSC-STD-20-002- 2004, Structure and Content of Forest Stewardship Standards V2-1.
  - .3 FSC Accredited Certified Bodies.
- .4 Green Seal Environmental Standards (GS)
- .1 GS-11- 2008, 2nd Edition, Paints and Coatings.
- .5 National Lumber Grades Authority (NLGA)
- .1 Standard Grading Rules for Canadian Lumber 2000.
- .6 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
- .1 SCAQMD Rule 1113- A2007, Architectural Coatings.

1.3 ACTION & INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Sustainable Design Submittals:
- .1 LEED Canada-CI (latest version) Submittals: in accordance with Section 01 35 21 - LEED Requirements.
  - .2 Construction Waste Management:
    - .1 Submit project Waste Reduction Workplan highlighting recycling and salvage requirements.
    - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.
  - .3 Regional Materials: submit evidence that project incorporates required percentage of 20 % of regional materials and products, showing their cost, distance from project site to furthest site of extraction or manufacture, and total cost of materials for project.
  - .4 Low-Emitting Materials:
    - .1 Submit listing of paints and coatings used in building, comply with VOC and chemical component limits or restriction requirements.
    - .2 Submit listing of composite wood products used in building, stating that they contain no added urea-formaldehyde resins, and laminate adhesives used in building, stating that they contain no urea-formaldehyde.

#### 1.4 QUALITY ASSURANCE

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood identification: by grade mark in accordance with applicable CSA standards.
- .3 Plywood, OSB and wood based composite panel construction sheathing identification: by grademark in accordance with applicable CSA standards.

#### 1.5 DELIVERY, STORAGE & HANDLING

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .2 Storage and Handling Requirements:
  - .1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect wood from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.
- .3 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 35 21 - LEED Requirements.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 19 - Waste Management and Disposal and Section 01 35 21 - LEED Requirements.

#### 2.0 PRODUCTS

##### 2.1 MATERIALS

- .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
  - .1 CAN/CSA-O141.
  - .2 NLGA Standard Grading Rules for Canadian Lumber.
- .2 Furring, blocking, nailing strips, grounds, rough bucks, curbs, fascia backing and sleepers:
  - .1 Board sizes: "Standard" or better grade.
  - .2 Dimension sizes: "Standard" light framing or better grade.
  - .3 Post and timbers sizes: "Standard" or better grade.
- .3 Panel Materials:
  - .1 Douglas fir plywood (DFP): to CSA O121, standard construction.
    - .1 Urea-formaldehyde free.
  - .2 Canadian softwood plywood (CSP): to CSA O151, standard construction.
    - .1 Urea-formaldehyde free.
  - .3 Plywood, OSB and wood based composite panels: to CAN/CSA-O325.
    - .1 Urea-formaldehyde free.
- .4 Wood Preservative:
  - .1 Surface-applied wood preservative: clear coloured, or 5% pentachlorophenol solution, water repellent preservative.
  - .2 Pentachlorophenol use is restricted to building components that are in ground contact and

subject to decay or insect attack only. Where used, pentachlorophenol-treated wood must be covered with two coats of an appropriate sealer.

- .3 Structures built with wood treated with pentachlorophenol and inorganic arsenicals must not be used for storing food nor should the wood come in contact with drinking water.
- .5 Primers: in accordance with manufacturer's recommendations for surface conditions:
  - .1 Primer: VOC limit 100 g/L maximum to GS-11 and SCAQMD Rule 1113.
  - .2 Paint: VOC limit 50 g/L maximum to GS-11 SCAQMD Rule 1113.
  - .3 Coating: VOC limit 100 g/L maximum to GS-11 SCAQMD Rule 1113.

## 2.2 ACCESSORIES

- .1 Fasteners: to CAN/CSA-G164, for interior highly humid areas pressure-preservative, fire-retardant treated lumber.
- .2 Nails, spikes and staples: to CSA B111.
- .3 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
- .4 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs recommended for purpose by manufacturer.

## 3.0 EXECUTION

### 3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for rough carpentry installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### 3.2 INSTALLATION

- .1 Comply with requirements of NBC, supplemented by the following paragraphs.
- .2 Align and plumb faces of furring and blocking to tolerance of 1:600.
- .3 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .4 Use caution when working with particle board. Use dust collectors and high quality respirator masks.
- .5 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .6 Countersink bolts where necessary to provide clearance for other work.

### 3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.

- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
  
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal and Section 01 35 21 - LEED Requirements.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION 06 08 99

## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 09 21 16 – Gypsum Board Assembly

### 1.2 REFERENCES

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .2 Underwriter's Laboratories of Canada (ULC)
  - .1 ULC-S115-1995, Fire Tests of Fire stop Systems.

### 1.3 DEFINITIONS

- .1 Fire Stop Material: device intended to close off opening or penetration during fire or materials that fill openings in wall or floor assembly where penetration is by cables, cable trays, conduits, ducts and pipes and poke-through termination devices, including electrical outlet boxes along with their means of support through wall or floor openings.
- .2 Single Component Fire Stop System: fire stop material that has Listed Systems Design and is used individually without use of high temperature insulation or other materials to create fire stop system.
- .3 Multiple Component Fire Stop System: exact group of fire stop materials that are identified within Listed Systems Design to create on site fire stop system.
- .4 Tightly Fitted; (ref: NBC Part 3.1.9.1.1): penetrating items that are cast in place in buildings of noncombustible construction or have "0" annular space in buildings of combustible construction.
  - .1 Words "tightly fitted" should ensure that integrity of fire separation is such that it prevents passage of smoke and hot gases to unexposed side of fire separation.

### 1.4 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 35 33 Health and Safety Requirements.
- .3 Shop Drawings:
  - .1 Submit shop drawings to show location, proposed material, reinforcement, anchorage, fastenings and method of installation.
  - .2 Construction details should accurately reflect actual job conditions.
- .4 Quality assurance submittals: submit following in accordance with Section 01 33 00 – Submittal Procedure.
  - .1 Test reports: in accordance with CAN-ULC-S101 for fire endurance and CAN-ULC-S102 for surface burning characteristics.
    - .1 Submit certified test reports from approved independent testing laboratories, indicating compliance of applied fire stopping with specifications for specified performance characteristics and physical properties.
  - .2 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

- .3 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, and cleaning procedures.
- .4 Manufacturer's Field Reports: submit to manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in PART 3 - FIELD QUALITY CONTROL.

