SPECIFICATION

ENVELOPE RETROFIT

ELPHINSTONE AND WINNIPEGOSIS, MANITOBA
PROJECT NO. 14-002-01-30

CONSTRUCTION
MAY 2014

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WINNIPEGOSIS MANITOBA

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Elphinstone, Manitoba

445 Bey Street

447 Bey Street

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Part 1 General

1.1 WORK COVERED BY CONTRACT DOCUMENTS

.1 Work of this Contract comprises the renovations to five housing units located in the western part of the province of Manitoba. These include two in Elphinstone and three in Winnipegosis, Manitoba. This work includes; labour, materials and shipping of materials, in accordance with the contract documents and as further described herein.

1.2 SCOPE OF WORK

.1 Elphinstone Manitoba

- .1 445 Bay Street - Envelope Retrofit
- .2 447 Bay Street - Envelope Retrofit

.2 Winnipegosis, Manitoba

- .1 334 Grenon Street – Envelope Retrofit
- .2 526 4th Street Envelope Retrofit
- .3 5th and Stanley Street – Envelope Retrofit

1.3 SITE VERIFICATION ELPHINSTONE AND WINNIPEGOSIS

.1 The contractor is to provide all transportation to the sites for verification of all sizes.

.2 RCMP will not provide transportation.

1.4 COMPLETION DATES

.1 Elphinstone – September 31 2014

.2 Winnipegosis – September 31 2014

1.5 WORK SEQUENCE

.1 Provide Detailed work schedule

1.6 PROTECTION OF REMAINING FIXTURES AND CABINETRY

.1 The contractor is to document photo the condition of the existing cabinetry, fixtures and exterior decks to be moved at start of construction and supply a copy to the Consultant/Project manager.

.2 The contractor is responsible for the protection of all damage caused during the construction process and it will be the responsibility of the contractor to make good to the acceptance of the Consultant/Project manager.

1.7 CONTRACTOR USE OF PREMISES

.1 Move stored products or equipment which **interfere** with operation of owner or other contractors.

.2 Assume responsibility for the protection and safekeeping of products under this contract.

.3 Co-ordinate use of premises under direction of Consultant/Project manager, and Property.

.4 Obtain and pay for use of additional storage or work areas needed for operations under this Contract as required.

.5 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.

.6 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Consultant/Project manager.

1.8 OWNER OCCUPANCY

.1 Owners will occupy the buildings during the duration of the contract.

.2 Co-operate with Consultant/Project manager in scheduling operations to minimize conflict and to facilitate Planning of Alternate accommodations during construction.

1.9 EXISTING SERVICES

.1 Notify Consultant/Project manager and utility companies of intended interruption of services and obtain required permission.

.2 Where Work involves breaking into or connecting to existing services, give 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to pedestrian, vehicular traffic and tenant operations.

.3 Provide alternative routes for personnel and vehicular traffic (if required).

.4 Establish location and extent of service lines in area of work before starting Work. Notify Consultant/Project manager of findings.

.5 Submit schedule to and obtain approval from Consultant/Project manager and RCMP operations for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.

.6 Provide temporary services when directed by Consultant/Project manager or as required to maintain critical building and tenant systems.

.7 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.

.8 Where unknown services are encountered, immediately advise Consultant/Project manager and confirm findings in writing.

.9 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.

.10 Record locations on as built drawings maintained, re-routed and abandoned service lines.

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

1.10 DOCUMENTS REQUIRED

.1 Maintain at job site, one copy each document as follows:

.1 Contract Drawings.

.2 Specifications.
.3 Addenda.
.4 Reviewed Shop Drawings.
.5 List of Outstanding Shop Drawings.
.6 Change Orders.
.7 Other Modifications to Contract.
.8 Field Test Reports.
.9 Copy of Approved Work Schedule.
.10 Health and Safety Plan and Other Safety Related Documents.
.11 Standards listed in Part 1.10 Codes and Standards.
.12 Other documents as specified.

1.11 CODES AND STANDARDS

.1 Materials shall be new and work shall conform to the minimum applicable standards of the Canadian General Standards board, the Canadian Standards Association, The National Building Code of Canada 2010, and all applicable Territorial and Municipal codes, and all standards listed below. In the case of conflict or discrepancy the most stringent requirement shall apply.

.2 Meet or exceed requirements of contract documents, specified standards, codes and referenced documents.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 ACCESS AND EGRESS

.1 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

1.2 USE OF SITE AND FACILITIES

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

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

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

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

1.3 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

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

1.4 EXISTING SERVICES

.1 Notify, utility companies, Consultant/Project manager, of intended interruption of services and obtain required permission.

.2 Where Work involves breaking into or connecting to existing services, give owner 48 hours 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 of occupants, preferably on weekends.

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

1.5 SPECIAL REQUIREMENTS

.1 Submit schedule in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.

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

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

1.6 SECURITY CLEARANCES

.1 Personnel employed on this project will be subject to security check. Obtain clearance, as instructed, for each individual who will be required to enter premises.

1.7 BUILDING SMOKING ENVIRONMENT

.1 Comply with smoking restrictions. Smoking is not allowed.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Project Supplementary Conditions

1.2 CASH ALLOWANCES

.1 Include in Contract Price specified cash allowances.

.2 Cash allowances, unless otherwise specified, cover net cost to Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage installation and other authorized expenses incurred in performing Work.

.3 Contract Price, and not cash allowance, includes Contractor's Contractor's overhead and profit in connection with such cash allowance.

.4 Contract Price will be adjusted by written order to provide for excess or deficit to each cash allowance.

.5 Where costs under a cash allowance exceed amount of allowance, Contractor will be compensated for excess incurred and substantiated plus allowance for overhead and profit as set out in Contract Documents.

.6 Include progress payments on accounts of work authorized under cash allowances in Consultant/Project manager's monthly certificate for payment.

.7 Amount of each allowance, for Work specified in respective specification Sections is as follows:

.1 Include an allowance of $ 4,000.00 for purchase of exterior light fixtures.

.2 Include an allowance of $25,000.00 for unforeseen conditions.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 ON-SITE DOCUMENTS

.1 Contract Documents

.2 Specifications

.3 Addenda

.4 Reviewed shop drawings

.5 Change orders

.6 Other modifications in contract

.7 Field test reports

.8 Copy of approved Work Schedule

.9 Manufacturers installation and application instructions

.10 Labour conditions and wage schedules

.11 Project Record Documents (for as-built purposes)

.12 Codes and Standards listed in 01 11 00

1.2 ADMINISTRATIVE

.1 Attend project meetings throughout the progress of the work at the call of Consultant/Project manager.

.2 Provide physical space and make arrangements for meetings.

.3 Consultant/Project manager will record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.

.4 Consultant/Project manager will reproduce and distribute copies of minutes within three days after meetings and transmit to meeting participants, affected parties not in attendance, Consultant/Project manager, and Contractor.

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

1.3 PRECONSTRUCTION MEETING

.1 After award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities. Meeting will be held at the location and time designated by the departmental representative

.2 Departmental Representative, Engineer and Consultant/Project manager, Contractor, major Subcontractors, will be in attendance. Others may be in attendance at the discretion of the departmental representative or the Contractor. Representatives of the local Building Manager may also be in attendance.

.3 Establish time and location of meeting and notify parties concerned minimum 2 days before meeting.

.4 Agenda to include:

- .1 Appointment of official representative of participants in the Work.
- .2 Schedule of Work: in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
- .3 Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
- .5 Delivery schedule of specified equipment.
- .6 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
- .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
- .8 Owner provided products.
- .9 Record drawings in accordance with Section 01 33 00 - Submittal Procedures
- .10 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals
- .11 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
- .12 Monthly progress claims, administrative procedures, photographs, hold backs.
- .13 Appointment of inspection and testing agencies or firms.
- .14 Insurances, transcript of policies.

.5 Comply with Departmental Representative's allocation of mobilization areas of site; for field offices and sheds, for access, traffic and parking facilities.

.6 During construction coordinate use of site and facilities through Departmental Representatives procedures for intra-project communications: submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.

.7 Comply with instruction of Consultant/Project manager for use of Temporary utilities and construction facilities.

.8 Coordinate field engineering and layout work with Consultant/Project manager.

1.4 PROGRESS MEETINGS

.1 During course of Work at the discretion of the Consultant/Project manager and Departmental Representative.

.2 Representatives of the Contractor, major Subcontractors involved in the work and other as required and decided upon by the Departmental Representative or Contractor are to be in attendance. Contractor to notify all sub-contractors.

.3 Consultant/Project manager will notify contractor min 5 days prior to meetings

.4 Consultant/Project manager to record minutes of meetings and circulate to attending parties and affected parties not in attendance within 5 days after meeting.

.5 Agenda to include the following:

.1 Review, approval of minutes of previous meeting.
.2 Review of Work progress since previous meeting.
.3 Field observations, problems, conflicts.
.4 Problems which impede construction schedule.
.5 Review of off-site fabrication delivery schedules.
.6 Corrective measures and procedures to regain projected schedule.
.7 Revision to construction schedule.
.8 Progress schedule, during succeeding work period.
.9 Review submittal schedules: expedite as required.
.10 Maintenance of quality standards.
.11 Review proposed changes for affect on construction schedule and on completion date.
.12 Other business.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 DEFINITIONS

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

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

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

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

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

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

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

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

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

1.2 REQUIREMENTS

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

.2 Construction Progress Schedule to be Completed in Microsoft Project or Similar Software.

.3 Plan to complete Work in accordance with prescribed milestones and time frame.

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

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

1.3 SUBMITTALS

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

.2 Submit to Consultant/Project manager within 5 working days of Award of Contract as Master Plan for planning, monitoring and reporting of project progress.

.3 Submit Project Schedule to Consultant/Project manager within 5 working days of receipt of acceptance of Master Plan.

1.4 PROJECT MILESTONES

1.5 MASTER PLAN

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

.2 Consultant/Project manager will review and return revised schedules within 5 working days.

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

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

1.6 PROJECT SCHEDULE

.1 Develop detailed Project Schedule derived from Master Plan.

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

.1 Award.
.2 Shop Drawings, Samples.
.3 Permits.
.4 Mobilization.
.5 Excavation.
.6 Backfill.
.7 Piling
.8 Slab on grade.
.9 Structural Steel.
.10 Siding and Roofing.
.11 Interior Architecture (Walls, Floors and Ceiling).
.12 Plumbing.
.13 Lighting.

.14 Electrical.
.15 Piping.
.16 Controls.
.17 Heating, Ventilating, and Air Conditioning.
.18 Millwork.
.19 Fire Systems.
.20 Testing and Commissioning.
.21 Supplied equipment long delivery items.
.22 Engineer supplied equipment required dates.

1.7 PROJECT SCHEDULE REPORTING

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

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

1.8 PROJECT MEETINGS

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

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

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE

.1 Submit to Consultant/Project manager 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 imperial units.

.4 Where items or information is not produced in imperial units converted values are acceptable.

.5 Review submittals prior to submission to Consultant/Project manager. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated 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 Consultant/Project manager, 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 co-ordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Engineer's, Consultant/Project manager's review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant/Project manager review.

.10 Keep one reviewed copy of each submission on site.

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 Submit shop drawings bearing stamp and signature of qualified professional engineer registered or licensed in the Province of Manitoba, 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 14 days for Consultant/Project manager's review of each submission.

.5 Adjustments made on shop drawings by Consultant/Project manager are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant/Project manager prior to proceeding with Work.

.6 Make changes in shop drawings as Consultant/Project manager may require, consistent with Contract Documents. When resubmitting, notify Consultant/Project manager in writing of revisions other than those requested.

.7 Accompany submissions with transmittal letter, 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 Property Manager's, Engineer's, Consultant/Project manager's review, distribute copies.

.10 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as Consultant/Project manager and Engineer may reasonably request.

.11 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Consultant/Project manager 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 Consultant/Project manager and Engineer.

.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.

.13 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Consultant/Project manager and Engineer

.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 or 6 copies of manufacturers instructions for requirements requested in specification Sections and as requested by Consultant/Project manager and Engineer.

.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 6 copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Consultant/Project manager and Engineer.

.1 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.16 Submit 6 copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Consultant/Project manager and Engineer

.17 Delete information not applicable to project.

.18 Supplement standard information to provide details applicable to project.

.19 If upon review by Consultant/Project manager and Engineer, 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.

.20 The review of shop drawings by and Consultant/Project manager is for sole purpose of ascertaining conformance with general concept.

.1 This review shall not mean that Consultant/Project manager 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.

1.3 SAMPLES

.1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.

.2 Deliver samples prepaid to Consultant/Project managers business address.

.3 Notify Consultant/Project manager 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 Consultant/Project manager are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant/Project manager prior to proceeding with Work.

.6 Make changes in samples which Consultant/Project manager 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 NOT USED

.1 Not Used.

Part 2 Execution

2.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.3 Manitoba

.1 The Workers Compensation Act latest edition.

1.2 SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures .

.2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:

.1 Results of site specific safety hazard assessment.

.2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan .

.3 Submit copies of Contractor's authorized representative's work site health and safety inspection reports to Project manager or authority having jurisdiction, as required.

.4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.

.5 Submit copies of incident and accident reports.

1.3 SAFETY ASSESSMENT

.1 Perform site specific safety hazard assessment related to project.

1.4 MEETINGS

.1 Schedule and administer Health and Safety meeting with Project manager prior to commencement of Work.

1.5 REGULATORY REQUIREMENTS

.1 Do Work in accordance with Section 01 41 00 - Regulatory Requirements .

1.6 GENERAL REQUIREMENTS

.1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

.2 Project manager may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.7 RESPONSIBILITY

.1 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.

.2 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.

1.8 COMPLIANCE REQUIREMENTS

.1 Comply with The Workers Compensation Act, Workplace Safety Regulation, Northwest Territories Regulation.

.2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.9 UNFORSEEN HAZARDS

.1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise RCMP verbally and in writing.

1.10 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Project manager.

1.11 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Project manager.

.2 Provide Project manager with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Project manager may stop Work if non-compliance of health and safety regulations is not corrected.

1.12 WORK STOPPAGE

.1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 REFERENCES AND CODES

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

.2 Meet or exceed requirements of:

.1 Contract documents.

.2 Specified standards, codes and referenced documents.

1.2 HAZARDOUS MATERIAL DISCOVERY

.1 Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered during demolition work. Notify consultant and Consultant/Project manager.

.2 PCB: Polychlorinated Biphenyl: stop work immediately when material resembling Polychlorinated Biphenyl is encountered during demolition work. Notify Consultant and Consultant/Project manager.

.3 Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Consultant and Consultant/Project manager.

1.3 BUILDING SMOKING ENVIRONMENT

.1 No smoking permitted.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 INSPECTION

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

.2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Consultant/Project manager, instructions, or law of Place of Work.

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

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

1.2 INDEPENDENT INSPECTION AGENCIES

.1 Independent Inspection/Testing Agencies will be engaged by Consultant/Project manager for purpose of inspecting and/or testing portions of Work.

.2 Provide equipment required for executing inspection and testing by appointed agencies.

.3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.

.4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Property Manager or Consultant/Project manager at no cost to Property Manager or Consultant/Project manager. Pay costs for retesting and reinspection.

1.3 ACCESS TO WORK

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

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

1.4 PROCEDURES

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

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

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

1.5 REJECTED WORK

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

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

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

1.6 REPORTS

.1 Submit electronic copies of inspection and test reports to Consultant/Project manager.

.2 Provide copies to subcontractor of work being inspected or tested.

1.7 MOCK-UPS

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

.2 Construct in locations acceptable to Consultant/Project manager.

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

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

.5 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.

1.8 MILL TESTS

.1 Submit mill test certificates as requested.

1.9 EQUIPMENT AND SYSTEMS

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SUBMITTALS

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

1.2 INSTALLATION AND REMOVAL

.1 Provide temporary utilities controls in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.3 WATER SUPPLY

.1 Water is available on site provided by the Building Owner

1.4 TEMPORARY HEATING AND VENTILATION

.1 Provide temporary heating as required during construction period, including attendance, maintenance and fuel.

