Part 1 General

1.1 WORK COVERED BY CONTRACT DOCUMENTS

.1 Work of this Contract includes air sealing repairs to the building envelope of the Dakota Community Centre, located at 1188 Dakota Street, Winnipeg, Manitoba.

.2 The scope of work includes localized removal of batt insulation and polyethylene vapour retarder and installation of closed cell spray applied polyurethane foam insulation complete with thermal barrier and prefinished metal enclosures. Additionally, revisions to the mechanical system (and related electrical work) in the ceiling space above the Viewing Lounge is required as is localized replacement of damaged ceiling panels.

1.2 CONTRACT METHOD

.1 The General Conditions for Construction (Revision 2006 12 15) are applicable to the work of the contract.

1.3 REFERENCES AND CODES

.1 Perform Work in accordance with the National Building Code of Canada (NBC) including all 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 contract documents, specifications, as specified standards, codes and referenced documents, latest editions.

1.4 WORK BY OTHERS

.1 Co-operate with other Contractors in carrying out their respective works and carry out instructions from Contract Administrator.

.2 Co-ordinate work with that of other Contractors. If any part of work under this Contract depends for its proper execution or result upon work of another Contractor, report promptly to Contract Administrator, in writing, any defects which may interfere with proper execution of Work.

1.5 WORK SEQUENCE

.1 Construct Work in stages to accommodate City of Winnipeg continued use of premises during construction.

.2 Co-ordinate Progress Schedule and co-ordinate with City of Winnipeg occupancy during construction.

.3 Construct Work in stages to provide for continuous public usage. Do not close off public usage of facilities until use of one stage of Work will provide alternate usage.

.4 Contractor is to allow for time in his schedule for the City of Winnipeg to vacate areas adjacent to construction, areas affected by construction activities.

1.6 CONTRACTOR USE OF PREMISES

.1 Limit use of premises for Work, for storage, and for access, to allow:

.1 City of Winnipeg occupancy.
.2 Work by other contractors.
.3 Public usage.
.4 Continuous access to the building entrances/exits.

.2 Co-ordinate use of premises under direction of Contract Administrator.

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

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

.5 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Contract Administrator.

.6 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.7 OWNER OCCUPANCY

.1 City of Winnipeg will occupy premises during entire construction period for execution of normal operations.

.2 Co-operate with City of Winnipeg in scheduling operations to minimize conflict and to facilitate City of Winnipeg usage.

1.8 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

.1 Execute work with least possible interference or disturbance to building operations, occupant], public and normal use of premises. Arrange with Contract Administrator to facilitate execution of work.

1.9 EXISTING SERVICES

.1 Notify, City of Winnipeg and utility companies of intended interruption of services and obtain required permission.

.2 Where Work involves connecting to existing services, give City of Winnipeg minimum 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions.

.3 Where unknown services are encountered, immediately advise Contract Administrator and confirm findings in writing.

.4 Protect, relocate or maintain existing active services.

1.10 DOCUMENTS REQUIRED

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

.1 Contract Drawings.
.2 Specifications.
.3 Addenda.
.4 Reviewed Shop Drawings.

.5 Change Orders.
.6 Other Modifications to Contract.
.7 Field Test Reports.
.8 Copy of Approved Work Schedule.
.9 Health and Safety Plan and Other Safety Related Documents including material data sheets (MSDS) on all products used in Project.
.10 Other documents as specified.

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 RELATED SECTIONS

.1 Section 01 11 00 – Summary of Work.

1.2 ACCESS AND EGRESS

.1 Design, construct and maintain temporary "access to" and "egress from" work areas, in accordance with relevant municipal, provincial and other regulations.

1.3 USE OF SITE AND FACILITIES

.1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Contract Administrator 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 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.

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

1.4 WORKING HOURS

.1 Working hours for work processes deemed to be excessively noisy or disruptive will be restricted to between 8:00 a.m. and 5:00 p.m. Monday through Friday.

.2 Working hours for all other work processes will be restricted to between 7:00 a.m. and 6:00 p.m. Monday through Friday, and 9:00 a.m. to 4:00 p.m. Saturday.

.3 Notwithstanding the above, all Work shall be completed in conformance with City of Winnipeg Neighbourhood Liveability By-Law No. 1/2008.

.4 The City of Winnipeg reserves the right to occasionally restrict work in select areas of the facility to accommodate tenant functions. The Bidder will be provided a minimum of 3 working days notice of such restrictions.