### 1.5 QUALITY ASSURANCE

- .1 Qualifications:
  - .1 Installer: company specializing in fire stopping installations with 5 years' documented experience.
- .2 Site Meetings: as part of Manufacturer's Services described in PART 3 - FIELD QUALITY CONTROL, schedule site visits, to review Work, at stages listed.
  - .1 After delivery and storage of products, and when preparatory Work is complete, but before installation begins.
  - .2 Twice during progress of Work at 25% and 60% complete.
  - .3 Upon completion of Work, after cleaning is carried out.

### 1.6 DELIVERY, STORAGE AND HANDLING

- .1 Packing, shipping, handling and unloading:
  - .1 Deliver, store and handle materials in accordance with Section 01 11 00 General Instructions.
  - .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.
  - .3 Deliver materials to the site in undamaged condition and in original unopened containers, marked to indicate brand name, manufacturer, ULC markings.
- .2 Storage and Protection:
  - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Replace defective or damaged materials with new.
- .3 Waste Management and Disposal:
  - .1 Separate waste materials for recycling in accordance with Section 01 74 19 – Waste Management and Disposal.

## 2.0 PRODUCTS

### 2.1 SUSTAINABLE REQUIREMENTS

- .1 Materials and products in accordance with Section 01 35 21 – LEED Requirements: Construction
- .2 Do verification requirements in accordance with Section 01 35 21 - LEED Requirements: Contractor's Verification.

### 2.2 MATERIALS

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

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

### 3.0 EXECUTION

#### 3.1 MANUFACTURER'S INSTRUCTIONS

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

#### 3.2 PREPARATION

- .1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials.
  - .1 Ensure that substrates and surfaces are clean, dry and frost free.
- .2 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer's instructions.
- .3 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier.
- .4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces.

#### 3.3 INSTALLATION

- .1 Install fire stopping and smoke seal material and components in accordance with manufacturer's certified tested system listing.
- .2 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.
- .3 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.
- .4 Tool or trowel exposed surfaces to neat finish.
- .5 Remove excess compound promptly as work progresses and upon completion.

### 3.4 SEQUENCES OF OPERATION

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

### 3.6 FIELD QUALITY CONTROL

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

### 3.7 CLEANING

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

### 3.8 SCHEDULE

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



1.0 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 06 08 99 Rough Carpentry for Minor Works
- .2 Section 09 22 16 Non-Structural Metal Framing

1.2 REFERENCES

- .1 ASTM International
  - .1 ASTM C 475-02(2007), Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - .2 ASTM C 514-04(2009e1), Standard Specification for Nails for the Application of Gypsum Board.
  - .3 ASTM C 557-03(2009)e1, Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
  - .4 ASTM C 840-08, Standard Specification for Application and Finishing of Gypsum Board.
  - .5 ASTM C 954-07, Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
  - .6 ASTM C 1002-07, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
  - .7 ASTM C 1047-09, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
  - .8 ASTM C 1280-99, Standard Specification for Application of Gypsum Sheathing.
  - .9 ASTM C 1177/C 1177M-08, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
  - .10 ASTM C 1178/C 1178M-08, Standard Specification for Glass Mat Water-Resistant Gypsum Backing Board.
  - .11 ASTM C 1396/C 1396M-09a, Standard Specification for Gypsum Wallboard.
- .2 Association of the Wall and Ceilings Industries International (AWCI)
  - .1 AWCI Levels of Gypsum Board Finish-97.
- .3 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI Version 1.0-2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System and Reference Package For Commercial Interiors.
- .4 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-51.34-M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
  - .2 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.
- .5 Green Seal Environmental Standards (GS)
  - .1 GS-11-2008, 2nd Edition, Paints and Coatings.
- .6 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
  - .1 SCAQMD Rule 1113-A2007, Architectural Coatings.
  - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

- .7 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S102-07, Standard Method of Test of Surface Burning Characteristics of Building Materials and Assemblies.

### 1.3 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Sustainable Design Submittals.
  - .1 Construction Waste Management:
    - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
    - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 50 of construction wastes were recycled or salvaged.
  - .2 Recycled Content:
    - .1 Submit listing of recycled content products used, including details of required percentages or recycled content materials and products, showing their costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.
  - .3 Low-Emitting Materials:
    - .1 Submit listing of adhesives and sealants and used in building, showing compliance with VOC and chemical component limits or restriction requirements.

### 1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labeled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
  - .1 Store gypsum board assemblies materials level off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect gypsum board assemblies from nicks, scratches, and blemishes.
  - .3 Protect from weather, elements and damage from construction operations.
  - .4 Handle gypsum boards to prevent damage to edges, ends or surfaces.
  - .5 Protect prefinished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.
  - .6 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan related to Work of this Section.
- .5 Packaging Waste Management: remove for reuse of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### 1.5 AMBIENT CONDITIONS

- .1 Maintain temperature 10 degrees C minimum (21 degrees C maximum) for 48 hours prior to and during application of gypsum boards and joint treatment, and for 48 hours minimum after completion of joint treatment.
- .2 Apply board and joint treatment to dry, frost free surfaces.