.2 Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted.

.3 Provide temporary heat and ventilation in enclosed areas as required to:

- .1 Facilitate progress of Work.
- .2 Protect Work and products against dampness and cold.
- .3 Prevent moisture condensation on surfaces.
- .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
- .5 Provide adequate ventilation to meet health regulations for safe working environment.

.4 Maintain temperatures of minimum 21 degrees C in areas where construction is in progress.

.5 Ventilating:

- .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
- .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
- .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
- .4 Ventilate storage spaces containing hazardous or volatile materials.
- .5 Ventilate temporary sanitary facilities.
- .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.

.6 Permanent heating system of building, to be used when available. Be responsible for damage to heating system if use is permitted.

.7 On completion of Work for which permanent heating system is used, replace filters, clean furnaces and power vacuum all ductwork inform Consultant/Project manager of completion.

.8 Ensure Date of Substantial Performance and Warranties for heating system do not commence until entire system is in as near original condition as possible and is certified by Consultant/Project manager.

.9 Maintain strict supervision of operation of temporary heating and ventilating equipment to:

.1 Conform with applicable codes and standards.

.2 Enforce safe practices.

.3 Prevent abuse of services.

.4 Prevent damage to finishes.

.5 Vent direct-fired combustion units to outside.

.10 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

1.5 TEMPORARY POWER AND LIGHT

.1 Power is available for use by the contractor provided by the Building Owner.

.2 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of Consultant/Project manager provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps which have been used for more than 3 months.

1.6 FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

.2 Burning rubbish and construction waste materials is not permitted on site.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian Green Building Council (CaGBC)

.1 LEED Canada-NC Version 1.0-December 2004, LEED (Leadership in Energy and Environmental Design): Green Building Rating System For New Construction and Major Renovations.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.

.2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.

.3 Canadian Standards Association (CSA International)

.1 CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.

.2 CSA-0121-M1978(R2003), Douglas Fir Plywood.

.3 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.

.4 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

.4 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 SUBMITTALS

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

1.3 INSTALLATION AND REMOVAL

.1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by contractor, number of trailers used, avenues of ingress/egress to fenced are and details of fence installation

.2 Indicate use of supplemental or other staging area.

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

.4 Remove from site all such work after use.

1.4 SITE STORAGE/LOADING

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

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

.3 Co-ordinate location of staging with Consultant/Project manager/Project manager or owners representative on site.

1.5 CONSTRUCTION PARKING

.1 Parking will be permitted on site provided it does not disrupt performance of Work or impede the operation of the owners.

.2 Adequate parking must be maintained for site access.

.3 Provide and maintain adequate access to project site.

1.6 EQUIPMENT, TOOL AND MATERIALS STORAGE

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

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

1.7 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

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

1.8 CLEAN-UP

.1 Remove construction debris, waste materials, packaging material from work site daily.

.2 Clean dirt or mud tracked onto paved or surfaced roadways.

.3 Remove materials resulting from demolition as soon as possible from site.

.4 Stack stored new or salvaged material not in construction facilities.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

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

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

.3 If there is question as to whether products or systems are in conformance with applicable standards, Consultant/Project manager and/or Consultant/Project manager reserves right to have such products or systems tested to prove or disprove conformance.

.4 Cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

1.2 QUALITY

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

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

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

.4 Should disputes arise as to quality or fitness of products, decision rests strictly with Consultant/Project manager based upon requirements of Contract Documents.

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

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

1.3 AVAILABILITY

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

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

1.4 STORAGE, HANDLING AND PROTECTION

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

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

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

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

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

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

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

.8 Remove and replace damaged products at own expense and to satisfaction of Consultant/Project manager.

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

1.5 TRANSPORTATION

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

1.6 MANUFACTURER'S INSTRUCTIONS

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

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

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

1.7 QUALITY OF WORK

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

.2 Do not employ anyone unskilled in their required duties. Consultant/Project manager reserves the right to require dismissal from site, workers deemed incompetent or careless.

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

1.8 CO-ORDINATION

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

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

1.9 CONCEALMENT

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

.2 Before installation inform Consultant/Project manager if there is interference. Install as directed by Consultant/Project manager.

1.10 REMEDIAL WORK

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

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

1.11 LOCATION OF FIXTURES

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

.2 Inform Engineer of conflicting installation. Install as directed.

1.12 FASTENINGS

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

.2 Prevent electrolytic action between dissimilar metals and materials.

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

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

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

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

1.13 FASTENINGS - EQUIPMENT

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

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

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

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

1.14 PROTECTION OF WORK IN PROGRESS

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

1.15 EXISTING UTILITIES

.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and/or building occupants.

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Identification of existing survey control points and property limits.

1.2 LOCATION OF EQUIPMENT AND FIXTURES

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

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

.3 Inform Consultant/Project manager of impending installation and obtain approval for actual location.

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

1.3 RECORDS

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

.2 On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of Work.

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

1.4 SUBMITTALS

.1 On request of Departmental Representative or Consultant/Project manager, submit documentation to verify accuracy of field engineering work.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 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 8400 – 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.

END OF SECTION

Part 1 General

1.1 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 Consultant/Project manager. Do not burn waste materials on site, unless approved by Consultant/Project manager.

.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 Dispose of waste materials and debris off site.

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

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

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

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

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

1.2 FINAL CLEANING

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

.2 Remove waste products and debris other than that caused by others, 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 Consultant/Project manager. Do not burn waste materials on site, unless approved by Consultant/Project manager.

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

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

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

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

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

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

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

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

.14 Remove dirt and other disfiguration from exterior surfaces.

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

.16 Sweep and wash clean paved areas.

.17 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.

.18 Clean roofs, downspouts, and drainage systems.

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

1.3 WASTE MANAGEMENT AND DISPOSAL

.1 Dispose of waste and separate waste materials for recycling as per requirements of local authorities.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 INSPECTION AND DECLARATION

.1 Contractor's Inspection: Contractor and Subcontractors: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.

.1 Notify Consultant/Project manager in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.

.2 Request Inspection.

.2 Consultant/Project manager and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor to correct Work accordingly.

.3 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 Fire Commissioner, Utility companies HRDC Labour Programs-Fire Protection, Engineering Services and Local Authorities have been submitted.

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

.6 Work is complete and ready for final inspection.

.4 Final Inspection: when items noted above are completed, request final inspection of Work by Consultant/Project manager and Contractor. If Work is deemed incomplete by Consultant/Project manager, complete outstanding items and request reinspection.

1.2 CLEANING

.1 In accordance with Section 01 74 11 – Cleaning.

.2 Remove waste and surplus materials, rubbish and construction facilities from the site in accordance with local authorities.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 Not Used

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SUBMITTALS

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

.2 Prepare instructions and data using personnel experienced in maintenance and operation of described products.

.3 Copy will be returned after final inspection, with Consultant/Project manager comments.

.4 Revise content of documents as required prior to final submittal.

.5 Two weeks prior to Substantial Performance of the Work, submit to the Consultant/Project manager, four final copies of operating and maintenance manuals in English.

.6 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.

.7 Furnish evidence, if requested, for type, source and quality of products provided.

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

.9 Pay costs of transportation.

.10 Supply one electronic and 5 copies of equipment manuals for all new items installed under this project

1.2 FORMAT

.1 Organize data as instructional manual.

.2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.

.3 When multiple binders are used correlate data into related consistent groupings. Identify contents of each binder on spine.

.4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.

.5 Arrange content by systems, under Section numbers and sequence of Table of Contents.

.6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

.7 Text: manufacturer's printed data, or typewritten data.

.8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

.9 Provide scaled CAD files in dwg format on CD.

1.3 CONTENTS - EACH VOLUME

.1 Table of Contents: provide title of project;

.1 Date of submission; names.

.2 Addresses, and telephone numbers of Consultant/Project manager and Contractor with name of responsible parties.

.3 Schedule of products and systems, indexed to content of volume.

.2 For each product or system:

.1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.

1.4 AS-BUILTS AND SAMPLES

.1 Maintain, at site for Consultant/Project manager one record copy of:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Change Orders and other modifications to 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 All copies of the documents must be turned over to Consultant/Project manager, **NO** copies may be maintained by the General Contractor or Trades.

1.5 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.

1.6 SPARE PARTS

.1 Provide spare parts, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to site; place and store.

.4 Receive and catalogue items. Submit inventory listing to Consultant/Project manager. Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.

1.7 SPECIAL TOOLS

.1 Provide special tools, in quantities specified in individual specification sections.

.2 Provide items with tags identifying their associated faction and equipment.

.3 Deliver to site; place and store

.4 Receive and catalogue items. Submit inventory listing to Consultant/Project manager. Include approved listing in Maintenance Manual

1.8 MAINTENANCE MATERIALS

.1 Provide maintenance and extra materials, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to site; place and store.

.4 Receive and catalogue items. Submit inventory listing to Consultant/Project manager. Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.

1.9 SPECIAL TOOLS

.1 Provide special tools, in quantities specified in individual specification section.

.2 Provide items with tags identifying their associated function and equipment.

.3 Deliver to site; place and store.

.4 Receive and catalogue items. Submit inventory listing to Consultant/Project manager. Include approved listings in Maintenance Manual.

1.10 STORAGE, HANDLING AND PROTECTION

.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.

.2 Store in original and undamaged condition with manufacturer's seal and labels intact.

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

.4 Store paints and freezable materials in a heated and ventilated room.

.5 Remove and replace damaged products at own expense and to satisfaction of Consultant/Project manager.

1.11 WARRANTIES AND BONDS

.1 Develop warranty management plan to contain information relevant to Warranties.

.2 Submit warranty management plan, 30 days before planned pre-warranty conference, to Property Manager and Consultant/Project manager for approval.

.3 Warranty management plan to include required actions and documents to assure that Property Manager receives warranties to which it is entitled.

.4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.

.5 Submit, warranty information made available during construction phase, to Property Manager for approval prior to each monthly pay estimate.

.6 Assemble approved information in binder and submit upon acceptance of work. Organize binder as follows:

.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 applicable item of work.

.4 Verify that documents are in proper form, contain full information, and are notarized.

.5 Co-execute submittals when required.

.6 Retain warranties and bonds until time specified for submittal.

.7 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.

.8 Include information contained in warranty management plan as follows:

.1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.

.2 Listing and status of delivery of Certificates of Warranty for extended warranty items, to include roofs..

.3 Provide list for each warranted equipment, item, feature of construction or system indicating:

.1 Name of item.

.2 Model and serial numbers.

.3 Location where installed.

.4 Name and phone numbers of manufacturers or suppliers.

.5 Names, addresses and telephone numbers of sources of spare parts.

.6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.

.7 Cross-reference to warranty certificates as applicable.

.8 Starting point and duration of warranty period.

.9 Summary of maintenance procedures required to continue warranty in force.

.10 Cross-Reference to specific pertinent Operation and Maintenance manuals.

.11 Organization, names and phone numbers of persons to call for warranty service.

.12 Typical response time and repair time expected for various warranted equipment.

.4 Contractor's plans for attendance at 10 month post-construction warranty inspections.

.5 Procedure and status of tagging of equipment covered by extended warranties.

.6 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

.9 Respond in a timely manner to oral or written notification of required construction warranty repair work.

.10 Written verification will follow oral instructions. Failure to respond will be cause for the property manager to proceed with action against Contractor.

1.12 PRE-WARRANTY CONFERENCE

.1 Meet with Consultant/Project manager, to develop understanding of requirements of this section. Schedule meeting prior to contract completion, and at time designated by Consultant/Project manager.

.2 Consultant/Project manager will establish communication procedures for:

.1 Notification of construction warranty defects.

.2 Determine priorities for type of defect.

.3 Determine reasonable time for response.

.3 Provide name, telephone number and address of licensed and bonded company that is authorized to initiate and pursue construction warranty work action.

.4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.13 WARRANTY TAGS

.1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by Property Manager or Consultant/Project manager.

.2 Attach tags with copper wire and spray with waterproof silicone coating.

.3 Leave date of acceptance until project is accepted for occupancy.

.4 Indicate following information on tag:

.1 Type of product/material.

.2 Model number.

.3 Serial number.

.4 Contract number.

.5 Warranty period.

.6 Inspector's signature.

.7 Construction Contractor.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Section Includes:

.1 This section is limited to portions of the Building Management Manual (BMM) provided to Departmental Representative by Contractor.

.2 Acronyms:

.1 BMM - Building Management Manual.
.2 HVAC - Heating, Ventilation and Air Conditioning.
.3 PI - Product Information.
.4 PV - Performance Verification.
.5 TAB - Testing, Adjusting and Balancing.
.6 WHMIS - Workplace Hazardous Materials Information System.

1.2 GENERAL REQUIREMENTS

.1 Standard letter size paper 216 mm x 279mm.

.2 Binders: vinyl hard covered, 3" "D" ring,(not "O" ring) loose leaf sized, with spine pocket. Identify contents of each binder on spine

.3 Methodology used to facilitate updating.

.4 Drawings, diagrams and schematics to be professionally developed.

.5 Electronic copy of data to be in a format accepted and approved by Property Manger (PDF).

1.3 APPROVALS

.1 Prior to commencement, co-ordinate requirements for preparation, submission and approval with Property Manager.

1.4 GENERAL INFORMATION

.1 Provide Consultant/Project manager the following for insertion into appropriate Part and Section of BMM:

.1 Complete list of names, addresses, telephone and fax numbers of contractor, sub-contractors that participated in delivery of project - as indicated in Section 1.2 of BMM.

.2 Summary of architectural, structural, fire protection, mechanical and electrical systems installed and commissioned - as indicated in Section 1.4 of BMM.

.1 Including sequence of operation as finalized after commissioning is complete as indicated in Section 2.0 of BMM.

.3 Description of building operation under conditions of heightened security and emergencies as indicated in Section 2.0 of BMM.

.4 System, equipment and components Maintenance Management System (MMS) identification - Section 2.1 of BMM..

.5 Information on operation and maintenance of architectural systems and equipment installed and commissioned - Section 2.0 of BMM.

.6 Information on operation and maintenance of fire protection and life safety systems and equipment installed and commissioned - Section 2.0 of BMM.

.7 Information on operation and maintenance of mechanical systems and equipment installed and commissioned - Section 2.0 of BMM.

.8 Operating and maintenance manual - Section 3.2 of BMM.

.9 Final commissioning plan as actually implemented.

.10 Completed commissioning checklists.

.11 Commissioning test procedures employed.

.12 Completed Product Information (PI) and Performance Verification (PV) report forms, approved and accepted by Property Manager.

.13 Commissioning reports.

1.5 CONTENTS OF OPERATING AND MAINTENANCE MANUAL

.1 For detailed requirements refer to Section 01 78 00 - Closeout Submittals.

.2 Consultant/Project manager to review and approve format and organization within 2 weeks of award of contract.

.3 Include original manufactures brochures and written information on products and equipment installed on this project.

.4 Record and organize for easy access and retrieval of information contained in BMM.

.5 Include completed PI report forms, data and information from other sources as required.

.6 Inventory directory relating to information on installed systems, equipment and components.

.7 Approved project shop-drawings, product and maintenance data.

.8 Manufacturer's data and recommendations relating: manufacturing process, installation, commissioning, start-up, O&M, shutdown and training materials.

.9 Inventory and location of spare parts, special tools and maintenance materials.

.10 Warranty information.

.11 Inspection certificates with expiration dates, which require on-going re-certification inspections.

.12 Maintenance program supporting information including:

.1 Recommended maintenance procedures and schedule.

.2 Information to removal and replacement of equipment including, required equipment, points of lift and means of entry and egress.