1.5 SPECIAL REQUIREMENTS

.1 Construct Work in phases as required to provide for continuous public usage. Do not close off public access to facilities until proper notification has be provided to both the Contractor Administrator and the City of Winnipeg and use of completed phases will provide alternate usage if necessary.

.2 All work which interferes with the normal operation of the facility and/or require closures will have to be precisely coordinated with the City of Winnipeg.

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

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

1.6 BUILDING SMOKING ENVIRONMENT

.1 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 The General Conditions for Construction (Rev. 2006 12 15) are applicable to the Work of the contract.

1.2 CASH ALLOWANCES FOR TESTING, EXAMINATION

.1 Include in Contract Price, allowances to cover costs of site and laboratory testing and examination listed.

.2 Tests and testing requirements, as specified shall be carried out by independent examining, testing companies, as appointed by the Contractor and acceptable to the Contract Administrator.

.3 Obtain quotations from examining and testing companies and submit to Contract Administrator for review.

.4 Pay all costs for specified examination, testing work performed by independent examining and testing companies, from cash allowance specified.

.5 The invoices for work performed by the specialist examining and testing companies shall be directed to the Contractor and forwarded with monthly request for payment. Invoices will be processed onto a Change Order periodically to formalize an expenditure from the Cash Allowance.

.6 Cash Allowance is for payment of examining, testing company invoices only. Contractor costs for site supervision and coordination is deemed to be part of overhead included in the Total Estimated Contract Price.

.7 Specific testing requirements are outlined in respective technical Sections. Materials failing to meet specified requirements shall be replaced or repaired and retested as directed by Contract Administrator, with all costs involved in retesting borne by the Contractor.

.8 Include testing/examination allowances for:

.1 Testing cash allowance lump sum of $2,500.00.

1.3 CASH ALLOWANCES FOR PRODUCTS, LABOUR, MATERIAL

.1 Include in Contract Price, allowances to cover Work specified in respective Sections or as otherwise listed below.

.2 Work may be carried out by sub-contractors already employed on site, or by sub-contractors brought in for the Cash Allowance work.

.3 Obtain quotations from for the work and submit to Contract Administrator for review.

.4 Pay all costs for work performed from cash allowance specified.

.5 The invoices for work performed shall be directed to the Contractor and forwarded with monthly request for payment. The invoices will be processed onto a Change Order periodically to formalize an expenditure from the Cash Allowance.

.6 Cash Allowance is for payment of invoices from companies carrying out the Work.

.7 Include cash allowances for:

.1 Mechanical and Electrical equipment: $10,000.00.

1.4 ADJUSTMENTS OF CASH ALLOWANCES

.1 Contractor shall not exceed Cash Allowances without authority from Contract Administrator. Contractor will not be allowed expenses or profit on overage unless authority for over expenditure is obtained. Over expenditure of Cash Allowances may, at Contract Administrator's discretion, be deducted from sums of money due Contractor, should Contractor exceed allowance without authority from the Contract Administrator.

.2 Adjustments to the Cash Allowances will be made by a written Change Order, signed by the Contract Administrator, or as amendments to the Contract at the time of final payment, on the basis of submitted net cost invoices.

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 PRECONSTRUCTION MEETING

.1 Within 5 working days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.

.2 Senior representatives of City of Winnipeg, Contract Administrator, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.

.3 Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.

.4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.

.5 Agenda to include:

- .1 Appointment of official representative of participants in the Work.
- .2 Schedule of Work: in accordance with Section 01 32 16 - Construction Progress Schedule.
- .3 Submission of shop drawings, samples. 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 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
- .6 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
- .7 Delivery schedule of specified materials.
- .8 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .9 Monthly progress claims, administrative procedures, photographs, hold backs.
- .10 Appointment of inspection and testing agencies or firms.
- .11 Insurances, transcript of policies.

1.2 JOB MEETINGS

.1 Refer to Clause D18 of Supplemental Conditions.

.2 Contract Administrator will be responsible for recording minutes of meetings and circulate to attending parties and affected parties not in attendance within 5 working days after meeting.

.3 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 REQUIREMENTS

.1 Ensure Schedule is practical and remain within specified Contract duration.

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

1.2 SUBMITTALS

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

.2 Refer to Clause D13 Detailed Work Schedule in Supplemental Conditions.

1.3 PROJECT SCHEDULE

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

.1 Award.
.2 Mobilization.
.3 Air sealing repairs of viewing lounge.
.4 Air sealing repairs to north rink.
.5 Air sealing repairs to south rink.
.6 Demobilization.