- .3 Ventilation: ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

## 2.0 PRODUCTS

### 2.1 MATERIALS

- .1 Standard board: to ASTM C 1396/C 1396M regular, 12.7mm and 16 mm thick and Type X, 12.7 mm and 16 mm thick, 1200 mm wide x maximum practical length, ends square cut, edges tapered.
- .2 Resilient clips and drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .3 Nails: to ASTM C 514.
- .4 Steel drill screws: to ASTM C 1002.
- .5 Stud adhesive: to CAN/CGSB-71.25.
- .6 Laminating compound: as recommended by manufacturer, asbestos-free.
- .7 Casing beads, corner beads, control joints and edge trim: to ASTM C 1047, metal, zinc-coated by hot-dip process, 0.5 mm base thickness, perforated flanges, one piece length per location.
- .8 Sealants: Joint Sealants.
  - .1 VOC limit 250 g/L maximum to SCAQMD Rule 1168.
  - .2 Acoustic sealant: Joint Sealants.
- .9 Polyethylene: to CAN/CGSB-51.34, Type 2.
- .10 Insulating strip: rubberized, moisture resistant, 3 mm thick cork closed cell neoprene strip, 12 mm wide, with self-sticking permanent adhesive on one face, lengths as required.
- .11 Joint compound: to ASTM C 475, asbestos-free.

## 3.0 EXECUTION

### 3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for gypsum board assemblies installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### 3.2 ERECTION

- .1 Do application and finishing of gypsum board to ASTM C 840 except where specified otherwise.

### 3.3 APPLICATION

- .1 Apply gypsum board after bucks, anchors, blocking, sound attenuation, electrical and mechanical work have been approved.
- .2 Apply single or double layer gypsum board to wood furring or framing using screw fasteners for first layer, screw fasteners for second layer. Maximum spacing of screws 300 mm on centre.
  - .1 Single-Layer Application:
    - .1 Apply gypsum board on ceilings prior to application of walls to ASTM C 840.
    - .2 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.
  - .2 Double-Layer Application:
    - .1 Install gypsum board for base layer and exposed gypsum board for face layer.
    - .2 Apply base layer to ceilings prior to base layer application on walls; apply face layers in same sequence. Offset joints between layers at least 250 mm.
    - .3 Apply base layers at right angles to supports unless otherwise indicated.
    - .4 Apply base layer on walls and face layers vertically with joints of base layer over supports and face layer joints offset at least 250 mm with base layer joints.
- .3 Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, and ducts, in partitions where perimeter sealed with acoustic sealant.
- .4 Install gypsum board on walls vertically to avoid end-butt joints.
- .5 Install gypsum board with face side out.
- .6 Do not install damaged or damp boards.
- .7 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

### 3.4 INSTALLATION

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm on centre.
- .2 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .3 Construct control joints of preformed units set in gypsum board facing and supported independently on both sides of joint.
- .4 Provide continuous polyethylene dust barrier behind and across control joints.
- .5 Locate control joints at changes in substrate construction at approximate 10 m spacing on long corridor runs at approximate 15 m spacing on ceilings.
- .6 Install control joints straight and true.
- .7 Construct expansion joints as detailed, at building expansion and construction joints. Provide continuous dust barrier.

- .8 Install expansion joint straight and true.
- .9 Splice corners and intersections together and secure to each member with 3 screws.
- .10 Install access doors to electrical and mechanical fixtures specified in respective sections.
- .11 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
- .12 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with AWCI Levels of Gypsum Board Finish:
  - .1 Levels of finish:
    - .1 At typical wall locations. Level 4: embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; surfaces smooth and free of tool marks and edges.
- .13 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- .14 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
- .15 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .16 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

### 3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
  - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials for recycling in accordance with Section 01 74 19 - Waste Management and Disposal and Section 01 35 21 - LEED Requirements.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

### 3.6 PROTECTION

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



1.0 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Rough Carpentry for Minor Works Section 06 08 99
- .2 Gypsum Board Assemblies Section 09 21 16

1.2 REFERENCES

- .1 ASTM International
  - .1 ASTM C 645- 00, Specification for Nonstructural Steel Framing Members.
  - .2 ASTM C 754- 00 , Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
- .2 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI Version 1.0-2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System and Reference Package For Commercial Interiors.
- .3 Green Seal Environmental Standards (GS)
  - .1 GS-11-2008, 2nd Edition, Paints and Coatings.
- .4 Environmental Choice Program (ECP).
  - .1 CCD-047a - 98, Paints - Surface Coatings.
  - .2 CCD-048- 98, Surface Coatings - Recycled Water-borne.
- .5 Association of Wall and Ceiling Contractors of BC (AWCC)
  - .1 Specification Standards Manual

1.3 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for gypsum board assemblies and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of British Columbia, Canada. Submit BCBC 2012 Schedule B and C-B and or model schedule B & C.
  - .2 Indicate system dimensions, framed opening requirements and tolerances, adjacent construction, anchor details anticipated deflection under load, affected related Work, weep drainage network, expansion and contraction joint location and details, and field welding required.
- .4 Sustainable Design Submittals.
  - .1 Construction Waste Management:
    - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
    - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 50 of construction wastes were recycled or salvaged.
  - .2 Recycled Content:
    - .1 Submit listing of recycled content products used, including details of required

percentages or recycled content materials and products, showing their costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.

- .3 Low-Emitting Materials:
  - .1 Submit listing of adhesives and sealants and used in building, showing compliance with VOC and chemical component limits or restriction requirements.

#### 1.4 QUALITY ASSURANCE

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

#### 1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 19 - Waste Management And Disposal.
- .2 Divert unused metal materials from landfill to metal recycling facility approved by Departmental Representative.

### 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 minimum 1.23 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 <sup>2</sup>  | 3.6 mm (9 ga.) diameter galvanized wire. |
| Up to 1.48 m <sup>2</sup> | 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 (20ga.) thick galvanized steel of same type as are the studs as blocking to support work of other sections.
- | Maximum Gypsum Board Thickness | Furring Spacing |
|--------------------------------|-----------------|
| Single 12.7mm board            | 400 mm          |
| Single 15.9mm board            | 600 mm          |
| Double layer                   | 400 mm          |

### 3.0 EXECUTION

#### 3.1 ERECTION

- .1 Fire Resistance Rated Walls: Comply with requirements of testing agency approved by the Consultant for wall systems detailed on Drawings.
- .2 Align partition tracks at floor and ceiling and secure at 600 mm on centre maximum.
- .3 Place studs vertically at on centre as detailed and not more than 50 mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions.
- .4 Erect metal studding to tolerance of 1:1000.
- .5 Attach studs to bottom and ceiling track using screws crimp method pop rivets.
- .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.
- .9 Install heavy gauge single jamb studs at openings.
- .10 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.
- .11 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.
- .12 Provide 40 mm stud or furring channel secured between studs for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails, attached to steel stud partitions.
- .13 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .14 Extend partitions to ceiling height except where noted otherwise on drawings.
- .15 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use 50 mm leg ceiling tracks.
- .16 Install continuous insulating strips to isolate studs from uninsulated surfaces.
- .17 Install two continuous beads of acoustical sealant insulating strip under studs and tracks around perimeter of sound control partitions.
- .18 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 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

### 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 AND SOFFIT SUSPENSION

- .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 19mm cold rolled channels, wire tie to top and parallel to main runner channels, extend 19mm channels minimum 300mm 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.