1.6 SUPPORTING DOCUMENTATION FOR INSERTION INTO SUPPORTING APPENDICES

.1 Provide RCMP supporting documentation relating to installed equipment and system, including:

.1 General:
- .1 WHMIS information manual.
- .2 Approved "as-built" drawings and specifications.
- .3 Procedures used during commissioning.
- .4 Cross-Reference to specification sections.

.2 Architectural and structural:
- .1 Inspection certificates, construction permits.

.3 Mechanical:
- .1 Installation permits, inspection certificates.
- .2 Copies of posted instructions.

.4 Electrical:
- .1 Installation permits, inspection certificates.
- .2 Charts and schedules.
- .3 Locations of cables and components.
- .4 Copies of posted instructions.

1.7 IDENTIFICATION OF FACILITY

.1 When submitting information to Departmental Representative for incorporation into BMM, use following system for identification of documentation:

.1 To be supplied to successful contractor.

1.8 USE OF CURRENT TECHNOLOGY

.1 Use current technology for production of documentation. Emphasis on ease of accessibility at all times, maintain in up-to-date state, compatibility with user's requirements.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian Standards Association (CSA International)

.1 CSA S350-M1980(R1998), Code of Practice for Safety in Demolition of Structures.

1.2 SUBMITTALS

.1 Submit shop drawings in accordance with Sections 01 33 00 - Submittal Procedures 01 00 10 - General Instructions.

1.3 SITE CONDITIONS

.1 Should material resembling spray or trowel-applied asbestos or other designated substance listed as hazardous be encountered, stop work, take preventative measures, and notify Consultant/Project manager immediately.

.1 Do not proceed until written instructions have been received from Consultant/Project manager.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 PREPARATION

.1 Inspect site with Consultant/Project manager 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.

3.2 PROTECTION

.1 Prevent movement, settlement, or damage to adjacent structures, utilities, and landscaping features and parts of building to remain in place. Provide bracing and shoring required.

.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.

3.3 SALVAGE

.1 Refer to demolition drawings and specifications for items to be salvaged for reuse.

.2 Items to be stored in weather tight enclosure to ensure that no damaged is caused prior to re-installation

3.4 SITE REMOVALS

.1 Remove items as indicated.

3.5 DEMOLITION

.1 Remove parts of existing building to permit new construction.

.2 Trim edges of partially demolished building elements to tolerances as defined by Consultant/Project manager to suit future use.

3.6 DISPOSAL

.1 Dispose of removed materials, except where specified otherwise, in accordance with authority having jurisdiction.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.2 Section 06 05 73 - Treated Wood.

1.2 REFERENCES

.1 American National Standards Institute (ANSI)

.1 ANSI A208.1-1999, Particleboard, Mat Formed Wood.

.2 American Society for Testing and Materials (ASTM)

.1 ASTM A653/A653M-01a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealled) by the Hot-Dip Process.

.2 ASTM C36/C36M-01, Specification for Gypsum Wallboard.

.3 ASTM C578-01, Specification for Rigid, Cellular Polystrene Thermal Insulation.

.4 ASTM C1289-01, Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.

.5 ASTM D1761-00, Standard Test Methods for Mechanical Fasteners in Wood.

.6 ASTM D5055-00, Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.

.7 ASTM D5456-01ae1, Specification for Evaluation of Structural Composite Lumber Products.

.3 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-11.3-M87, Hardboard.

.2 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.

.3 CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.

.4 CAN/CGSB-71.26-M88, Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems.

.4 Canadian Standards Association (CSA)

.1 CSA A123.2-M1979(R1999), Asphalt Coated Roofing Sheets.

.2 CAN/CSA-A247-M86, Insulating Fiberboard.

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

.4 CAN/CSA-G164-M92, Hot Dip Galvanizing of Irregularly Shaped Articles.

.5 CSA O112 Series-M1977, CSA Standards for Wood Adhesives.

.6 CSA O121-M1978, Douglas Fir Plywood.

.7 CAN/CSA-O122-M89, Structural Glued-Laminated Timber.

.8 CAN/CSA-O141-91, Softwood Lumber.

.9 CSA O151-M1978, Canadian Softwood Plywood.

□

.10 CSA O153-M1980, Poplar Plywood.

.11 CAN/CSA-O325.0-92(R1988), Construction Sheathing.

.12 CAN3-O437 Series-93, Standards on OSB and Waferboard.

.5 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber 2000.

.6 Truss Design and Procedures for Light Metal Connected Wood Trusses, Truss Plate Institute of Canada.

1.3 QUALITY ASSURANCE

.1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.2 Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal to the maximum extent economically possible.

.2 Set aside damaged wood and dimensional lumber off-cuts for approved alternative uses (e.g. bracing, blocking, cripples, bridging). Store this separated reusable wood waste convenient to cutting station and area of work.

.3 Separate metal, plastic, wood and corrugated cardboard-packaging in accordance with the Waste Management Plan and place in designated areas for recycling.

.4 Do not burn scrap at the project site.

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

Part 2 Products

2.1 FRAMING AND STRUCTURAL MATERIALS

.1 Lumber: unless specified otherwise, softwood, S4S, moisture content not greater than 19% at time of installation (S-dry) or less in accordance with following standards:

.1 CAN/CSA-O141.

.2 NLGA Standard Grading Rules for Canadian Lumber.

.2 Glulam in accordance with Structural Glued-Laminated Timber CAN/CSA-O122.

.3 Wood I-joists in accordance with Prefabricated Wood I-Joists ASTM D5055.

.4 Light-frame trusses in accordance with "Truss Design and Procedures for Light Metal Connected Wood Trusses", Truss Plate Institute of Canada.

□

.5 Structural Composite Lumber (SCL) in accordance with ASTM D5456.

.1 Framing and board lumber: in accordance with NBC.

.6 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:

.1 S2S, S4Sm or NLGA species, SPF No.2 grade is acceptable.
.2 Board sizes: "Standard" or better grade.
.3 Dimension sizes: "Standard" light framing or better grade.
.4 Post and timbers sizes: "Standard" or better grade.

2.2 PANEL MATERIALS

.1 Plywood, OSB and wood based composite panels: to CAN/CSA-O325.0.

.2 Douglas fir plywood (DFP): to CSA O121, standard construction.

.3 Canadian softwood plywood (CSP): to CSA O151, standard construction.

.4 Poplar plywood (PP): to CSA O153, standard construction.

.5 Interior mat-formed wood particleboard: to ANSI 208.1.

.6 Mat-formed structural panelboards (OSB wafer): to CAN3-O437.0.

.7 Insulating fiberboard sheathing: to CAN/CSA-A247.

.8 Glass fibre board sheathing: non-structural, rigid, faced, fiberglass, insulating exterior sheathing board.

.9 Isocyanurate & Urethane sheathing: to ASTM C1289, unfaced faced .

.10 Expanded polystyrene sheathing: to ASTM C578.

.11 Gypsum sheathing: to ASTM C36/C36M.

2.3 ACCESSORIES

.1 Exterior wall sheathing paper: to CAN/CGSB-51.32.

.2 Polyethylene film: to CAN/CGSB-51.34, Type 1, 0.15 mm thick.

.3 Air seal: closed cell polyurethane or polyethylene.

.4 Subflooring adhesive: to CGSB-71.26, cartridge loaded.

.5 General purpose adhesive: to CSA O112 Series.

.6 Nails, spikes and staples: to CSA B111 except:

.1 Use hot-dipped galvanized spiral nails and hot-dipped galvanized spiral spikes throughout.

□

.2 Use hot dip galvanized steel common nails for exterior work, interior highly humid areas and for pressure-preservative and fire-retardant treated lumber and in all other areas.

.7 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers. Hot-dip galvanized finish to CAN/CSA G164 for all work

.8 Use surface fastenings of following types, except where specified otherwise

.1 To concrete, use expansion shield with lag screws.

.2 In masonry, set bolts at joints in full bed of mortar.

.3 To structural steel, use bolts through drilled hole, or welded stud-bolts or power driven self-drilling screws, or welded stud-bolts.

.9 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.

.10 Joist hangers: minimum 1 mm thick sheet steel, galvanized ZF001 coating designation.

.11 Nailing discs: flat caps, minimum 25 mm diameter, minimum 0.4 mm thick, sheet metal, fibre, formed to prevent dishing. Bell or cup shapes not acceptable.

.12 Roof sheathing H-Clips: formed "H" shape, thickness to suit panel material, extruded 6063-T6 aluminum alloy type approved by Consultant.

2.4 FASTENER FINISHES

.1 Galvanizing: Bolt, nut, washer, screw, and pin type fasteners, hot-dip galvanize finish to CAN/CSA-G164 for all work.

Part 3 Execution

3.1 PREPARATION

.1 Store wood products.

3.2 INSTALLATION

.1 Comply with requirements of NBC Part 9 supplemented by following paragraphs.

.2 Install members true to line, levels and elevations, square and plumb.

.3 Construct continuous members from pieces of longest practical length.

.4 Install spanning members with "crown-edge" up.

.5 Select exposed framing for appearance. Install lumber and panel materials so that grade-marks and other defacing marks are concealed or are removed by sanding where materials are left exposed.

□

.6 Install subflooring or combined subfloor and underlay with panel end-joints located on solid bearing, staggered at least 800 mm.

.1 In addition to mechanical fasteners, floor panels secure floor subflooring to floor joists using glue and screws. Place continuous adhesive bead in accordance with manufacturer's instructions, single-bead on each joist and double-bead on joists where panel ends butt.

.7 Install wall sheathing in accordance with manufacturer's printed instructions.

.8 Install roof sheathing in accordance with requirements of NBC.

.9 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, facings, fascia, soffit, siding electrical equipment mounting boards, and other work as required.

.10 Install furring to support siding applied vertically where there is no blocking and where sheathing is not suitable for direct nailing.

.1 Align and plumb faces of furring and blocking to tolerance of 1:600.

.11 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

.1 Except where indicated otherwise use material at least 38mm thick, secured with 9 mm bolts located within 300 mm from ends of members and uniformly spaced at 1200 mm o.c.

.2 Countersink bolts where necessary to provide clearance for other work.

.12 Install wood cants, fascia backing, nailers, curbs and other wood supports for roofing and sheet metal work, and roof mounted equipment and/or access hatches as indicated:

.1 Secure using galvanized 9 mm bolts where indicated. Located bolts within 300 mm from ends and at 1200 mm centres except where indicated otherwise.

.2 Secure to Steel Deck with No. 9 self tapping metal screws at 300 mm centres.

.3 At roof perimeter, leave loose minimum 200 mm to be sealed to wall vapour barrier membrane (liner panel) and the remainder left to be sealed to roof vapour barrier by roofing contractor.

.13 Install sleepers as indicated.

.14 Use dust collectors and high quality respirator masks when cutting or sanding wood panels.

.15 Surface-applied wood preservative applied as follows:

.1 Apply preservative by dipping, or by brush or spray to completely saturate and maintain wet film on surface for minimum 3 minute soak on lumber and one minute soak on plywood.

.2 Treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

.3 Treat all material as follows:

.1 Wood cants, fascia backing, curbs, nailers, sleepers on roof deck.

□

.2 Wood furring on outside surface of exterior concrete walls.

3.3 ERECTION

.1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

.2 Countersink bolts where necessary to provide clearance for other work.

.3 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

3.4 SCHEDULES

.1 Exterior wall sheathing:

.1 Plywood, standard sheathing grade, size as indicated.

.2 Electrical equipment mounting boards:

.1 Provide backboards for mounting electrical equipment as indicated. Use 19 mm thick, CSP/S1S or DFP/G1S on 19 x 38 mm at 300 mm o.c. intermediate spacing.

.2 Paint as per Section 09 91 23 – Interior Painting.

.3 Backboards shall be painted before installation of equipment

END OF SECTION

□

Part 1 General

1.1 REFERENCES

.1 American National Standards Institute (ANSI)

- .1 ANSI A208.1-99, Particleboard.
- .2 ANSI A208.2-02, Medium Density Fibreboard (MDF).
- .3 ANSI/HPVA HP-1-2004, Standard for Hardwood and Decorative Plywood.

.2 American Society for Testing and Materials International (ASTM)

- .1 ASTM E1333-96(2002), Standard Test Method for Determining Formaldehyde Concentrations in Air and Emissions Rates from Wood Products Using a Large Chamber.

.3 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)

- .1 Architectural Woodwork Quality Standards Illustrated, 8th edition, Version 1.0 2003.

.4 Canada Green Building Council (CaGBC)

- .1 LEED Canada-NC Version 1.0-2004, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.

.5 Canadian General Standards Board (CGSB)

- .1 CAN/CGSB-11.3-M87, Hardboard.

.6 Canadian Plywood Association (CanPly)

- .1 The Plywood Handbook 2005.

.7 Canadian Standards Association (CSA International)

- .1 CSA B111-74(R2003), Wire Nails, Spikes and Staples.
- .2 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
- .3 CSA O121-M89(R2003), Douglas Fir Plywood.
- .4 CAN/CSA O141-91(R1999), Softwood Lumber.
- .5 CSA O151-04, Canadian Softwood Plywood.
- .6 CSA O153-M1980(R2003), Poplar Plywood.
- .7 CSA Z760-94, Life Cycle Assessment.

.8 Forest Stewardship Council (FSC)

- .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.

.9 National Hardwood Lumber Association (NHLA)

- .1 Rules for the Measurement and Inspection of Hardwood and Cypress 1998.

.10 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber 2005.

.11 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)

.1 SCAQMD Rule 1113-04, Architectural Coatings.

.2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.

.12 Underwriters Laboratories of Canada (ULC)

.1 CAN4-S104-80(R1985), Standard Method for Fire Tests of Door Assemblies.

.2 CAN4-S105-85(R1992), Standard Specification for Fire Door Frames, meeting the Performance Required by CAN4-S104.

1.2 SUBMITTALS

.1 Submit Submittal submissions: in accordance with Section 01 33 00 - Submittal Procedures .

.2 Shop Drawings Submittals: in accordance with Section 01 33 00 - Submittal Procedures .

.1 Indicate details of construction, profiles, jointing, fastening and other related details.

.2 Indicate materials, thicknesses, finishes and hardware.

.3 Submit samples in accordance with Section 01 33 00 - Submittal Procedures .

.1 Submit duplicate samples: sample size 150 x 150 mm or 150 mm long unless specified otherwise of panel materials.

1.3 QUALITY ASSURANCE

.1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.1 Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.

1.4 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements .

.1 Protect materials against dampness during and after delivery.

.2 Store materials in ventilated areas, protected from extreme changes of temperature or humidity.

Part 2 Products

2.1 LUMBER MATERIAL

.1 Softwood lumber: unless specified otherwise, S4S, moisture content 19% or less in accordance with following standards:

.1 CAN/CSA-O141.

.2 NLGA Standard Grading Rules for Canadian Lumber.

.3 AWMAC custom grade, moisture content as specified.

.4 Forest Stewardship Council (FSC) certified.

.2 Machine stress-rated lumber is acceptable.

.3 Hardwood lumber: moisture content 8% or less in accordance with following standards:

.1 National Hardwood Lumber Association (NHLA).

.2 AWMAC custom grade, moisture content as specified.

2.2 PANEL MATERIAL

.1 Douglas fir plywood (DFP): to CSA O121 , standard construction.

.1 Forestry Stewardship Council (FSC) certified.

.2 Canadian softwood plywood (CSP): to CSA O151 , standard construction.

.3 Hardwood plywood: to ANSI/HPVA HP-1 .

.1 Urea-formaldehyde free.

.4 Poplar plywood (PP): to CSA O153 , standard construction.

.5 Particleboard: to ANSI A208.1 .

.6 Hardboard: to CAN/CGSB-11.3 .

.7 Medium density fibreboard (MDF): to ANSI A208.2 , density 640-800 kg/m^3.

.1 Medium density fibreboard .

.8 Low density fibreboard: to CSA-A247M .

.9 Decorative overlaid composite panels.

.1 Decorative overlay, heat and pressure laminated with suitable resin to thickness indicated 12.7 mm thick particleboard MDF core.