1.4 PROJECT SCHEDULE REPORTING

.1 Update Project Schedule on biweekly 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.

1.5 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 Contract Administrator 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 Review submittals prior to submission to Contract Administrator. 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.

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

.5 Verify field measurements and affected adjacent Work are co-ordinated.

.6 Contractor's responsibility for errors and omissions in submission is not relieved by Contract Administrator’s review of submittals.

.7 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator’s review.

.8 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 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 5 working days for Contract Administrator’s review of each submission.

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

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

.7 After Contract Administrator review, distribute copies.

.8 Submit electronic copy in PDF format of shop drawings for each requirement requested in specification Sections and as Contract Administrator may reasonably request.

.9 Submit electronic copy in PDF format of product data sheets or brochures for requirements requested in specification Sections and as requested by Contract Administrator where shop drawings will not be prepared due to standardized manufacture of product.

.10 Delete information not applicable to project.

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

.12 If upon review by Contract Administrator, 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.

1.3 SAMPLES

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

.2 Deliver samples prepaid to Contract Administrator's business address.

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

.6 Make changes in samples which Contract Administrator may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.4 MOCK-UPS

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

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 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 Province of Manitoba

.1 The Workers Compensation Act RSM 1987 - Updated 2006.

.2 Manitoba Regulation 217/2006 – Workplace Safety and Health Regulation.

1.2 SUBMITTALS

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

.2 Submit copies of incident and accident reports.

.3 Submit WHMIS MSDS - Material Safety Data Sheets on all products used in conjunction with the Work.

.4 W.H.I.M.I.S. Training: Provide copies of valid certification/training for all employees (regular or temporary) including all subcontractors.

.1 All individuals involved in the application of any product shall meet all WHIMIS / provincial standards safety/protection requirements at all times.

1.3 GENERAL REQUIREMENTS

.1 Refer to Clause B12.4 of Bidding Procedures for a workplace safety and health program meeting the requirements of the Workplace Safety and Health Act (Manitoba).

1.4 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.

1.5 PERSONAL PROTECTIVE EQUIPMENT (PPE)

.1 All employees (regular or temporary) of contractor and subcontractors shall wear PPE in accordance with Manitoba Regulation 217/2006.

.2 Fall Protection: Provide fall protection in accordance with Manitoba Regulation 217/2006.

1.6 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 RELATED SECTIONS

.1 Section 01 21 00 – Allowances.

1.2 REFERENCES

.1 The General Conditions for Construction (Rev. 2006 12 15) are applicable to the work of the contract.

1.3 INSPECTION

.1 Allow Contract Administrator 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 Contract Administrator 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 Contract Administrator 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.

1.4 INDEPENDENT INSPECTION AGENCIES

.1 Independent Inspection/Testing Agencies will be engaged for purpose of inspecting and/or testing portions of Work. Cost of such services will be paid by the Contractor via the testing cash allowance.

.2 Allocated costs: to Section 01 21 00 - Allowances.

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

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

.5 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 Contract Administrator at no cost to the City of Winnipeg. Pay costs for retesting and re-inspection.

1.5 ACCESS TO WORK

.1 Allow inspection/testing agencies access to Work.

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

1.6 PROCEDURES

.1 Notify appropriate agency 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.

1.7 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 Contract Administrator as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

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

.3 If in opinion of the Contract Administrator it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, City of Winnipeg 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 Contract Administrator.

1.8 REPORTS

.1 Submit copies of inspection and test reports to City of Winnipeg and Contract Administrator.

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

1.9 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 Contract Administrator and as specified in specific Section.

.3 Prepare mock-ups for Contract Administrator’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 Approved mock-ups may remain as part of 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 INSTALLATION AND REMOVAL

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

.2 Remove from site all such work after use.

1.2 WATER SUPPLY

.1 The City of Winnipeg will make available, for the extent that it is available, a supply of potable water for construction use at no charge to the Contractor.

.2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal.

.3 The Contractor shall provide all necessary hoses, lines, connections, and other ancillary hardware which may be required.

.4 The services are to be returned to their original condition at the temporary locations or left in an altered condition only as approved by the City of Winnipeg.

1.3 TEMPORARY HEATING AND VENTILATION

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

.2 Construction heaters used inside building must be vented to outside or be 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 10 degrees Celsius 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 may be used for heating. Be responsible for damage to heating system if use is permitted.

.7 The City of Winnipeg will pay utility charges when temporary heat source is existing building equipment.

.8 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.