3.2 CLEANING

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



1.0 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 06 08 99 Rough Carpentry for Minor Works
- .2 Section 09 21 16 Gypsum Board Assemblies

1.2 REFERENCES

- .1 Department of Justice Canada (Jus)
  - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33
- .2 Environmental Protection Agency (EPA)
  - .1 EPA Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 - 1995, (for Surface Coatings).
- .3 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .4 Master Painters Institute (MPI)
  - .1 MPI Architectural Painting Specifications Manual, latest edition.
- .5 National Fire Code of Canada - 1995
- .6 Society for Protective Coatings (SSPC)
  - .1 SSPC Painting Manual, Volume Two, 8th Edition, Systems and Specifications Manual.
- .7 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.

1.3 QUALITY ASSURANCE

- .1 Qualifications:
  - .1 Contractor: minimum of five years proven satisfactory experience. Provide list of last three comparable jobs including, job name and location, specifying authority, and project manager.
  - .2 Journeymen: qualified journeymen who have "Tradesman Qualification Certificate of Proficiency" engaged in painting work.
  - .3 Apprentices: working under direct supervision of qualified trade's person in accordance with trade regulations.
- .2 Health and Safety:
  - .1 Do construction occupational health and safety in accordance with Section 01 35 33 – Health and Safety Requirements.
- .3 Construction requirements: in accordance with Section 01 35 231 – LEED Requirements.

1.4 SCHEDULING

- .1 Schedule painting operations to prevent disruption to occupants.

1.5 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:

- .1 Submit product data and instructions for each paint and coating product to be used.
- .2 Submit product data for the use and application of paint thinner.
- .3 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOCs during application.
- .3 Samples:
  - .1 Submit triplicates 200 x 300 mm sample panels of each paint, stain, or clear coating with specified paint or coating in colours, gloss/sheen and textures required to MPI Architectural Painting Specification Manual standards submitted on following substrate materials:
    - .1 10 mm hardboard plywood for finishes over wood surfaces.
    - .2 13 mm gypsum board for finishes over gypsum board and other smooth surfaces.
  - .3 Retain reviewed samples on-site to demonstrate acceptable standard of quality for appropriate on-site surface.
  - .4 Test reports: submit certified test reports for paint from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.
    - .1 Lead, cadmium and chromium: presence of and amounts.
    - .2 Mercury: presence of and amounts.
    - .3 Organochlorines and PCBs: presence of and amounts.
  - .5 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .6 Manufacturer's Instructions:
    - .1 Submit manufacturer's installation instructions.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Packing, Shipping, Handling and Unloading:
  - .1 Pack, ship, handle and unload materials in accordance with Section 01 11 00 – General Instructions.
- .2 Acceptance at Site:
  - .1 Identify products and materials with labels indicating:
    - .1 Manufacturer's name and address.
    - .2 Type of paint or coating.
    - .3 Compliance with applicable standard.
    - .4 Colour number in accordance with established colour schedule.
- .3 Remove damaged, opened and rejected materials from site.
- .4 Storage and Protection:
  - .1 Provide and maintain dry, temperature controlled, secure storage.
  - .2 Store materials and supplies away from heat generating devices.
  - .3 Store materials and equipment in well-ventilated area with temperature range 7 degrees C to 30 degrees C.
- .5 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
- .6 Keep areas used for storage, cleaning and preparation clean and orderly. After completion of

operations, return areas to clean condition.

- .7 Remove paint materials from storage only in quantities required for same day use.
- .8 Fire Safety Requirements:
  - .1 Provide one Type ABC fire extinguisher adjacent to storage area.
  - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
  - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.
- .9 Waste Management and Disposal:
  - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
  - .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
  - .3 Collect and separate for disposal paper, plastic, polystyrene corrugated cardboard and packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan (WMP).
  - .4 Separate for recycling and place in designated containers Steel, Metal, Plastic waste in accordance with Waste Management Plan (WMP).
  - .5 Place materials defined as hazardous or toxic in designated containers.
  - .6 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal, regulations.
  - .7 Ensure emptied containers are sealed and stored safely.
  - .8 Unused paint, coating materials must be disposed of at official hazardous material collections site as approved by Departmental Representative.
  - .9 Paint, stain and wood preservative finishes and related materials (thinners and solvents) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
  - .10 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
  - .11 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
  - .12 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground follow these procedures:
    - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out.
    - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
    - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
    - .4 Dispose of contaminants in approved legal manner in accordance with hazardous waste regulations.
    - .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
  - .13 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.
  - .14 Set aside and protect surplus and uncontaminated finish materials. Deliver to or arrange collection by organizations for verifiable re-use or re-manufacturing.