.2 Overlay bonded to both faces where exposed two sides, and when panel material require surface on one side only, reverse side to be overlaid with a plain (buff) balancing sheet.

.3 Furniture finish: selected by RCMP Project Manager .

.4 Edge finishing: matching melamine and polyester overlay edge strip with self-adhesive edge filler to provide a smooth surface for paint finish.

2.3 ACCESSORIES

.1 Nails and staples: to CSA B111; galvanized to CAN/CSA-G164 for exterior work, interior humid areas and for treated lumber; plain finish elsewhere.

.2 Wood screws: plain, type and size to suit application.

.3 Splines: wood.

.4 Adhesive: recommended by manufacturer .

.1 Adhesives: maximum VOC limit 30 g/L SCAQMD Rule 1168 - Adhesives and Sealants Applications.

Part 3 Execution

3.1 INSTALLATION

.1 Do finish carpentry to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.

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

.3 Form joints to conceal shrinkage.

3.2 CONSTRUCTION

.1 Fastening:

.1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.

.2 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.

.3 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round smooth cut hole and plug with wood plug to match material being secured.

.4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.

.2 Standing and running trim:

.1 Butt and cope internal joints of baseboards to make snug, tight, joint. Cut right angle joints of casing and base with mitred joints.

.2 Fit backs of baseboards and casing snugly to wall surfaces to eliminate cracks at junction of base and casing with walls.

.3 Make joints in baseboard, where necessary using a 45 degrees scarf type joint.

.4 Install door and window trim in single lengths without splicing.

.3 Interior and exterior frames:

.1 Set frames with plumb sides and level heads and sills and secure.

.4 Panelling:

.1 Secure panelling and perimeter trim using adhesive recommended for purpose by manufacturer. Fill nail holes caused by temporary fixing with filler matching wood in colour.

.2 Secure panelling and perimeter trim using concealed fasteners.

.3 Secure panelling and perimeter trim using counter sunk screws plugged with matching wood plugs.

.5 Handrails, wall rails and bumper rails.

.1 Make joints hair line, dowelled and glued.

.2 Install brackets at ends and at 1500 mm on centre maximum at intermediate spacings.

.3 Install metal backing plates between studs at bracket locations to ensure proper support for brackets and bolts or self-tapping screws.

.4 Secure using counter sunk screws plugged with matching wood plugs.

.6 Shelving:

.1 Install shelving on shelf brackets.

3.3 SCHEDULES

.1 Standard of Acceptance

.1 Manufacturer: Moulding and Millworks

.2 Material: Finger Joint Pine - Primed

.3 Schedule

.1 Window Casing: Model: MP356 7 /16"x2 ¼"

.2 Base Board: Model: MP3140 – 3/8"x3 ¼"

.2 Shelving:

.1 Construction: Birch Plywood, 19mm thickness, G1S

.2 Shelves: 19MM Melamine surfaced MDF or Particle Board

.3 Shelves with Pilaster strips and strips

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 American Society for Testing and Materials International (ASTM)

- .1 ASTM C208-95(2001), Specification for Cellulosic Fiber Insulating Board.
- .2 ASTM C591-01, Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation.
- .3 ASTM C612-04, Standard Specification for Mineral Fibre Block and Board Thermal Insulation.
- .4 ASTM C726-05, Standard Specification for Mineral Fiber Roof Insulation Board.
- .5 ASTM C728-05, Standard Specification for Perlite Thermal Insulation Board.
- .6 ASTM C1126-04, Standard Specification for Faced or Unfaced Rigid Cellular Phenolic Thermal Insulation.
- .7 ASTM C1289-05a, Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
- .8 ASTM E96/E96M-05, Standard Test Methods for Water Vapour Transmission of Materials.

.2 Canadian Gas Association (CGA)

- .1 CAN/CGA-B149.1-05, Natural Gas and Propane Installation Code Handbook.
- .2 CAN/CGA-B149.2-05, Propane Storage and Handling Code.

.3 Canadian General Standards Board (CGSB)

- .1 CGSB 71-GP-24M-77(R1983), Adhesive, Flexible, for Bonding Cellular polystyrene Insulation.

.4 Underwriters Laboratories of Canada (ULC)

- .1 CAN/ULC-S604-M91, Standard for Type A Chimneys.
- .2 CAN/ULC-S701-05, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Coverings.
- .3 CAN/ULC-S702-97, Standard for Thermal Insulation, Mineral Fibre, for Buildings.
- .4 CAN/ULC-S704-03, Standard for Thermal Insulation Polyurethane and Polyisocyanurate, Boards, Faced.

.5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

- .1 Material Safety Data Sheets (MSDS).

1.2 SUBMITTALS

.1 Product Data:

- .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures .

.2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures . Indicate VOC's insulation products and adhesives.

.2 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

1.3 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.

Part 2 Products

2.1 INSULATION

.1 Rigid extruded Polystyrene insulation to be Styrofoam SM as manufactured by Dow Chemical Canada Inc. Insulation to meet CAN/CGSB-51.20-M87, Type 2, shiplap edges.

.2 Insulation to comply with the following test procedures and standards:

.3 Permeability: 0.9 perms (ASTM E96-80)

.4 Compressive strength: 30 p.s.i. (ASTM D1621-79)

.5 Thermal resistance: R-5.0 (ASTM C518-85) per inch

.6 Water absorption: less than 0.7% (ASTM D2842-69)ADHESIVE

.7 Adhesive (for polystyrene): to CGSB 71-GP-24.

.1 Type: manufacturer approved.

2.2 ACCESSORIES

.1 Insulation fasteners to concrete: X-IE Insulation Fastener, corrosion resistant finish, length to suit insulation; 2 3/8" diameter head by Hilti. Provide minimum 8 fasteners on each insulation board. Dip fasteners into waterproofing membrane material just prior to insertion.

.2 The contractor shall utilize chalk-lines and/or whatever means necessary to ensure that the strapping is installed through the sheathing and into the wall studs. Any punctures through the sheathing shall be sealed.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 WORKMANSHIP

.1 Install insulation after building substrate materials are dry.

.2 Install insulation to maintain continuity of thermal protection to building elements and spaces.

.3 Fit insulation tight around electrical boxes, plumbing and heating pipes and ducts, around exterior doors and windows and other protrusions.

.4 Keep insulation minimum 75mm from heat emitting devices such as recessed light fixtures, and minimum 50 mm from sidewalls of CAN4-S604 type A chimneys and CAN/CGA-B149.1 and CAN/CGA-B149.2 type B and L vents.

.5 Cut and trim insulation neatly to fit spaces. Butt joints tightly, offset vertical joints. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.

.6 Offset both vertical and horizontal joints in multiple layer applications.

.7 Do not enclose insulation until it has been inspected and approved by Consultant.

3.3 EXAMINATION

.1 Examine substrates and immediately inform Consultant in writing of defects.

.2 Prior to commencement of work ensure:

.1 Substrates are firm, straight, smooth, dry, free of snow, ice or frost, and clean of dust and debris.

3.4 RIGID INSULATION INSTALLATION

.1 Apply manufacturer specified adhesive to polystyrene at rate recommended by manufacturer notched trowel in accordance with manufacturer's recommendations.

.2 Imbed insulation boards into vapour barrier type adhesive, applied as specified, prior to skinning of adhesive.

.3 In addition to adhesive, install mineral fibre insulation boards with insulation clips and disk, 2 per 600 x 1200 mm board minimum, fit boards tight, cut off fastener spindle 3 mm beyond disk.

.4 Leave insulation board joints unbonded over line of expansion and control joints. Bond a continuous 150 mm wide 0.15 mm modified bituminous membrane over expansion and control joints using compatible adhesive and primer before application of insulation.

3.5 PERIMETER FOUNDATION INSULATION

.1 Interior application: extend boards as indicated, installed on inside face of perimeter foundation walls.

.2 Exterior application: extend boards to top of footing. Install on exterior face of perimeter foundation wall with adhesive.

.3 Under slab application: extend boards as indicated. Lay boards on level compacted fill.

3.6 CLEANING

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

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-51.33-M89, Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction.

.2 CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet, for Use in Building Construction.

1.2 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:

.1 Product characteristics.

.2 Performance criteria.

.3 Limitations.

.3 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS).

1.3 DELIVERY, STORAGE AND HANDLING

.1 Waste Management and Disposal:

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal .

Part 2 Products

2.1 SHEET VAPOUR BARRIER

.1 Polyethylene film: to CAN/CGSB-51.34, 6 mil thick.

2.2 ACCESSORIES

.1 Joint sealing tape: air resistant pressure sensitive adhesive tape, cloth fabric duct tape type recommended by vapour barrier manufacturer, 50 mm wide for lap joints and perimeter seals, 25 mm wide elsewhere.

.2 Sealant: compatible with vapour retarder materials, recommended by vapour retarder manufacturer. To Section 07 92 00 - Joint Sealing .

.3 Staples: minimum 6 mm leg.

.4 Moulded box vapour barrier: factory-moulded polyethylene box for use with recessed electric switch and outlet device boxes.

Part 3 Execution

3.1 INSTALLATION

.1 Ensure services are installed and inspected prior to installation of retarder.

.2 Install sheet vapour retarder on warm side of exterior wall ceiling assemblies prior to installation of gypsum board to form continuous retarder.

.3 Use sheets of largest practical size to minimize joints.

.4 Inspect for continuity. Repair punctures and tears with sealing tape before work is concealed.

3.2 EXTERIOR SURFACE OPENINGS

.1 Cut sheet vapour retarder to form openings and ensure material is lapped and sealed to frame.

3.3 PERIMETER SEALS

.1 Seal perimeter of sheet vapour barrier as follows:

.1 Apply continuous bead of sealant to substrate at perimeter of sheets.
.2 Lap sheet over sealant and press into sealant bead.
.3 Install staples through lapped sheets at sealant bead into wood substrate.
.4 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.4 LAP JOINT SEALS

.1 Seal lap joints of sheet vapour barrier as follows:

.1 Attach first sheet to substrate.
.2 Apply continuous bead of sealant over solid backing at joint.
.3 Lap adjoining sheet minimum 150 mm and press into sealant bead.
.4 Install staples through lapped sheets at sealant bead into wood substrate.
.5 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.5 ELECTRICAL BOXES

.1 Seal electrical switch and outlet device boxes that penetrate vapour barrier as follows:

.1 Install moulded box vapour barrier Wrap boxes with film sheet providing minimum 300 mm perimeter lap flange.

.2 Apply sealant to seal edges of flange to main vapour barrier and seal wiring penetrations through box cover.

3.6 CLEANING

.1 Proceed in accordance with Section 01 74 11 - Cleaning .

.2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

PART 1 GENERAL

1.1 Description

.1 To replace the existing asphalt shingle roofs complete with related accessories.

1.2 Scope of Work

.1 Furnish labour, material, equipment and services necessary for demolition and removal of identified items and replacing with new materials or salvaging of existing as per the enclosed specifications. Including in general:

a) Total removal of roofing material to bare decking and waste materials from site on a daily basis.

b) Carry out demolition in orderly and careful manner, and in strict accordance with the requirements of local and provincial authorities having jurisdiction.

c) Installation of new materials as specified here in.

1.3 Selection of Product

.1 Colours are to be selected by RCMP Project Manager from the manufacturer's standard range. Acceptable manufacturers are Emco BP (5 year Star Warranty), CRC, or IKO, using the ShieldPro plus+ Program with the following restrictions:

1. the installing contractor must be a qualified ShieldPro plus+ Professional Residential Roofing Contractor;
2. the installation must be a ShieldPro plus+ Roof System with no exemptions;
3. the installing contractor must register and pay for the ShieldPro plus+ Iron Clad Protection Plan Extension on behalf of RCMP within ten (10) days of completion;
4. the installing contractor will provide Tear-off Protection to RCMP at no extra cost.

1.4 Responsibility

.1 It is the Contractor's responsibility to take his own on-site measurements.

PART 2 PRODUCTS

2.1 Materials

.1 **Replacement shingles** shall be EMCO Harmony, #1 grade, fourth year (40) warranty, self sealing fibreglass shingles (hand tabbed) or approved equal. Approved equals warranty must meet or exceed the specified products.

.2 **Valley and eaves protection** shall be modified bituminous, self adhering membrane, IKO ice and water protector, B.P ProGuard™, Vycor® Ice and Water Shield®, or approved equal.

.3 **Tabbing compound** shall be plastic roofing cement, meeting or exceeding CGSB specification 37-DP-SMA.

.4 **Mastic** shall be Polyroof as manufactured by Tremco® Ltd., Polybitumen 570-05 as manufactured by Monsey Bakor, or approved equal.

.5 **Aluminium paint** shall be Tremco® Double Duty, or approved equal. To be applied to all areas where roofing cement surfaces are exposed to the weather.

.6 **Sealant** shall be Tremco® Tremflex 25, or approved equal.

.7 **Attic vents** shall be Duraflow Slant Back Roof Vent (R61) as manufactured by Canplas Industries or approved equal, sized to meet those being replaced.

.8 **Ridge vent** shall be a PVC material, shingle-over Ridge Vent as manufactured by Ridgemaster™, available from Kaycan Ltd., or approved equal.

.9 **Underlayment** shall be TRI-FLEX XTREME by GRACE Construction Products, FelTex by Gray, S-GARD by BP Synthetic roof underlayment or approved equal. Underlayment shall cover entire roof area to receive new shingles with minimum 4" (100mm) overlap onto self-adhering bituminous starter strip, minimum 4" (100mm) lap on all horizontal joints and 8" (200mm) lap on all vertical joints. **Felt underlay #15 is not acceptable.**

.10 **Drip edge flashing** shall be pre-painted aluminium, minimum 0.48 mm (.018") thickness, sized as per the location requirement, with a pre-formed drip edge. Pre-finished flashings to be chosen from the standard in stock range of Stelco 8000 series colours.

.11 **Metal flashing** shall be galvanized or prefinished steel and a minimum of .48mm (.018") thickness. Includes step, counter, chimney, curb, saddle, electrical masts, etc. Pre-finished flashings to be chosen from the standard in stock range of Stelco 8000 series colours.

.12 Vent stack seals shall be 'B' Series EPDM Roof Vent Flashings as manufactured by Waterline or approved equal.

.13 Accessories;

Screws: Hex head "siding" fasteners designed for exposure to the weather.
Nails: Galvanized steel, large head (min. 9.5mm), sufficient length to penetrate deck at least 20 mm (3/4"). STAPLES ARE NOT ACCEPTABLE.

.14 **Lumber:** Dimensional #2 spruce to match existing thickness'. ** All fascia lumber being replaced will be pressure preservative treated wood.

.15 **Roof sheathing:** Standard exterior grade spruce plywood or OSB to match existing material and/or thickness.

2.2 Workmanship

.1 All work to be performed in accordance with the manufacturers Instructions and meet or exceed industry standard.

.2 All work to meet or exceed the latest edition and revisions of the Manitoba Building Code.

.3 Labour shall be warranted for a minimum period of **2 years against leakage,** from the date of substantial performance.

PART 3 EXECUTION

3.1 Roof Replacement

.1 All shingles shall be removed from the roof and in such a manner as not to damage or expose the buildings to damage (physical or weather). Protect building components and landscaping with tarpaulins and ground sheets, while stripping off existing shingles.

.2 All shingles shall be removed from the site and all nails or staples picked up with a drag magnet and disposed of at a legal dumpsite. Pile new bundles of shingles and plywood so as to prevent stress/weight on the existing roof structure.

.3 Upon the removal of the shingles, inspect the building structure for dry rot damage or deterioration of existing roof sheathing, fascia boards, trimmers, plates and trusses. Report any rot to owner immediately prior to the installation of any shingles.

.4 No more shingles shall be removed in one day than can be recovered with new shingles or tarps and made weatherproof.

.5 Pre-finished metal drip edge flashing shall be provided to all fascia edges.