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

1.4 TEMPORARY POWER AND LIGHT

.1 The City of Winnipeg will make available, for the extent that it is available, temporary power during construction for temporary lighting and operating of power tools to a maximum supply of 230 volts, 30 amps.

.2 Connect to existing power supply in accordance with Canadian Electrical Code.

.3 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.

.4 Temporary power for equipment requiring in excess of that available on-site is responsibility of the Contractor.

.5 Provide and maintain temporary lighting throughout project.

1.5 TEMPORARY COMMUNICATION FACILITIES

.1 Provide and pay for cellular telephone for site superintendent and use of Contract Administrator.

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.

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 The General Conditions for Construction (Rev. 2006 12 15) are applicable to the work of the contract.

.2 Canadian Standards Association (CSA International)

.1 CSA A23.1/A23.2-14, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.

.2 CSA O121-17, Douglas Fir Plywood.

1.2 SUBMITTALS

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

1.3 SCAFFOLDING

.1 Provide and maintain scaffolding, swingstage(s), access lift(s) as required for access throughout duration of the Work.

.2 Scaffolding shall be design and erected in accordance with Manitoba Regulation 217/2006 and CAN/CSA S269.2.

.1 Where Manitoba Regulation 217/2006 requires scaffolds to be designed by a professional engineer. Submit shop drawings bearing the seal of professional engineer registered in the Province of Manitoba.

1.4 SUSPENDED ELEVATING PLATFORMS (SWINGSTAGE)

.1 Swingstage access shall be in accordance with Manitoba Regulation 217/2006, CAN/CSA Z271, and CAN/CSA Z91.

.1 Contractor to notify Manitoba Workplace Safety and Health at least 24 hours prior to rigging swingstage(s).

.1 Submit proof of notification to the Contract Administrator.

.2 Submit a Manitoba Workplace Safety and Health serial number prior to swingstage set-up.

.2 Upon request, make available to the Contract Administrator, all pertinent information regarding the swingstage equipment, design, and setup including but not limited to the following:

.1 Swingstage platform manufacturer's technical data indicating allowable load capacities;

.2 Outrigger manufacturer's or supplier's table of counterweights and allowable projections beyond the fulcrum point for various loads;

.3 Outboard thrust, inboard thrust, number and configuration of outrigger counterweights.

.4 The purpose of the review is to determine that the swingstage(s) utilized for access and work purposes is in general conformance with the contract documents and does not constitute approval of the swingstage(s) to be used by the Contractor, who shall remain solely responsible for the design, erection, operation, maintenance of the swingstage(s) and for any errors and omissions of those forces which come under his control.

.2 Suspended elevating platforms or aerial device shall be designed, and constructed, installed, maintained, used and dismantled, in accordance with Manitoba Regulation 217/2006.

1.5 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.

1.6 CONSTRUCTION PARKING

.1 Parking will be permitted on site provided it does not interfere with normal operations, access buy tenants or the public, or disrupt performance of Work.

.2 A construction site trailer may be situated on the site. The location of the trailer is to be determined by Contract Administrator and City of Winnipeg Project Manager.

1.7 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.

1.8 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.

.3 The Contractor may at the discretion of the City of Winnipeg, use on-site facilities for the duration of the project. The facilities must be maintained in a neat condition or use will be revoked.

1.9 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 Store materials resulting from demolition activities that are salvageable.

.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 INSTALLATION AND REMOVAL

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

.2 Remove from site all such work after use.

1.2 HOARDING

.1 The Contractor must barricade off the area under construction to prevent the general public from improper access to the construction area. Suitable barricades and protection systems include:

.1 Erect temporary site enclosures using 38 x 89 mm construction grade lumber framing at 600 mm centres and 1200 x 2400 x 13 mm exterior grade fir plywood to CSA O121. Enclosures to be minimum 2400 mm high.

.2 Repair surface coatings and/or finishes which are damaged by temporary hoardings and barricades.

.3 Provide adequate signage, fencing, etc. to inform the public of the work being undertaken.

.4 Apply plywood panels vertically, flush and butt jointed.

.5 Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law.

1.3 DUST TIGHT SCREENS

.1 Provide dust tight screens to localize dust generating activities, and for protection of workers, finished areas of Work and public.

.2 Maintain and relocate protection until such work is complete.

1.4 FIRE ROUTES

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

1.5 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

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

.2 Be responsible for damage incurred.

1.6 PROTECTION OF BUILDING FINISHES

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

.2 Provide necessary screens, covers, and hoardings.