### 1.7 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
  - .1 Provide heating facilities to maintain ambient air and substrate temperatures above 10 degrees C for 24 hours before, during and after paint application until paint has cured sufficiently.
  - .2 Provide continuous ventilation for seven days after completion of application of paint.
  - .3 Coordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
  - .4 Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
  - .5 Provide minimum lighting level of 323 Lux on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
  - .1 Unless pre-approved written approval by Paint Inspection Agency Authority and product manufacturer, perform no painting when:
    - .1 Ambient air and substrate temperatures are below 10 degrees C.
    - .2 Substrate temperature is above 32 degrees C unless paint is specifically formulated for application at high temperatures.
    - .3 Substrate and ambient air temperatures are not expected to fall within MPI or paint manufacturer's prescribed limits.
    - .4 The relative humidity is under 85% or when the dew point is more than 3 degrees C variance between the air/surface temperature. Paint should not be applied if the dew point is less than 3 degrees C below the ambient or surface temperature. Use sling psychrometer to establish the relative humidity before beginning paint work.
    - .5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
    - .6 Ensure that conditions are within specified limits during drying or curing process, until newly applied coating can itself withstand 'normal' adverse environmental factors.
  - .2 Perform painting work when maximum moisture content of the substrate is below:
    - .1 Allow new concrete and masonry to cure minimum of 28 days.
    - .2 15% for wood.
    - .3 12% for plaster and gypsum board.
  - .3 Test for moisture using calibrated electronic Moisture Meter. Test concrete floors for moisture using "cover patch test".
  - .4 Test concrete, masonry and plaster surfaces for alkalinity as required.
- .3 Surface and Environmental Conditions:
  - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
  - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.
  - .3 Apply paint when previous coat of paint is dry or adequately cured.
- .4 Additional interior application requirements:
  - .1 Apply paint finishes when temperature at location of installation can be satisfactorily maintained within manufacturer's recommendations.
  - .2 Apply paint in occupied facilities during silent hours only. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.



## 2.0 PRODUCTS

### 2.1 MATERIALS

- .1 Materials and resources in accordance with Section 01 35 21 – LEED Requirements.
- .2 Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
- .3 Provide paint materials for paint systems from single manufacturer.
- .4 Only qualified products with E2 "Environmentally Friendly" rating are acceptable for use on this project.
- .5 Conform to latest MPI requirements for interior painting work including preparation and priming.
- .6 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI Architectural Painting Specification Manual "Approved Product" listing.
- .7 Linseed oil, shellac, and turpentine: highest quality product from approved manufacturer listed in MPI Architectural Painting Specification Manual, compatible with other coating materials as required.
- .8 Provide paint products meeting MPI "Environmentally Friendly" E2 ratings based on VOC (EPA Method 24) content levels.
- .9 Use MPI listed materials having minimum E2 rating where indoor air quality (odour) requirements exist.
- .10 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids:
  - .1 Water-based.
  - .2 Non-flammable.
  - .3 Manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
  - .4 Manufactured without compounds which contribute to smog in the lower atmosphere.
  - .5 Do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.
- .11 Formulate and manufacture water-borne surface coatings with no aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.
- .12 Flash point: 61.0 degrees C or greater for water-borne surface coatings and recycled water-borne surface coatings.
- .13 Ensure manufacture and process of both water-borne surface coatings and recycled water-borne surface coatings does not release:
  - .1 Matter in undiluted production plant effluent generating 'Biochemical Oxygen Demand' (BOD) in excess of 15 mg/L to natural watercourse or sewage treatment facility lacking secondary treatment.
  - .2 Total Suspended Solids (TSS) in undiluted production plant effluent in excess of 15 mg/L to natural watercourse or a sewage treatment facility lacking secondary treatment.
- .14 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes to meet minimum "Environmentally Friendly" E2 rating.

- .15 Recycled water-borne surface coatings must not contain:
  - .1 Lead in excess of 600.0 ppm weight/weight total solids.
  - .2 Mercury in excess of 50.0ppm weight/weight total product.
  - .3 Cadmium in excess of 1.0ppm weight/weight total product.
  - .4 Hexavalent chromium in excess of 3.0 ppm weight/weight total product.
  - .5 Organochlorines or polychlorinated biphenyls (PCBS) in excess of 1.0 ppm weight/weight total product.

2.2 COLORS

- .1 Color to hoarding to be off-white selected by Departmental Representative.
- .2 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.
- .3 Acceptable Manufacturers:
  - .1 ICI
  - .2 General Paint
  - .3 Cloverdale
  - .4 Benjamin Moore
  - .5 Sico 6000

2.3 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site. Obtain written approval from Departmental Representative for tinting of painting materials.
- .2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
- .3 Use and add thinner in accordance with paint manufacturer's recommendations. Do not use kerosene or similar organic solvents to thin water-based paints.
- .4 Thin paint for spraying in accordance with paint manufacturer's instructions.
- .5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.4 GLOSS/SHEEN RATINGS

- .1 Paint gloss is defined as sheen rating of applied paint, in accordance with following values:

	Gloss @ 60 degrees	Sheen @ 85 degrees
Gloss Level 1 Matte	Max.5	Max.10
Finish (flat) Gloss Level 2 -Velvet-Like Finish	Max.10	10 to 35
Gloss Level 3 -Eggshell Finish	10 to 25	10 to 35
Gloss Level 4 -Satin-Like Finish	20 to 35	Min.35
Gloss Level 5 -Traditional Semi-Gloss Finish	35 to 70	
Gloss Level 7 -High Gloss Finish	More than 85	

- .2 Gloss level ratings of painted surfaces as indicated.

## 2.5 INTERIOR PAINTING SYSTEMS –NEW CONSTRUCTION

- .1 Wood hoarding boards:
  - .1 INT 6.4R – latex semi-gloss finish, over latex primer.
- .2 Gypsum wall board hoarding boards: gypsum wallboard, drywall, "sheet rock type material", and textured finishes:
  - .1 INT 9.2A - Latex gloss level 3 finish (over latex sealer) for hoarding, typical.

## 2.6 SOURCE QUALITY CONTROL

- .1 Perform following tests on each batch of consolidated post-consumer material before surface coating is reformulated and canned. Testing by laboratory or facility which has been accredited by Standards Council of Canada.
  - .1 Lead, cadmium and chromium are to be determined using ICP-AES (Inductively Coupled Plasma - Atomic Emission Spectroscopy) technique no. 6010 as defined in EPA SW-846.
  - .2 Mercury is to be determined by Cold Vapour Atomic Absorption Spectroscopy using Technique no. 7471 as defined in EPA SW-846.
  - .3 Organochlorines and PCBs are to be determined by Gas Chromatography using Technique no. 8081 as defined in EPA SW-846.