.6 Eave protection: A protective sheet of bituthene self adhering membrane laid with joints lapped at least 100 mm shall be placed over the eaves on the roof sheathing of all shingle installations. This protective sheet shall extend from the edge of the roof to a line at least 300 mm inside the inner face of the exterior wall. All laps are to be wrinkle free and fully adhered. Appropriate deck primer shall be used when installing in colder weather, as per manufacturer's recommendations.

.7 On slopes of less than 1 in 3, the application shall be **triple coverage.** When using 25 year, 3 tab shingles the eaves protection shall be bituthene self-adhering membrane, width as calculated in .6 above. The balance of the roof decking to be covered with a double dry layer of roofing felt, lapped 18".

.8 On slopes of 1 in 3 or greater, use double coverage, deleting the double layer of roofing felt. Eaves protection remains as specified in item .6 above.

.9 A starter strip at least 300 mm wide, nailed along the bottom edge at 300 mm intervals, shall be placed along the eaves under the first course of shingles so that it extends at least 12 mm beyond the eaves and fascia board to form a drip edge.

.10 Install the shingles as per manufacturer's instructions, with straight key lines. No off-set key line installations will be accepted.

.11 Valleys: A **double width, 1500mm (5')** protective sheet of bituthene self adhering membrane laid with end joints lapped at least 100 mm and side joints lapped 300mm shall be placed in all valleys. Full shingles shall be laid in valley with minimum 1/2 shingle length overlapping the opposite roof plane. In valleys of uneven pitch, the lower pitch plane shall be shingled first. In valleys of equal pitch the shorter plane shall be shingled first. Clip off the top corner of each shingle edge located in the valley.

.12 Each shingle strip shall be nailed with four (4) 25.4 mm large head roofing nails, except use six (6) 25.4 mm large head roofing nails on slopes of greater than 1 in 1 (12/12). When a nail penetrates a crack or knothole, another nail shall be driven along side into sound wood. Nail locations to be as per manufacturer's recommendations.

.13 **Cementing the tabs (manual tabbing) of shingles is required for all areas. Where interlocking type shingles are installed, cement down the partial shingles and capping shingles.** Plastic cement shall be used for this purpose with a spot, approximately 25 mm in diameter, being placed under the centre of each tab. Ambient temperature shall be above 5 Celsius for tabbing application. **Shingles must be tabbed on the same day as they are installed.**

.14 Chalk lines are to be snapped at regular intervals to ensure the shingles are installed in straight vertical and horizontal lines.

.15 Check all plumbing vent, roof vent, bathroom exhaust hood, step, counter and chimney flashings; if sound, **reseal the old flashings with concealed roofing cement** and fasten with weather resistant hex head screws as fasteners. Report damaged flashings to the Owner.

.16 All exposed nail heads and screw heads shall be protected with a layer of caulk using an exterior grade silicone based, long life caulk (20 year caulk). Or roofing cement coated with aluminium paint.

.17 When replacing chimney flashings, revise the configuration as necessary to meet or exceed current Codes and good construction practices for new flashing and counter flashing.

Part 1 General

1.1 SECTION INCLUDES

.1 Requirements for installation of plywood, hardboard and lumber siding.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.3 Section 07 62 00 - Sheet Metal Flashing and Trim.

.4 Section 07 92 00 - Joint Sealing.

.5 Section 09 91 13 - Exterior Painting.

1.3 REFERENCES

.1 American Society for Testing and Materials International, (ASTM).

.1 ASTM D5116-97, Standard Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.

.2 Canadian General Standards Board (CGSB).

.1 CAN/CGSB-11.3-M87, Hardboard.

.2 CAN/CGSB-11.5-M87, Hardboard, Precoated, Factory Finished, for Exterior Cladding.

.3 CAN/CGSB-11.6-M87, Installation of Exterior Hardboard Cladding.

.4 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.

.3 Canadian Standards Association (CSA International).

.1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.

.2 CSA O121-M1978(R1998), Douglas Fir Plywood.

.3 CSA O151-M1978(R1998), Canadian Softwood Plywood.

.4 CAN/CSA-Z808-96, A Sustainable Forest Management System: Guidance Document.

.4 Environmental Choice Program (ECP).

.1 CCD-045-95, Sealants and Caulking Compounds.

.5 National Lumber Grades Authority (NLGA).

.1 NLGA Standard Grading Rules for Canadian Lumber 2003.

1.4 SUBMITTALS

.1 Product Data:

.1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures .

.2 Samples:

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures .

.3 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

1.5 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.

Part 2 Products

2.1 MATERIALS

.1 Hardboard siding:

.1 Factory finished: to CGSB 11.5, KWP NATURE TECH hardboard siding Prestige Double 5" duchlap, colour selected by Consultant from manufacturers standard colors.

.2 Trimboard

.1 Factory Finished: to CGSB 11.5, KWP Nature Tech Hardbard trimboard 5/4"

.3 Accessories: exposed trim, closures, cap pieces of manufacturer's standard.

.4 Exterior wall sheathing paper: to CAN/CGSB-51.32 Typar or approved equal

.5 Fasteners: nails to CSA B111, as per manufacturers instructions.

.6 Sealants: as per manufacturer.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 INSTALLATION

.1 Install hardboard to CGSB11-GP-6M and manufacturers' instructions.

.2 Install one layer sheathing paper horizontally by stapling , lapping edges 100 mm.

.3 Install sill flashings, wood starter strips, inside corner flashings, edgings and flashings over openings.

.4 Fasten wood siding in straight, aligned lengths to sheathing as per manufacturers instructions. Stagger butt joints not less than 800 mm and distribute evenly over wall faces . Cut butt joints at 45 degrees and for vertical siding slope to outside . Seal cut surfaces.

3.3 CLEANING

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

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM International)

- .1 ASTM A167-99, Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
- .2 ASTM A240/A240M-02, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
- .3 ASTM A591/A591M-98, Standard Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Mass Applications.
- .4 ASTM A606-01, Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance.
- .5 ASTM A653/A653M-01a, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .6 ASTM A792/A792M-02, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- .7 ASTM B32-00, Standard Specification for Solder Metal.
- .8 ASTM B370-98, Standard Specification for Copper Sheet and Strip for Building Construction.
- .9 ASTM D523-89(1999), Standard Test Method for Specular Gloss.
- .10 ASTM D822-01, Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.

.2 Canadian Roofing Contractors Association (CRCA)

- .1 Roofing Specifications Manual 1997.

.3 Canadian General Standards Board (CGSB)

- .1 CAN/CGSB-37.5-M89, Cutback Asphalt Plastic Cement.
- .2 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.
- .3 CAN/CGSB-93.1-M85, Sheet Aluminum Alloy, Prefinished, Residential.

.4 Canadian Standards Association (CSA International)

- .1 CSA A123.3-98, Asphalt Saturated Organic Roofing Felt.
- .2 CSA-A440-00/A440.1-00 - A440-00, Windows / Special Publication A440.1-00, User Selection Guide to CSA Standard A440-00, Windows.

.3 CSA B111-1974(R1998), Wire Nails, Spikes and Staples.

1.3 SAMPLES

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit 50 x 50 mm samples of each type of sheet metal material, colour and finish.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper plastic polystyrene corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Place materials defined as hazardous or toxic in designated containers.

.5 Ensure emptied containers are sealed and stored safely for disposal away from children.

.6 Divert unused metal materials from landfill to metal recycling facility as approved by Engineer Consultant.

.7 Unused paint and sealant material must be disposed of at an official hazardous material collections site as approved by Engineer Consultant.

.8 Unused paint and sealant material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.

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

Part 2 Products

2.1 SHEET METAL MATERIALS

.1 Zinc coated steel sheet: commercial quality to ASTM A653/A653M, with Z275 designation zinc coating.

.2 Aluminum-zinc alloy coated steel sheet: to ASTM A792/A792M, commercial quality, grade 33 with AZ150 AZ180 coating, regular spangle extra smooth surface, chemically treated for unpainted finish not chemically treated for paint finish, mm base metal thickness.

.3 Electrolytic zinc coated, chromate treated, steel sheet: to ASTM A591/A591M, commercial quality, , copper bearing with proprietary coating comprised of 31.1 kg/m^2 zinc total mass both sides, painted unpainted finish.

.4 Textured stainless steel sheet: proprietary flat rolled stainless steel sheet product, random pebble pattern, standard mill product number .

.5 Weathering steel sheet: to ASTM A606 high strength low alloy hot cold rolled architectural use grade, 1.2 mm minimum thickness.

.6 Aluminum sheet: proprietary utility sheet plain embossed pattern, mm minimum thickness.

2.2 PREFINISHED ALUMINUM SOFFIT

.1 Manutacturer: Gentek Product: High Tensile 0515036 600, Color to match existing

.2 Or approved equal.

2.3 ACCESSORIES

.1 Isolation coating: alkali resistant bituminous paint.

.2 Plastic cement: to CAN/CGSB 37.5.

.3 Underlay for metal flashing: No. 15 perforated asphalt felt to CSA A123.3.

.4 Sealants: As Per Manufacturers Recommendations.

.5 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured.

.6 Fasteners: of same material as sheet metal, to CSA B111, ring thread flat head roofing nails of length and thickness suitable for metal flashing application.

.7 Washers: of same material as sheet metal, 1 mm thick with rubber packings.

.8 Touch-up paint: as recommended by prefinished material manufacturer.

2.4 FABRICATION

.1 Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA 'FL' series details as indicated.

.2 Fabricate aluminum flashings and other sheet aluminum work in accordance with AA-Aluminum Sheet Metal Work in Building Construction.

.3 Form pieces in 2400 mm maximum lengths. Make allowance for expansion at joints.

.4 Hem exposed edges on underside 12 mm. Mitre and seal corners with sealant.

.5 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

.6 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

2.5 METAL FLASHINGS

.1 Form flashings, copings and fascias to profiles indicated of .96mm thick prefinished weathering steel color to match vertical steel siding.

2.6 EAVES TROUGHS AND DOWNPIPES

.1 Form eaves troughs and downpipes from prefinished steel sheet metal.

.2 Sizes and profiles as indicated.

.3 Provide goosenecks, outlets, strainer baskets and necessary fastenings.

Part 3 Execution

3.1 INSTALLATION

.1 Install sheet metal work in accordance with CRCA FL series details, FL Aluminum Sheet Metal Work in Building Construction.

.2 Use concealed fastenings except where approved before installation.

.3 Provide underlay under sheet metal. Secure in place and lap joints 100 mm.

.4 Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs. Flash joints using standing seams forming tight fit over hook strips, as detailed.

.5 Lock end joints and caulk with sealant.

.6 Turn top edge of flashing into recessed reglet or mortar joint minimum of 25 mm. Lead wedge flashing securely into joint.

.7 Caulk flashing at reglet cap flashing with sealant.

.8 Install pans, where shown around items projecting through roof membrane.

3.2 EAVES TROUGHS AND DOWNPIPES

.1 Install eaves troughs and secure to building at 750 mm on centre with eaves trough spikes through spacer ferrules. Slope eaves troughs to downpipes as indicated. Solder joints watertight.

.2 Install downpipes and provide goosenecks back to wall. Secure downpipes to wall with straps at 1800 mm on centre; minimum two straps per downpipe.

.3 Install splash pans as indicated.

END OF SECTION

PART 1 GENERAL

1.1 Description

.1 Remove existing gutters and downspouts.

.2 Repair or replace existing fascia boards as required.

.3 Remove existing soffits and replace with new pre-finished aluminum soffits as shown.

.4 Provide air chutes and insulation stops.

.5 Provide new pre-finished aluminum fascia, gutters, roof edge trim and down pipes.

.6 Provide heavy duty steel rain water leader and concrete splash pads.

1.3 Selection of Product

.1 Colours and type are to be selected by Project Manager from the manufacturer's standard range.

1.4 Responsibility

.1 It is the Contractor's responsibility to confirm site measurements.

PART 2 PRODUCTS

2.1 Aluminum Products

.1 Aluminum: AA3000 Aluminum Alloy
Finish: Chrome pretreated sheet with a 2 coat baked-on finish

.2 Fascia cladding: Pre-finished Aluminum – minimum thickness 0.53 mm (.021"), with matching undersill trim/drip edge flashing (.48mm, [.018"] thick).
Soffit: Pre-finished Aluminum – minimum thickness 0.38 mm (.015") to meet or exceed the ULC/CAN4-S114 non-combustibility standard.
Gutter: Pre-finished Aluminum, one side painted – 5"(127mm) x .026" (0.66 mm) minimum thickness
Downpipes: Pre-finished Aluminum, one side painted – 2"X3"(51mmX75mm) x .022" (0.56 mm) minimum thickness
Open front downpipe: Aluminum Pre-finished outside, mill finish inside, 4"x3" (100mmx75mm) .83mm(.032") minimum thickness, minimum of 3 evenly spaced front braces riveted to downpipe.
Downpipe connection: Heavy gauge mill finish connector between gutter outlet and connecting downpipe, sized to suit. i.e. Kaycan Ltd. part No. 2570/2580 B drop outlet, or approved equal.

2.2 Rainwater Leader

.1 H.D. Rainwater Leader: 4" O.D.(100mm) x 0.125"(3.17mm)wall thickness x 10'(3m) long steel pipe complete with 30-45 degree discharge chute and 2 anchor plates welded in place. Pipe to be primed with metal primer and painted with 2 coats of alkyd semi-gloss paint. Finish color to match wall finish.

2.3 Hardware

.1 Gutter Hangers: 5" (127mm) extruded aluminum gutter hanger.

.2 Screws: NiCad pan head screws, purpose made for each application and of sufficient length to penetrate framing a minimum of 25 mm (1"). STAPLES ARE NOT ACCEPTABLE.

.3 Lag Screws: ¼"(6.3mm) galvanized screws of sufficient length to penetrate framing or brick/concrete a minimum of 2"(50mm)

2.4 Replacement Wood Fascia

.1 Wood Fascia: Pressure preservative treated dimensional #2 lumber or standard grade fir plywood, 3/4" (75mm) thickness or as otherwise specified.

2.5 Splash pad

.1 Splash pad: 12" x 30" x 4" (300mm x 760mm x 10mm), contoured, natural finish.

PART 3 EXECUTION

3.1 Preparation

.1 Remove existing soffit on eaves of dwelling. After removal of existing eavestrough and plywood soffit, examine existing wood fascia and rafter ends and report the presence of any rotten, damaged or deteriorated lumber or plywood to the Owner. Upon authorization, remove all rotten, damaged and deteriorated lumber and plywood as necessary. The cost of all repairs as noted above shall be based on unit prices established in a schedule if requested.

3.2 Insulation Stops and Air Chutes

.1 Install insulation stops in each rafter space. Install 2 X 2 (nominal) and 1/4" or 3/8" plywood ventilation chutes between every rafter. Ventilation chutes to extend minimum 6" above existing insulation. Contractor may use existing soffit plywood to construct air chutes providing same is undamaged during removal and not delaminated or rotten. Alternately, extruded polystyrene air chutes may be used, 6" past the highest point of insulation.

3.3 Soffit and Fascia

.1 Install aluminum fascia and ventilated soffit to including all necessary trim pieces. Soffit to be secured with screws, installed in interlocking joint and center rib and

screwed into existing wood fascia. All moldings and trims to be fastened using screws at maximum 400 mm (16") o.c.

.2 Aluminum fascia to be installed on eaves over existing wood fascia and secured by installing fascia under roof edge trim. On rakes, aluminum fascia to be installed into sill trim; sill trim to be nailed flush with top edge of wood fascia. Where there is an existing drip edge trim, fascia can be installed under drip edge and no sill trim will be required. Aluminum fascia to be fastened with screws within 150 mm (6") of panel ends and at maximum 900 mm (36") o.c. Screws to be driven through **bottom** lip of aluminum fascia into bottom edge of wood fascia.

.3 Install colour matched, roof edge trim at all eavestrough roof edges.

3.4 Gutters and Downspouts

.1 Gutters to be continuous run with no joints, installed at all eaves. End caps to be installed at termination points, sealed with concealed, exterior grade, waterproof silicone sealant, colour matched to finish. B-drop connector to be installed from the top into a bead of silicone sealant and secured with 4 screws. Secure downpipe to B-drop with 2 screws. Slope all trough to downpipes with minimum grade of 1:250.

.2 Anchor gutter at 600 mm (24") maximum spacing using gutter clips screwed into rafter ends. Nails and ferrules are not acceptable

.3 Downpipes to be installed in existing locations, unless otherwise noted. Advise the owner if catchment area of any one downpipe, exceeds 100 m^2 (1075 ft^2)

.4 Secure downspouts through the exterior walls into wood framing or into brick/concrete work with sheet metal straps, maximum spacing 2000 mm (6.5 ft.)

.5 Provide heavy duty rain water leader at lower 3m (10 ft.) Secure leader to joist headers or other solid framing using a minimum of 4 lag screws.

3.5 Splashpad

.1 Install splash pad at all rain water leader locations. Splash pad to be sloped away from the building.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Materials, preparation and application for caulking and sealants.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.3 Section 01 45 00 - Quality Control.

.4 Section 01 61 00 - Common Product Requirements.

1.3 REFERENCES

.1 American Society for Testing and Materials International, (ASTM)

.1 ASTM C919-02, Standard Practice for Use of Sealants in Acoustical Applications.

.2 Canadian General Standards Board (CGSB)

.1 CGSB 19-GP-5M-1984, Sealing Compound, One Component, Acrylic Base, Solvent Curing (Issue of 1976 reaffirmed, incorporating Amendment No. 1).

.2 CAN/CGSB-19.13-M87, Sealing Compound, One-component, Elastomeric, Chemical Curing.

.3 CGSB 19-GP-14M-1984, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).

.4 CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.

.5 CAN/CGSB-19.24-M90, Multi-component, Chemical Curing Sealing Compound.

.3 Department of Justice Canada (Jus)

.1 Canadian Environmental Protection Act, 1999 (CEPA).

.4 General Services Administration (GSA) - Federal Specifications (FS)

.1 FS-SS-S-200-E(2)1993, Sealants, Joint, Two-Component, Jet-Blast-Resistant, Cold Applied, for Portland Cement Concrete Pavement.

.5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.6 Transport Canada (TC)

.1 Transportation of Dangerous Goods Act, 1992 (TDGA).

1.4 SUBMITTALS

.1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.

.2 Manufacturer's product to describe.

- .1 Caulking compound.
- .2 Primers.
- .3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.

.3 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.4 Submit duplicate samples of each type of material and colour.

.5 Cured samples of exposed sealants for each color where required to match adjacent material.

.6 Submit manufacturer's instructions in accordance with Section 01 33 00 - Submittal Procedures.

- .1 Instructions to include installation instructions for each product used.

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements.

.2 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.

1.6 PROJECT CONDITIONS

.1 Environmental Limitations:

- .1 Do not proceed with installation of joint sealants under following conditions:
  - .1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C.
  - .2 When joint substrates are wet.

.2 Joint-Width Conditions:

- .1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

.3 Joint-Substrate Conditions:

- .1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.7 ENVIRONMENTAL REQUIREMENTS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and

regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to Labour Canada.

.2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

Part 2 Products

2.1 SEALANT MATERIALS

.1 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.

.2 When low toxicity caulks are not possible, confine usage to areas which offgas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize offgas time.

.3 Where sealants are qualified with primers use only these primers.

2.2 SEALANT MATERIAL DESIGNATIONS

.1 Sealant manufacturers to provide product catalogue. Subject to Consultants approval.

.2 Urethanes One Part.

.1 Self-Leveling to CAN/CGSB-19.13, Type 1, colour as selected.

.3 Urethanes One Part.

.1 Non-Sag to CAN/CGSB-19.13, Type 2, MCG-2-25 MCG-2-40, colour as selected.

.4 Silicones One Part.

.1 To CAN/CGSB-19.13.

.1 Selant type: one part, acetoxy silicone sealant, cures to a flexible rubber when exposed to moisture present in the air, containin a fungicide, suitable for use in bathrooms, spas, and similar applications where joints need protection against fungi and bacteria. .

.5 Acoustical Sealant.

.1 To ASTM C919.

.2 Acceptable material:single component, non-skinning, non-hardening synthetic rubber, dark gray color, designed for use in drywall partitions to inhibit air movement and buffer vibration

.6 Acrylic Latex One Part

.1 To CAN/CGSB-19.17

.7 Preformed Compressible and Non-Compressible back-up materials.

.1 Polyethylene, Urethane, Neoprene or Vinyl Foam.

.1 Extruded closed cell foam backer rod.

.2 Size: oversize 30 to 50 %.

.2 Neoprene or Butyl Rubber.

.1 Round solid rod, Shore A hardness 70.

.3 High Density Foam.

.1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m^3 density, or neoprene foam backer, size as recommended by manufacturer.

.4 Bond Breaker Tape.

.1 Polyethylene bond breaker tape which will not bond to sealant.

2.3 JOINT CLEANER

.1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

.2 Primer: as recommended by manufacturer.

Part 3 Execution

3.1 PROTECTION

.1 Protect installed Work of other trades from staining or contamination.

3.2 SURFACE PREPARATION

.1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.

.2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair Work.

.3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.

.4 Ensure joint surfaces are dry and frost free.

.5 Prepare surfaces in accordance with manufacturer's directions.

3.3 PRIMING

.1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

.2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.4 BACKUP MATERIAL

.1 Apply bond breaker tape where required to manufacturer's instructions.

.2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 MIXING

.1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.6 APPLICATION

.1 Sealant.

- .1 Apply sealant in accordance with manufacturer's written instructions.
- .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
- .3 Apply sealant in continuous beads.
- .4 Apply sealant using gun with proper size nozzle.
- .5 Use sufficient pressure to fill voids and joints solid.
- .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
- .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
- .8 Remove excess compound promptly as work progresses and upon completion.

.2 Curing.

- .1 Cure sealants in accordance with sealant manufacturer's instructions.
- .2 Do not cover up sealants until proper curing has taken place.

.3 Cleanup.

- .1 Clean adjacent surfaces immediately and leave Work neat and clean.
- .2 Remove excess and droppings, using recommended cleaners as work progresses.
- .3 Remove masking tape after initial set of sealant.

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE OF WORK

.1 Shall include for the furnishing of labor, material, equipment and services necessary and incidental to the general replacement of the exterior door units using pre-hung insulated door units and components as described herein.

1.2 SAMPLES

.1 Prior to use in this project, a corner sample showing sill and side jamb sections shall be submitted to the Owner for approval. Submittals shall include a copy of the most recent CCMC Building Material Evaluation Report, and backup test report(s). Prior to a review by the Owner, shop drawings shall be firstly reviewed by the Contractor.

1.3 REFERENCES

All reference standards shall be current issue or latest revision at the date of building permit issue. This specification refers to the following standards, specifications or publications:

.1 CAN/CGSB-82.5-M88 standard for insulated steel doors (slab)

.2 Zinc coating in accordance with ASTM standard A-525 (A25)

.3 Primed steel finish to CGSB 82-GP-5M

.4 CAN/CGSB-12.8, Insulating Glass Units

.5 CSA-A440.4, Window and Door Installation

.6 Most recent edition of the National Building Code, with Manitoba Amendments

1.4 TEST REPORTS

.1 The Owner reserves the right to require tests by an independent testing laboratory to determine compliance with Standards applying to the type of materials specified.

1.5 MAINTENANCE DATA

.1 Provide operation and maintenance data for doors for incorporation into Manitoba Housing operation and maintenance manual.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Metal insulated door shall be primed, 24 gauge. thickness steel surfaces, permanently bonded to a polyurethane foam core, glued to wood rails and crimped and glued to wood stiles. Door shall be 6 panel embossed design, 1 ¾" (44.5mm) thickness, and 2 ¾" backset, unless specified otherwise. Width and height to match existing doors being replaced unless specified otherwise.

.2 All lumber frame and brickmould components to be of clear fir, and come with a prepainted factory finish. Finger jointed material will be accepted.

.3 Weather-stripping on the interior jamb shall be a nylon jacketed compression type at head and jambs, designed for easy replacement, and an adjustable door sweep at sill.

.4 The sill shall be thermally broken aluminum clad (over pressure treated wood sub-sill). The exposed part of all sills, on the exterior side of the unit to have a minimum 5 ° slope.

.5 When glazed inserts are called for, the glazing shall be minimum dual pane, tempered safety glass, with ½" airspace.

Provide written warranty for glazing seal failure against material or manufacturing defects occurring within 10 years from the date of substantial performance.

.6 Primer: for touch-up to CGSB 1-GP-181M+Amdt-Mar-78.

.7 Hardware to be Schlage® AL10S Saturn complete with kick plate and floor stop; Latch set A Series; Deadbolt B660R, backsets 2 3/4. Finish of latch set to match finish of deadbolt.

.8 All keys are to be cut to Schlage specified depths and spacing, no custom depths will be considered acceptable.

.11 All keys are to be stamped with the appropriate nomenclature and key quantity. No other stamping will be allowed. (company name, do not duplicate etc.)

.12 Provide 4 operating keys for every lock supplied.

.17 Hinges to be minimum 1 ½ pair of butt hinges, 4"x4" silver 626 or silver finish.

.18 Interior casings and sill molding shall be of solid wood and profile to match existing trim. Finish to match existing color.

.19 All door units to have one 626 or silver finish "peep hole" door viewer at regular height.

2.2 FABRICATION

.1 Fabricate steel doors as detailed, in accordance with Canadian Steel door and Frame Manufacturer's Association, "Canadian Manufacturing Specifications for Steel Doors and Frames: latest edition.

.2 Assemble door pre-hung in completed frame, frame corners to be glued and screwed.

.3 Make provision for glazing as indicated and provide necessary glazing stops.

.4 Construct matching sidelite panels in same manner as doors, as indicated.

.5 Touch up doors with primer where finish is damaged during fabrication/installation.

PART 3 - EXECUTION

3.1 INSTALLATION

.1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions. Follow installation of all doors in accordance to CSA standards field installation recommendations, and additional instructions listed in these documents.

.2 Adjust operable parts for correct function. Insure assemblies are plumb, level and free of warp or twist. Maintain dimensional tolerances and alignment with existing frame.

.3 The door units are to be fastened with #10, 3 1/2" "deck" screws, one per hinge and 3 on the lock side, or as per manufacture's specifications. Conceal the heads of the screws behind the weather-stripping on the jambs. Fastening locations to be pre-drilled to prevent splitting of the wood jambs. Where fastener heads need to be exposed, i.e. on a sidelite, install plastic caps over the screw heads.

.4 Doorbells on existing door frames to be removed, without damage, and reinstalled in similar fashion on new frame.

.5 Door sill threshold blocking to be adjusted and modified to ensure correct placement of new sill to prevent backsloping of sill / threshold.

.6 All spaces between the door frame and the rough opening to be filled to a minimum depth

of 50 mm (2"), with low-expansion one component polyurethane foam to ensure air and vapour seal. For cold weather installation, install ethafoam rod or fibreglass insulation backer on exterior face of jamb, prior to filling the cavity with foam. Sill to be sealed to sub floor, brick mould to be caulked to existing exterior finish.

.7 All existing flashings and drip mouldings to remain in place. If such flashings are damaged during the removal of existing or installation of new doors, or if the existing flashings are not adequate to cover the new doors, these flashings must be replaced at the Contractor's expense.

.8 Supply and install shims as recommended by the manufacturer.

.9 Install interior casings and bottom sill moulding; patch and paint to conceal nail heads, matching existing paint finish.

.10 Notify the Owner's representative if doorstop devises are missing.

END OF SECTION

Part 1 - GENERAL

1.1 SECTION INCLUDES

.1 The supply and installation of aluminum screen and storm doors complete with related accessories.

.2 Manufacturing, supply and installation of new aluminum screen and storm doors and all other miscellaneous works required to complete the work as shown and detailed on the drawings and/or as specified herein.

.3 Furnishing all labour, materials, equipment, supervision, and incidentals necessary in installation of aluminum screen and storm doors.

1.2 REFERENCES

All reference standards shall be current issue or latest revision at the date of building permit issue. This specification refers to the following standards, specifications or publications:

.1 Canadian General Standards Board (CGSB):

.1 CGSB 82-GP-3M Doors, Aluminum, Combination Storm and screen.

.2 American Society for Testing and Materials (ASTM):

.1 ASTM B 209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

.2 ASTM B 221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

.3 ASTM C 1048 Standard Specification for Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass

.4 ASTM C 920 Standard Specification for Elastomeric Joint Sealants

1.2 SAMPLES

.1 Prior to use in this project, a sample door shall be submitted to the Owner for approval. Submittals shall include a copy of the most recent CMHC Building Material Evaluation Report, and backup test report(s).

1.3 SHOP DRAWINGS

.1 Submit shop drawings to Owner.

.2 Show elevations of storm door units, full-size section, thicknesses and gages of material, finish and color, fastenings, methods of anchorage, size and spacing of anchors, method of glazing, locations of operating hardware, method and material for weatherstripping, method of attaching and operating both screen and glass insert panels, details of installation, and connections with other work.

.3 On storm door schedule, show location of each unit.

1.4 TEST REPORTS

.1 Upon request, submit test reports indicating that storm doors conform to applicable requirements specified herein.

1.5 MAINTENANCE DATA

.1 Provide operation and maintenance data for doors for incorporation into Manitoba Housing operation and maintenance manual.

.2 Provide manufacturer's fabrication dimensions for each operable sash, fixed sash, screen and kick panel.

1.6 MAINTENANCE MATERIALS

.1 Prior to completion of contract, the contractor must supply the following maintenance materials to a representative of Manitoba Housing:

.1 5% (five percent) of the total quantity of each size of operable sash.

.2 5% (five percent) of the total quantity of each size of fixed sash.

.3 5% (five percent) of the total quantity of each size of screen.

.4 5% (five percent) of the total quantity of each size of kick panel.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Carefully pack products in poly bags or other protective containers.

.2 Deliver products to the project site in undamaged condition, store out of contact with the ground under weathertight covering, and protect against damage.

.3 Do not install damaged units. Replace damaged units with new units.

Part 2 - PRODUCTS

2.1 MATERIALS

.1 Door and frame assembly: material and construction approved by ULC, CSA, or approved testing agency.

.2 Extruded Aluminum – to ASTM B 221M, Alloy 6063 or 6463, Temper T5 or T6.

.3 Storm Doors:

.1 Conform to requirements specified herein.

.2 Doors shall be self-storing, equal light, combination storm doors with reinforced corners, fully assembled and prehung complete with glazing, insect screens, hardware, and weatherstripping ready for installation into prepared door openings.

.3 Dimensions indicated are nominal. Field measure openings to obtain exact dimensions needed for fabrication.

.4 Approved model:

.1 Storm - Tite 724 2 lite.

.2 Window Factory Model 1000 MH

.4 Hardware

.1 For each storm door, provide a spring-loaded latch bolt operated by a turn knob, thumb piece, or lever handle; a tubular, adjustable, pneumatic or hydraulic closer; a chain door stop; and an adjustable sweep mounted on a bottom expander or with a flat metal retainer.

.2 Storm doors shall be lockable from the inside. Latch hardware, latch pin, knob, and springs shall be heavy duty and made from corrosion resistant materials.

.3 Four (4) self-lubricating hinges complete with replaceable brass bushings, pins and springs.

.4 Approved hardware:

.1 Heavy duty pneumatic closer; Ideal Security SK 3015 or approved equal.

.2 Heavy duty latch with locking mechanism and handle; Ideal Security SK 1994 or approved equal.

.3 Heavy duty safety check chain; Ideal Security SK 17, or approved equal.