## 3.0 EXECUTION

### 3.1 MANUFACTURER'S INSTRUCTIONS

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

### 3.2 GENERAL

- .1 Perform preparation and operations for interior painting in accordance with MPI Architectural Painting Specifications Manual except where specified otherwise.
- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.

### 3.3 EXAMINATION

- .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Departmental Representative damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .3 Maximum moisture content as follows:
  - .1 Stucco, plaster and gypsum board: 12%.
  - .2 Wood: 15%.

### 3.4 PREPARATION

- .1 Protection:
  - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Departmental Representative.

- .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
- .3 Protect factory finished products and equipment.
- .4 Protect passing pedestrians, building occupants and general public in and about the building.
  
- .2 Surface Preparation:
  - .1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
  - .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
  - .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
  
- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
  - .1 Remove dust, dirt, and other surface debris by wiping with dry, clean cloths or compressed air.
  - .2 Wash surfaces with a biodegradable detergent and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
  - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
  - .4 Allow surfaces to drain completely and allow to dry thoroughly.
  - .5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
  - .6 Use trigger operated spray nozzles for water hoses.
  - .7 Many water-based paints cannot be removed with water once dried. Minimize use of mineral spirits or organic solvents to clean up water-based paints.
  
- .4 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
  
- .5 Where possible, prime non-exposed surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
  - .1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
  - .2 Apply wood filler to nail holes and cracks.
  - .3 Tint filler to match stains for stained woodwork.
  
- .6 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
  
- .7 Do not apply paint until prepared surfaces have been accepted by Departmental Representative.

### 3.5 APPLICATION

- .1 Method of application to be as approved by Departmental Representative. Apply paint by brush, roller, air or airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.
  
- .2 Brush and Roller Application:
  - .1 Apply paint in uniform layer using brush and/or roller type suitable for application.

- .2 Work paint into cracks, crevices and corners.
  - .3 Paint surfaces and corners not accessible to brush using spray daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
  - .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple.
  - .5 Remove runs, sags and brush marks from finished work and repaint.
- .3 Spray application:
- .1 Provide and maintain equipment that is suitable for intended purpose, capable of atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
  - .2 Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
  - .3 Apply paint in uniform layer, with overlapping at edges of spray pattern. Back roll first coat application.
  - .4 Brush out immediately all runs and sags.
  - .5 Use brushes and rollers to work paint into cracks, crevices and places which are not adequately painted by spray.
- .4 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access.
- .5 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .6 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .7 Sand and dust between coats to remove visible defects.

### 3.6 SITE TOLERANCES

- .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
- .2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
- .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

### 3.7 FIELD QUALITY CONTROL

- .1 Standard of Acceptance:
- .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
  - .2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
  - .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
- .2 Field inspection of painting operations to be carried out by independent inspection firm as designated by Departmental Representative.
- .3 Advise Departmental Representative when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.
- .4 Cooperate with inspection firm and provide access to areas of work.

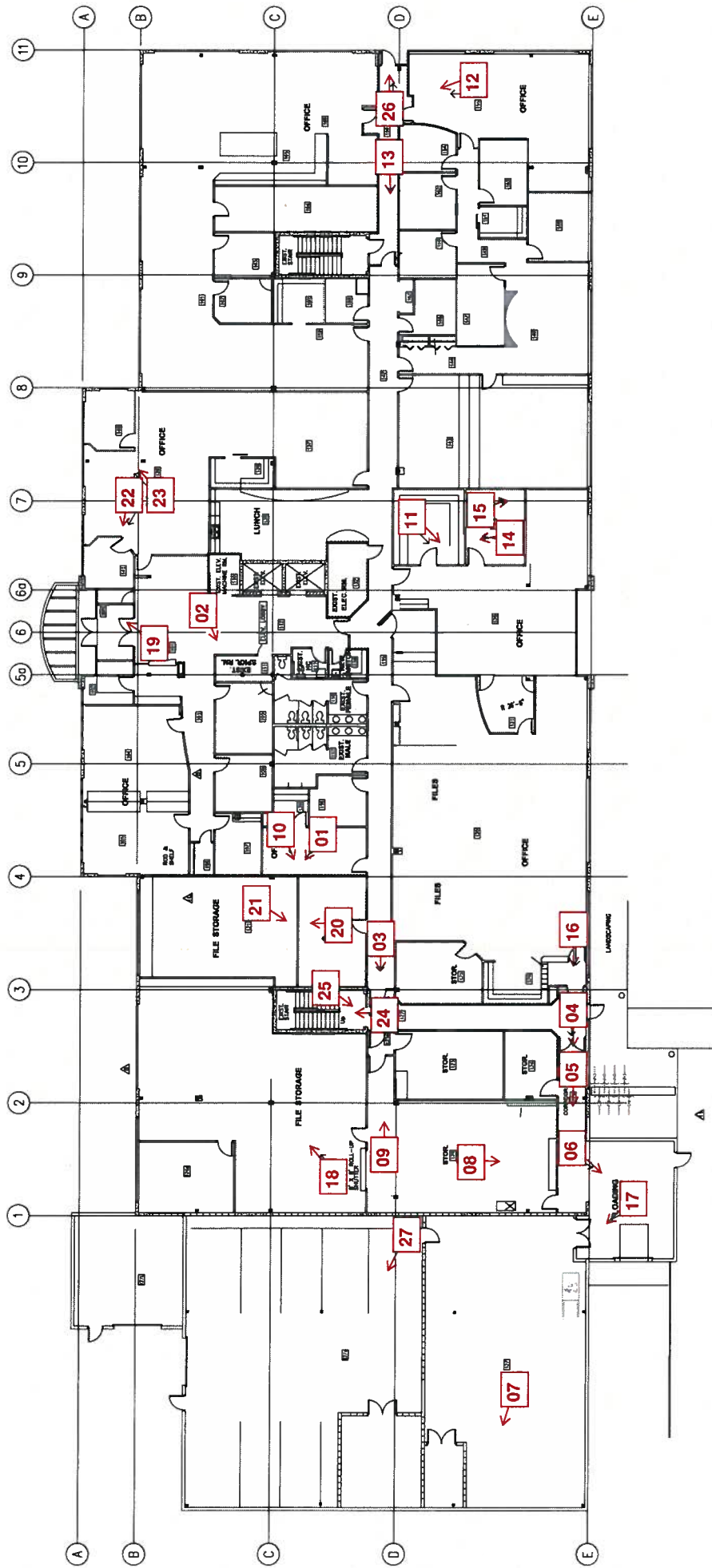
- .85 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental Representative.

### 3.8 RESTORATION

- .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and patters immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Departmental Representative. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Departmental Representative.

END OF SECTION 09 91 23

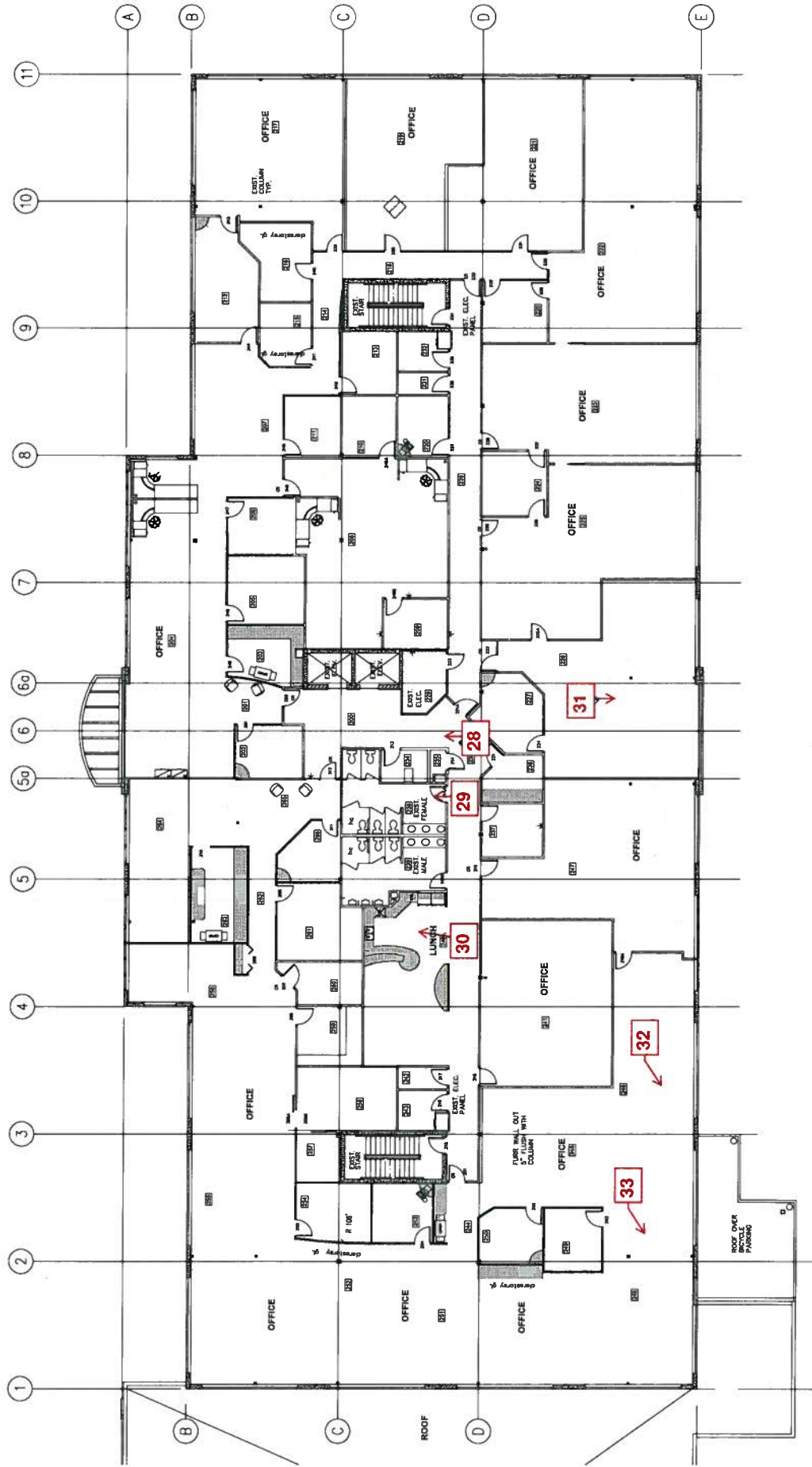
# PHOTO KEY PLAN - Level 1







# PHOTO KEY PLAN - Level 2









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**SURREY FEDERAL OPERATIONS BUILDING**