.4 Weather stripping to be poly/pile type; Schlegel Finseal, or approved equal.

.5 Door Frames

.1 Expander type, regular Z-bar, or New England Z-bar, as required to suit actual conditions at the door openings.

.6 Door Stiles and Rails

.1 Aluminum storm doors shall have extruded aluminum tubular sections not less than 25 mm deep by 57 mm one inch deep by 2 1/4 inches face dimension, or 38 mm deep by 50 mm 1 1/2 inches deep by 2 inches face dimension, and 1.27 mm 0.050 inch nominal wall thickness.

.7 Kick Plate

.1 Kick plates shall be not less than 5 mm 3/16 inch thick extruded aluminum or 8 mm 5/16 inch thick sandwich panel with sheet aluminum on both sides.

.2 Panels shall be complete with vinyl splines and/or channel glazing stops with screws for installation. Kick panel to be removable without removing door from opening.

.8 Screen

.1 Screen cloth shall be 6 by 7 per 10 mm16 by 18 mesh fiberglass.

.2 Cloth screen inserts shall be held in place with removable, laid-in glazing splines.

.9 Sealant

.1 Elastomeric type, ASTM C 920, Type S or M, Grade NS, Class 12.5, Use NT, Color by the Owner. Sealant shall have been tested and approved for use with aluminum, steel, and wood.

2.2 COMPONENTS

.1 Connections

.1 Rigidly connect frames at corners to prevent racking during normal handling and installation.

.2 Glass Inserts

.1 Areas of glass and ventilation to conform to local building codes. Glass will not be permitted on lower 30" of door. (ie. minimum 24 " kick panel)

.2 Provide glaze inserts using either marine or drop-in glazing. Glass shall be in accordance with ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated), Type I, Class 1 (transparent), Quality q3, not less than 3 mm 1/8 inch thick.

.3 Screen and slider assembly to be reversible; manufacture with screen and operating sash at the top of the unit.

.3 Locks

.1 On inserts, locks shall engage round holes or deep notches in the main frame.

2.3 FINISHES

.1 Exposed aluminum surfaces shall be factory finished with an anodic coating. New storm doors shall have the same finish.

.2 Anodic Coating

.1 Exposed surfaces of aluminum extrusions and sheets shall be cleaned, and an anodized finish shall be applied conforming to AA DAF-45. Finish shall be clear (natural), designation AA-M10-C22-A31, Architectural Class II, AAMA 611.

.2 Colour by the Owner.

Part 3 – EXECUTION

3.1 PREPARATION

.1 Thoroughly clean and repair surfaces to which storm door frames will be applied.

3.2 INSTALLATION

.1 Install square, in a true plane, level, plumb, in alignment with adjacent construction, and in accordance with manufacturer's printed directions.

.2 Sealants - make the entire perimeter of the main frame weathertight. Provide gaskets to separate new metal from existing metal.

.3 Fastening - attach units with panhead screws of adequate dimensions for the particular installation, long enough to penetrate the rough stud framing material (2x4, 2x6) a minimum of 1".

.4 All screw holes to be predrilled

3.3 CLEANING

.1 After installation, clean exposed surfaces to remove foreign matter and surface blemishes.

.2 Remove damaged units and units which cannot be cleaned satisfactorily and provide new units.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Aluminum Association (AA)

.1 AA DAF 45-03(R2009), Designation System for Aluminum Finishes.

.2 ASTM International

.1 ASTM A123/A123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

.2 ASTM A1008/A1008M-11, Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.

.3 ASTM D523-08, Standard Test Method for Specular Gloss.

.4 ASTM D822-01(2006), Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.

.3 CSA International

.1 CAN/CSA-Z809-08, Sustainable Forest Management.

.4 Forest Stewardship Council (FSC)

.1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.

.5 The Master Painters Institute (MPI)

.1 Architectural Painting Specification Manual - current edition.

.1 MPI #18 Primer, Zinc Rich Organic.

.2 MPI #80 Primer, Vinyl Wash.

.6 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards.

.1 SCAQMD Rule 1113-A2011, Architectural Coatings.

.7 Sustainable Forestry Initiative (SFI)

.1 SFI-2010-2014 Standard.

1.2 ACTION AND INFORMATIONAL 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 doors, hardware, and accessories 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 Territory of , Canada.

.2 Indicate materials, operating mechanisms, required clearances and electrical connections.

.4 Certificates:

.1 Submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

.5 Test Reports:

.1 Submit certified test reports showing compliance with specified performance characteristics and physical properties.

.6 Manufacturer's Field Reports:

.1 Submit manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in Part 3 - FIELD QUALITY CONTROL.

1.3 CLOSEOUT SUBMITTALS

.1 Submit in accordance with Section 01 78 00 - Closeout Submittals.

.2 Operation and Maintenance Data: submit operation and maintenance data for overhead door hardware for incorporation into manual.

1.4 MAINTENANCE MATERIAL SUBMITTALS

.1 Submit in accordance with Section 01 78 00 - Closeout Submittals.

.2 Spare parts:

.1 Supply spare parts for vertical lift doors as follows:

.1 Door rollers: 4.

.2 Weatherstripping: 1 set.

.2 Store where directed. Identify each part and reference to appropriate door.

1.5 QUALITY ASSURANCE

.1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

.1 Store materials off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect multi-leaf vertical lift metal doors, hardware and accessories from nicks, scratches, and blemishes.

.3 Replace defective or damaged materials with new.

Part 2 Products

2.1 DESIGN CRITERIA

.1 Design exterior door assembly to withstand wind load of 1 kPa minimum with horizontal deflection of 1/240 maximum of opening width.

.2 Design door panel assemblies with thermal insulation factor 12 RSI.

.3 Design door assembly to withstand minimum cycles per annum, and total life cycle.

2.2 MATERIALS

.1 Manufacturer: Overhead Door: Thermacore Model :194

2.3 HARDWARE

.1 Equip doors with vertical lift torsion spring balanced/one piece door hardware with 50 mm size, 2.5 mm base metal thickness track for torsion spring lifting and include ancillary hardware items.

.2 Accessories:

.1 2.3 mm base metal thickness continuous steel angle track supports.

.2 5 mm thick formed sheet 1500 mm high track guards.

.3 Pusher springs.

.4 Flat bar door latch handle with night latch and electric interlock switch operated from outside, handle operated from inside.

.5 Outside drop ring handle.

.6 Double contact extruded neoprene weatherstrip for door sill section, full width.

.7 Extruded aluminum and arctic grade vinyl weatherstrip for jambs and head, to manufacturer's standard.

.3 Finish ferrous hardware items with minimum zinc coating of 300 g/m^2 to ASTM A123/A123M.

2.4 ELECTRICAL OPERATOR

.1 Overhead Door : Legacy 850 Garage door opener

.1 Digital wirless keypad

.2 Master remote and 6'-0" powercored

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for multi-leaf vertical lift metal doors installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Consultant.

.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 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

.2 Install doors and hardware in accordance with manufacturer's instructions.

.3 Touch-up doors with primer where galvanized finish damaged during fabrication.

.4 Install electrical motors, controller units, pushbutton stations, relays and other electrical equipment required for door operation.

.5 Installation includes electric wiring from power supply located near door opening.

.6 Lubricate springs and adjust door operating components to ensure smooth opening and closing of doors.

.7 Adjust operable parts for correct function.

.8 Adjust weatherstripping to form weathertight seal.

.9 Adjust doors for smooth operation.

3.3 FIELD QUALITY CONTROL

.1 Schedule site visits to review Work at stages listed:

.1 Upon completion of Work, after cleaning is carried out.

3.4 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.

.1 Remove traces of primer; clean doors and frames.

.2 Clean glass and glazing materials with approved non-abrasive cleaner.

3.5 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by multi-leaf vertical lift metal door installation.

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE OF WORK

.1 This specification applies to buildings included in Part 9 of the National Building Code. This includes buildings of 3 stories or less used for residential occupancy.

.2 Remove and dispose of existing windows.

.3 Provide labour, material, equipment and services necessary and incidental to the general replacement of the windows. Replace window components as described herein.

1.2 REFERENCES

.1 CAN/CGSB-12.8-97, Insulating Glass Units.

.2 CAN/CGSB-1.40-97, Anticorrosive Structural Steel Alkyd Primer.

.3 CAN/CGSB-79.1-M91, Insect Screens.

.4 CSA-A440-90, Windows

.5 CSA-A440-05, Windows

.6 CSA-A440.1-90, User Selection Guide to A440

.7 CSA-A440.2-90, Energy Performance of Windows and Other Fenestration Systems

.8 CSA-A440.3-90, User Guide to A440.2

.9 CSA-A440.4-98, Window and Door Installation

.10 CAN/CSA- G164 – M92 (R2003), Hot Dip Galvanizing of Irregular Shaped Articles.

1.3 PERFORMANCE REQUIREMENTS

.1 Design frames in exterior walls to accommodate expansion and contraction within services temperature range of -40°C to 75°C.

.2 Laboratory testing of each composite window type by an independent testing laboratory is mandatory. Written test results, indicating that each window type has met the specifications in accordance with CAN/CSA-A440, must be received prior to the installation of any windows on site. Results will provide full descriptions of the composite windows tested. All windows for installation will be identical to the tested specimens. Any supplier/installer proposed revision to the window make-up may require additional testing.

.3 Window air tightness to meet the rating of A3 when tested in accordance with CAN/CSA-440 windows.

.4 Window water tightness shall meet the B5 rating when tested in accordance with CAN/CSA-440 windows.

.5 Structural performance shall be based on CSA Standard for fiberglass windows and a maximum deflection of 1/175 of the span.

.6 Windload resistance for window shall meet the C3 rating or better when tested in accordance with CAN/CSA-A440 Windows.

.7 The fixed window thermal transmittance U-Value shall be a minimum 0.32 W/(m²x°C) when tested in accordance with AAMA 1503.1 and CAN/CSA-A440.2.

The operable window thermal transmittance U-Value shall be minimum 0.34 W/(m²x°C) when tested in accordance with AAMA 1503.1 and CAN/CSA-A440.2.

.8 The window Energy Rating for heating conditions, ER, shall be 3.0 W/m² for fixed windows and -6.0 W/m² for operable windows.

.9 Insect screens to be provided for all vent windows; Rating S1 as per Table 4, CSA A440.

.10 Resistance to Forced Entry: F10.

.11 Design glass, glazing system, mullions and frames to support a live load of 100 pounds per foot acting vertically, 110 pounds acting horizontally at any point up to 42 inches above the floor or, 50 pounds per foot at 42 inches above the floor or, 50 pounds per foot at 42 inches above the floor, whichever produces the greatest effect.

.12 Costs for the initial independent testing of window Type A will be included in the contract. Any costs incurred for additional testing for items not meeting the specifications including costs for transportation and for the required modifications will be borne by contractor.

.13 Windows shall conform to the requirements of CSA A440, latest applicable edition and meet eligibility requirements of the Manitoba Hydro Power Smart Program. Prior to contract award, the low bidder shall provide the MHA with test reports for the proposed new windows completed by an independent technical source, tested to CSA A 440.2 (1998 to current). Alternately, windows listed with current NFRC Certified Products Listing are also acceptable. Window must meet an over all U-Value range category of 1.41 to 1.70.

.14 Owner to receive all Power Smart and other applicable rebates.

1.4 SHOP DRAWINGS

.1 Indicate materials, head, jamb, mullion, sill and sash details, profiles of components, elevation of units, installation methods, anchorage details, sealing

techniques, description of accessories and related components.

.2 Provide manufacturers fabrication dimensions for all window components (cut sheets) for all window types and configurations.

.3 Provide a list of all window parts, including manufacturers names, extruder name and window series, and current sources of components.

.4 Indicate on shop drawings, dimensions, relation to construction of adjacent work, air and vapour seal with adjacent construction materials, component anchorage and locations, anchor methods, shim methods and materials, and hardware installation details. Include also opening dimensions, frames opening tolerances and affected related work and installation requirements. Provide shop drawings for anchor and shim methods and materials, sealed by an engineer registered in the Province of Manitoba.

1.5 QUALITY ASSURANCE

.1 Submit test reports from independent testing agency indicating that windows exceed the performance requirements of CAN/CSA-A440 at the appropriate performance levels to meet climactic requirements, and as specified herein.

.2 Contractor shall provide independent test report confirming that Type A windows conform to specification requirements for air leakage, window driven rain, and structural capacity, prior to delivery to the site.

1.6 QUALIFICATIONS

.1 Manufacturer and installers are to be specialized in the manufacturing and installation respectively of PVC window system with a minimum of three years each of documented experience.

1.7 DELIVERY, STORAGE AND HANDLING

.1 Protect pre-finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.

1.8 SAMPLES

.1 Prior to use in this project, upon request by the Owner, a minimum 300 mm x 300 mm (12"x12") corner sample of windows shall be submitted to the Owner and Consultant for approval.

.2 Include frame, sash, sill, interlock, glazing and weather-proofing method, insect screens, surface finish and all hardware.

1.9 TEST REPORTS

.1 Submit test reports to the Owner and Consultant for all window units, including combination windows. Test reports to be from an independent certified testing laboratory to determine compliance with CSA-A440-90 and CGSB Standards applying to the type of materials specified. Test results for same model, type,

layout and standard size windows, reported within the last 60 months, can be submitted. Differences between the tested window and the installed window to be noted on the shop drawings. Standard testing and test reports to be done at no additional cost to the Owner.

.2 Testing of all window units to include air, water tightness, and wind load resistance. The fixed portion of slider windows will be deemed a fixed window for air leakage calculation purposes. Total allowable air leakage for combination windows will be calculated using the summation of allowable air leakage values of each window type.

.3 Overall U-value of each window type to be calculated as outlined in CSA-A440.2-90.

.4 Windows must satisfy all requirements as outlined in Section 10 of CSA A440-90 and egress requirements as detailed in the most current copy of the Building Code.

.5 Testing for compliance with A440-90 and A440.2-90 to be done on the same window. (ie. If steel reinforcement is used for structural testing, steel reinforcement must be included in the energy simulations).

1.10 MAINTENANCE DATA

.1 Provide operation and maintenance data for windows for incorporation into RCMP operation and maintenance manual.

1.11 MAINTENANCE MATERIALS

.1 Prior to the completion of the Contract, the Contractor must supply the following maintenance materials to a representative of RCMP:

.1 5% of each size of operable sash complete with hardware and glazing (minimum 1)

.2 5% of each size of screen (minimum 1)

.3 5% of all locks, crank hardware, rollers, guides, drain caps and other miscellaneous hardware.

.4 Provide three (3) copies of operation and maintenance data, including cleaning instruction for all windows and frames.

1.12 CODE REQUIREMENTS

.1 All windows to comply with the current edition of the National Building Code and Manitoba Amendments.

.2 All material on site to comply with WHMIS requirements. MSDS to be provided on request.

1.13 WARRANTY

.1 Provide written warranty for window sashes and frames against material or manufacturing defects occurring within 20 years from date of substantial performance.

.2 Provide written warranty for glazing seal failure against material or manufacturing defects occurring within 10 years from the date of substantial performance.

.3 Provide written lifetime warranty for all operating hardware.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Insulated Glass Seal: Flexible Silicone Foam tape, dessicant filled with pre-applied side adhesive and vapour retardant backer, minimum 6.5mm (¼") thick. Secondary seal to consist of hot melt butyl, polyurethane or solvent free polysulphide.

.2 Sealants: shall be a high grade anti-fungicidal silicone or approved equal according to installation specifications of the window manufacturer. Colours shall match that of the material to which it is applied.

.3 Screen frame: baked on enamel finish, roll formed aluminum complete with corner keys and retainer spline. Casement and awning screen to include integral perimeter flange. Screens removable to the inside only.

.4 Screens: aluminum or galvanized or fiberglass mesh.

.5 Jamb extensions: 18 mm (¾") PVC jamb extensions to suit wall thickness. Jamb extensions to have factory edge adjacent to casings. End caps not permitted.