**PARTIAL DEMOLITION**

**SURREY, BRITISH COLUMBIA**

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**APPENDIX A**

**EXISTING SITE PHOTOS**



**APPENDIX A – EXISTING SITE PHOTOS**



Pic 1



Pic 2



Pic 3



Pic 4

**APPENDIX A – EXISTING SITE PHOTOS**



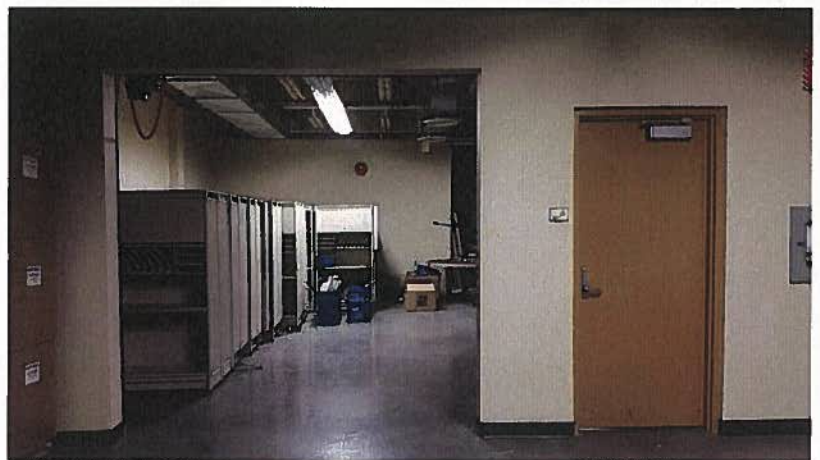
Pic 5



Pic 6



Pic 7



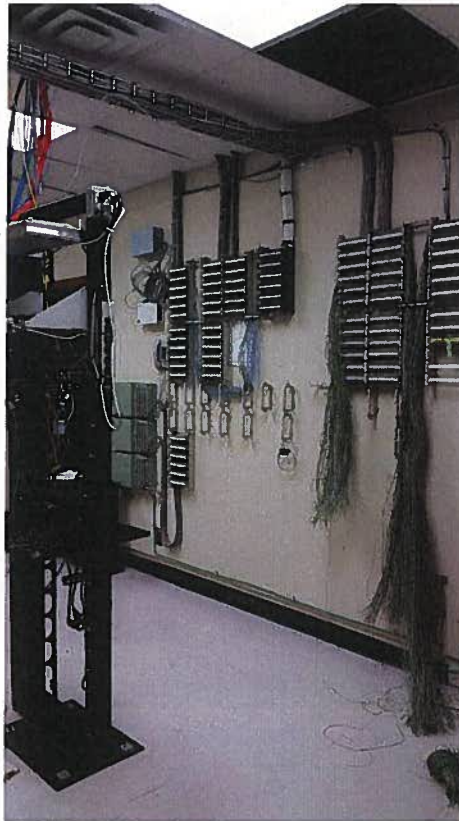
Pic 8



**APPENDIX A – EXISTING SITE PHOTOS**



Pic 9



Pic 10



Pic 11



Pic 12

**APPENDIX A – EXISTING SITE PHOTOS**



Pic 13



Pic 14



Pic 15



Pic 16

**APPENDIX A – EXISTING SITE PHOTOS**



Pic 17



Pic 18



Pic 19



Pic 20

**APPENDIX A – EXISTING SITE PHOTOS**



Pic 21



Pic 22



Pic 23



Pic 24

**APPENDIX A – EXISTING SITE PHOTOS**



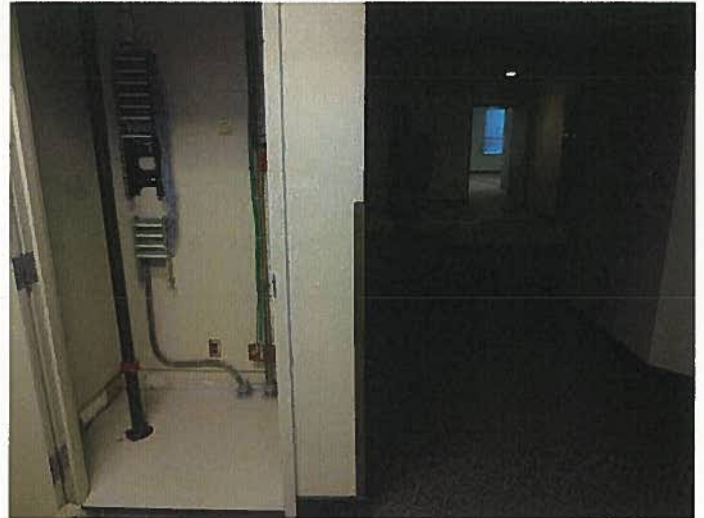
Pic 25



Pic 26



Pic 27



Pic 28

**APPENDIX A – EXISTING SITE PHOTOS**



Pic 29



Pic 30



Pic 31



Pic 32

**APPENDIX A – EXISTING SITE PHOTOS**



Pic 33



Pic 34



Pic 35



Pic 36

**APPENDIX A – EXISTING SITE PHOTOS**



Pic 37



Pic 38



Pic 39



Pic 40



**APPENDIX A – EXISTING SITE PHOTOS**

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Pic 41



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**SURREY FEDERAL OPERATIONS BUILDING**

**PARTIAL DEMOLITION**

**SURREY, BRITISH COLUMBIA**

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**APPENDIX B**

**RENTAL FURNITURE LIST**

**(NOT PART OF DEMOLITION SCOPE)**



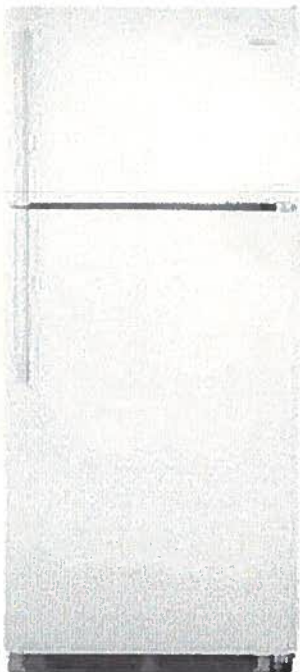
**APPENDIX B – RENTAL FURNITURE LIST**



Black Banquet Stacker Kitchen Chairs



Barstools, May not be exactly as shown.



Frigidaire  
18.cu. ft. Top Freezer Refrigerator  
- FFTR1821QW Top Freezer Refrigerator



Panasonic Genius® 1.3 Cu. Ft. Countertop  
Microwave – NNSG676W - White

**APPENDIX B – RENTAL FURNITURE LIST**

QTY	PRODUCT	DESCRIPTION
42	Meeting Table	6' Folding Table for Meeting Room
66	Office Chairs	Office Chairs
5	Kitchen Tables	6' Folding Table for Kitchen Tables
6	Round Table	Round Tables
50	Stacking Chair	Stacking Chairs for Kitchen
5	Bar Stool	Bar Stools
1	FFTR1821QW	18cu ft Top Freezer Refrigerator – White
2	NNSG676W	Countertop Microwave – White

REFERENCE IMAGES OF RENTAL FURNITURE



6' Folding Table (As a meeting table + kitchen table)



Office Chair



Round Table