.6 Air sealing insulation material; one component, low expansion (<20%) polyurethane foam, dispensed through a commercial grade foam gun.

.7 Backer rod: closed cell ethafoam rod, oversized 30%-50%.

.8 Casings or finish trim: paint grade lumber (or approved equal), minimum width to suit site conditions.

2.2 WINDOW TYPES

.1 All windows to be full frame replacements complete with brick mould and jamb extensions.

2.3 PICTURE WINDOW

.1 Dry glazed interior stops, sealed unit to be removable to interior.

2.4 SINGLE OPERATOR HORIZONTAL SLIDING WINDOW (GLIDER)

.1 Locking Hardware: Die cast housing cam lock complete with adjustable strike.

.2 Rolling Hardware: one pair dual brass, nylon or Lubex rollers.

.3 Sash track to include tapered block insert to increase contact pressure at meeting rail.

2.5 SINGLE OPERATOR VERTICAL SLIDING WINDOW (SINGLE HUNG)

.1 Locking Hardware: Die cast housing cam lock complete with adjustable strike.

.2 Sash Balance: Adjustable Spiral Balance *or* Dual opposing stainless steel coil constant force sash balance.

.3 Sash pulls to be integral to sash extrusion or designated handle secured through a minimum of two PVC walls. Sash pulls integrated with glazing stops not acceptable.

.4 Pivot bars to be fastened through 2 PVC walls or one wall and screw boss, using PVC screws.

2.6 CASEMENT WINDOW

.1 Locking Hardware: Die cast multi point lever lock complete with die cast adjustable mushroom head rollers and keepers. Minimum 2 point lock on all sashes.

.2 Operating Hardware: Roto gear dual arm operator using sill mounting *or* flange mounting with reinforcing back plate. High-pressure zinc die cast housing and steel base plate, hardened steel drive worm and gear arm.

.3 Weather-stripping: compression type seal against sash, single weather seal at exterior.

2.7 AWNING WINDOW

.1 Locking Hardware: Die cast lock. Minimum 2 locks on all sashes.

.2 Operating Hardware: Roto gear scissor arm operator *or* roto gear pivot shoe operator. High-pressure zinc die cast housing and steel base plate, hardened steel drive worm and gear arm.

.3 Weather-stripping: compression type seal against sash, single weather seal at exterior.

2.8 FABRICATION

.1 Fabricate in accordance with CSA-A440-90 supplemented as follows:

.2 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm (0.06") for units with a diagonal measurement of 1800 mm (71") or less and plus or minus 3 mm (0.12")for units with a diagonal measurement over 1800 mm. (71").

.3 Face dimensions detailed are maximum permissible sizes.

.4 Brace frames to maintain squareness and rigidity during shipment and installation.

.5 Finish steel clips and reinforcement to be galvanized.

.6 All PVC joints to be " welded corner " construction, frames and sashes.

.7 Drain hole covers for PVC windows to be rigid or manufacturer to provide one extra hinged cover per window.

.8 Brick moulds and jamb extension to be installed using arrowhead slots, sealed and mechanically fastened to main frame.

.9 Provide horizontal and vertical galvanized steel or aluminum reinforcement as required to achieve structural requirements as specified.

.10 Vertical and Horizontal sliding windows: sash and frame meeting rails to be reinforced with aluminum or galvanized steel channel, as required to meet structural requirements as specified.

.11 All windows within a tolerance of ±6 mm (± ¼") shall be fabricated to one dimension.

2.9 GLAZING

.1 Glaze windows in accordance with CSA-A440-90 and CAN/CGSB-12.8-97, Insulating Glass Units, supplemented as follows:

.1 3 mm glass for sealed units < 1 m^2 (10.76 ft^2)

.2 4 mm glass for sealed units ≥ 1 m^2 (10.76 ft^2).

.2 Glazing Performance:

.1 centre of glass U value: U ≤ 1.7 W/m^2-C (0.30 BTU/ft^2-F) based on 3mm glass, Winter night time values

.2 Solar Heat Gain Coefficient: 0.35≤ SHGC≤ 0.50

.3 Glazing method;

.1 Operable units: laid in glazing with dry glaze snap in stops.

.2 Picture windows: laid in glazing with dry glaze snap in stops to interior only.

.3 Removable Air Conditioner Panel: dry glaze or foam gasket to exterior of insulated glazing.

.4 Sealed units to be IGMAC certified. Permanently indicate Manufacturers name, IGMAC number and date of manufacture in corner of sealed unit.

PART 3 - EXECUTION

3.1 WORKMANSHIP

.1 Install in accordance with CSA-A440.4-98 supplemented with installation

instructions in this specification and manufacturers recommendations. Conflict between installation instructions in this specification and manufacturers instructions must be brought to the attention of the Owner and Consultant prior to installation.

3.2 PREPARATION

.1 All window sizes and measurements shall be taken from the jobsite. The Contractor shall check and verify all site dimensions, on an individual basis, prior to fabrication of windows. The Contractor shall not make any claim to the Owner for mis - measured or improperly measured work.

.2 Remove existing sash, tracks, frames, interior and exterior trims and discard.

.3 Examine openings into which windows are to be installed to ensure that it is satisfactory before commencement of work. Notify Owner of any rot, damage or deterioration that is evident prior to proceeding with the Work.

.4 Furr out existing openings to achieve ½" maximum shim space. All furring set into the original opening shall be bedded in acoustic sealant.

.5 Move furniture and appliances and remove window coverings as required, to gain access to window area. The Owner will make arrangements to move fragile items.

3.3 INSTALLATION

.1 Set window into opening plumb and square. Shim along sill at corners, at all vertical mullions and other locations as required to achieve shims at maximum 600 mm (24") o/c.

.2 Provide temporary shims at window sides and head to ensure proper alignment of window during fastening.

.3 All windows to be mechanically fastened through side jambs and head, adjacent to shims. Do not fasten through sill. Fastening to be 150-300 mm (6"-12") from each corner and at maximum 600 mm (24")o/c. All screw holes through PVC to be predrilled; holes to be 2mm larger than screw diameter. Fasten with minimum #8 stainless steel pan head screws, length sufficient to penetrate framing material a minimum of 35 mm (1½"). Screws to be concealed at all possible locations. Exposed screws to be capped.

.4 Remove shims from side jambs and head of window.

.5 All spaces between the window frame and the rough opening to be filled to a minimum depth of 50 mm (2") with low-expansion one component polyurethane foam to ensure air and vapour seal. For cold weather installation, install ethafoam rod or fibreglass insulation backer on exterior face of jamb, prior to filling the cavity with foam.

.6 All existing flashings and drip mouldings to remain in place. If such flashings are damaged during the removal of existing or installation of new windows, or if the

existing flashings are not adequate to cover the new windows, these flashings must be replaced at the Contractor's expense.

.7 Check and adjust all hardware. Leave all surfaces clean, including removal of any excess glazing compound from all surfaces.

.8 Replace, at no extra cost to the Owner, all glass cracked or broken during the Work of this contract, or otherwise damaged prior to substantial performance. Any breakage due to improper setting and installation shall be replaced by the Contractor, at no extra cost to the Owner for a period of one year following substantial performance.

.9 The Contractor shall ensure that damage done to the interior and exterior finishes, caused by the removal of existing windows, is kept to a minimum. The Contractor will be responsible to repair any damage caused, and to provide and finish any fillers required to fill between surface of new window and the existing surface of the exterior skin of the structure. The cost incurred to do this work will be considered as incidental to the Contract and will not be paid for separately.

3.4 CAULKING

.1 Seal joints between windows and exterior finish. Use foam backer rod to achieve 2:1 width:depth joint ratio.

.2 Apply sealant in accordance with manufacture's specifications.

3.5 RESTORATION OF INTERIOR AND EXTERIOR FINISHES

.1 Any and all finishes removed or damaged by the removal of the existing windows or installation of the new windows shall be repaired or replaced to original condition.

.2 Provide new wood, primed and finish painted interior trim casing (color to be selected by Owner)

.3 The Contractor will be responsible for the removal and replacing of existing window coverings. The cost for doing this will be considered as incidental to the contract. Reinstall all rails, rods, drapery, drapery tracks, blinds or any other window treatments removed to necessitate the installation of the new windows.

3.6 FINAL CLEANING

.1 Every piece of glass shall bear the manufacturer's names, type and thickness of the glass. Leave all labels on the glass until they have been inspected and approved by the owner. Labels shall not be removed until final cleaning; leaving no glue residue that may remain after the removal of the label.

.2 Upon completion of glazing, glass shall be thoroughly cleaned, all imperfections corrected and all damaged glass replaced.

.3 Clean the work area and remove all debris from site on a daily basis.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.2 Master Painters Institute (MPI)

.1 MPI Architectural Painting Specifications Manual, 2004.

.2 MPI - Maintenance Repainting Manual, 1998.

1.2 SUBMITTALS

.1 Submittals in accordance with Section 01 33 00 - Submittal Procedures 01 00 10 - General Instructions.

.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 01 00 10 - General Instructions.

.4 Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.5 Submit manufacturer's installation and application instructions.

1.3 STORAGE AND HANDLING

.1 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 within temperature as recommended by manufacturer.

.2 Fire Safety Requirements:

.1 Provide one 9 kg Type ABC dry chemical 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.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Place materials defined as hazardous or toxic waste, including tubes and containers, in containers or areas designated for hazardous waste.

.4 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.

1.5 SITE CONDITIONS

.1 Heating, Ventilation and Lighting:

.1 Ventilate enclosed spaces continuously during and after painting process. Run ventilation system 24 hours per day during installation, and provide continous ventilation for 7 days after completion of application of paint.

.2 Co-ordinate use of existing ventilation system with RCMP Property Manager and ensure its operation during and after application of paint as required.

.3 Provide minimum lighting level of 323 Lux on surfaces to be painted.

.2 Temperature, Humidity and Substrate Moisture Content Levels:

.1 Apply paint finishes when ambient air and substrate temperatures at location of installation can be satisfactorily maintained during application and drying process, within MPI and paint manufacturer's prescribed limits.

.2 Test concrete, masonry and plaster surfaces for alkalinity as required.

.3 Apply paint to adequately prepared surfaces, when moisture content is below paint manufacturer's prescribed limits.

.3 Additional application requirements:

.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 in occupied facilities during silent hours only. Schedule operations to approval of RCMP Property Manager such that painted surfaces will have dried and cured sufficiently before occupants are affected.

Part 2 Products

2.1 MATERIALS

.1 Provide paint materials for paint systems from single manufacturer.

.1 Acceptable Manufacturers: Sherwin Williams, Benjamin Moore, Pittsburgh Paints.

.2 Conform to latest MPI requirements for all painting work including preparation and priming.

.3 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI - Architectural Painting Specification Manual and MPI - Maintenance Repainting Manual "Approved Product" listing.

.4 Use MPI listed materials having minimum E2 rating where indoor air quality (odour) requirements exist.

2.2 COLOURS

.1 Colour schedule will be based upon selection of five base colours and three accent colours.

2.3 MIXING AND TINTING

.1 Perform colour tinting operations prior to delivery of paint to site, in accordance with manufacturer's written instructions. Obtain written approval from Project manager for tinting of painting materials.

.2 Use and add thinner in accordance with paint manufacturer's recommendations. Do not use kerosene or similar organic solvents to thin water-based paints.

.3 Thin paint for spraying in accordance with paint manufacturer's instructions.

.4 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 Finish (flat)	Max. 5	Max. 10
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 6 - Traditional Gloss	70 to 85	
Gloss Level 7 - High Gloss Finish	More than 85	

.2 Gloss level ratings of painted surfaces as indicated and as noted on Finish Schedule.

2.5 EXTERIOR PAINTING

.1 Concrete Vertical Surfaces: (including horizontal soffits)

.1 EXT 3.1A - Latex semi gloss finish.

.2 Concrete Masonry Units: smooth and split face block and brickEXT 4.2A - Latex semi gloss finish.

.3 Structural Steel and Metal Fabrications: columns, beams, joists and miscellaneous metal.

.1 EXT 5.1D - Alkyd semi gloss finish.

.4 Galvanized Metal: high contact/high traffic areas (doors, frames, railings and handrails, etc.).

.1 EXT 5.3B - Alkyd semi gloss finish.

.5 Dimension Lumber: columns, beams, exposed joists, underside of decking, siding, fencing, etc.

.1 EXT 6.2B - Waterborne solid colour stain finish.

.2 EXT 6.2C - Alkyd semi gloss finish.

.3 EXT 6.2L - Semi-transparent stain finish.

.6 Dressed Lumber: doors, door and window frames, casings, battens, smooth facias, etc.

.1 EXT 6.3B - Alkyd semi gloss finish do not use flat finish on doors.

.2 EXT 6.3C - Solid colour stain finish do not use in high contact areas or on doors.

.3 EXT 6.3D - Semi-transparent stain finish do not use on doors.

2.6 EXTERIOR RE-PAINTING

.1 Structural Steel and Metal Fabrications: columns, beams, joists and miscellaneous metal.

.1 REX 5.1D - Alkyd semi gloss.

.2 Galvanized Metal: high contact/high traffic areas (doors, frames, railings and handrails, etc.).

.1 REX 5.3B - Alkyd semi gloss.

.3 Dressed Lumber: doors, door and window frames, casings, battens, smooth fascias, etc.

.1 REX 6.3B - Alkyd semi gloss.

.2 REX 6.3D - Semi-Transparent Stain.

2.7 INTERIOR PAINTING

.1 Structural Steel and Metal Fabrications: columns, beams, joists and miscellaneous metal.

.1 INT 5.1E Alkyd - semi gloss finish.

.2 Galvanized Metal: high contact/high traffic areas (doors, frames, railings and handrails, etc.).

.1 INT 5.3C - Alkyd semi gloss finish (over cementitious primer).

.3 Plaster and gypsum board: gypsum wallboard, drywall, "sheet rock" type material, etc.

.1 INT 9.2A - Latex semi gloss finish (over latex sealer).

.2 INT 9.2C - Alkyd semi gloss finish (over latex sealer).

.3 INT 9.2M - Institutional low odour/low VOC semi gloss finish.

2.8 INTERIOR RE-PAINTING

.1 Galvanized Metal: high contact/high traffic areas (doors, frames, railings and handrails, etc.).

.1 RIN 5.3C - Alkyd semi gloss.

.2 Plaster and Gypsum Board: gypsum wallboard, drywall, "sheet rock" type material, etc.

.1 RIN 9.2A - Latex semi gloss.

.2 RIN 9.2C - Alkyd semi gloss finish.

Part 3 Execution

3.1 GENERAL

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

.2 Perform preparation and operations for interior painting in accordance with MPI - Architectural Painting Specifications Manual and MPI - Maintenance Repainting Manual except where specified otherwise.

3.2 EXAMINATION

.1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to RCMP Property Manager and General Contractor 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.

3.3 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 RCMP Property Manager or Project manager.

.2 Protect items that are permanently attached such as Fire Labels on doors and frames.

.3 Protect factory finished products and equipment.

.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 RCMP Property Manager.

.3 Clean and prepare surfaces in accordance with MPI - Architectural Painting Specification Manual and MPI - Maintenance Repainting Manual specific requirements and coating manufacturer's recommendations.

.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 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements.

.8 Touch up of shop primers with primer as specified.

.9 Do not apply paint until prepared surfaces have been accepted by Project manager

3.4 APPLICATION

.1 Method of application to be as approved by Project manager. Conform to manufacturer's application instructions unless specified otherwise.

.2 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.

.3 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

.4 Sand and dust between coats to remove visible defects.

.5 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.

3.5 MECHANICAL/ELECTRICAL EQUIPMENT

.1 Paint conduits, piping, hangers, ductwork and other mechanical and electrical equipment exposed in finished areas, to match adjacent surfaces, except as indicated.

.2 Do not paint over nameplates.

END OF SECTION