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

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 The General Conditions for Construction (Rev. 2006 12 15) are applicable to the work of the contract.

.2 Within text of each specifications section, reference may be made to reference standards. Conform to these reference standards, in whole or in part as specifically requested in specifications.

.3 Conform to latest date of issue of referenced standards in effect on date of submission of Bids, except where specific date or issue is specifically noted.

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

.5 The Cost for such testing will be borne by the Contractor.

1.2 QUALITY

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

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

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

.4 Should disputes arise as to quality or fitness of products, decision rests strictly with the Contract Administrator 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 Contract Administrator 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 Contract Administrator at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Contract Administrator 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 Contract Administrator.

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

1.5 TRANSPORTATION

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

1.6 MANUFACTURER'S INSTRUCTIONS

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

.2 Notify Contract Administrator in writing, of conflicts between specifications and manufacturer's instructions, so that Contract Administrator will establish course of action. Where conflicts exist, the more stringent instruction will be enforced.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Contract Administrator 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 Contract Administrator if required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. Contract Administrator reserves 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 Contract Administrator, 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 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.

1.10 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 Contract Administrator.

1.11 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 The General Conditions for Construction (Rev. 2006 12 15) are applicable to the work of the contract.

1.2 PROJECT CLEANLINESS

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

.2 Remove waste materials from site at daily regularly scheduled times. Do not burn waste materials on site.

.3 Arrange with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.4 Provide on-site containers for collection of waste materials 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.

1.3 FINAL CLEANING

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

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

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

.4 Remove waste products and debris other than that caused by City of Winnipeg or other Contractors.

.5 Remove stains, spots, marks and dirt from existing surfaces, fixtures, and finishes within the work area or affected by the affected by the Work.

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

.7 Remove dirt and other disfiguration from exterior surfaces.

.8 Sweep and power wash clean all work areas.

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 REQUIREMENTS

.1 Acceptance of Work Procedures:

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

.1 Notify Contract Administrator in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.

.2 Request Contract Administrator's inspection.

.2 Consultant's Inspection:

.1 Contract Administrator and Contractor to inspect Work and identify defects and deficiencies.

.2 Contractor to correct Work as directed.

.3 Completion Tasks: submit written certificates that tasks have been performed as follows:

.1 Work: completed and inspected for compliance with Contract Documents.

.2 Defects: corrected and deficiencies completed.

.3 Work: complete and ready for final inspection.

.4 Final Inspection:

.1 When completion tasks are done, request final inspection of Work by Contract Administrator, and Contractor.

.2 When Work incomplete according to Contract Administrator, complete outstanding items and request re-inspection.

.5 Declaration of Substantial Performance: when Contract Administrator considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.

.6 Commencement of Lien: date of City of Winnipeg's acceptance of submitted declaration of Substantial Performance to be date for commencement of lien period.

.7 Final Payment:

.1 When Contract Administrator considers final deficiencies and defects corrected and requirements of Contract met, make application for Certificate of Total Performance.

.8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work submit application for payment of holdback amount in accordance with contractual agreement.

1.2 FINAL CLEANING

.1 Clean in accordance with Section 01 74 11 – Cleaning.

.1 Remove surplus materials, excess materials, rubbish, tools and equipment.

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 SECTION INCLUDES

.1 Operation and maintenance data.

.2 As-built drawings, samples, and specifications.

.3 Product data, materials and finishes, and related information.

.4 Record documents.

.5 Final site survey.

.6 Equipment and systems.

.7 Spare parts, special tools and maintenance materials.

.8 Warranties and bonds.

1.2 SUBMISSION

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

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

.3 Two weeks prior to Substantial Performance of the Work, submit to the Contract Administrator, four final copies of operating and maintenance manuals in English.

.4 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.

.5 If requested, furnish evidence as to type, source and quality of products provided.

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

.7 Pay costs of transportation.

1.3 OPERATION AND MAINTENANCE MANUAL FORMAT

.1 Organize data in the form of an 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 1:1 scaled CAD files in .DWG format on CD.

1.4 CONTENTS - EACH VOLUME

.1 Table of Contents: provide title of project;

.1 date of submission;

.2 names, addresses, and telephone numbers of Contract Administrator and Contractor with name of responsible parties; and

.3 schedule of products and systems indexed to content of volume.

.2 For each product or system, 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 clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.

.4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

1.5 AS-BUILT DOCUMENTS AND SAMPLES

.1 In addition to requirements in General Conditions, maintain at the site for Contract Administrator and the City of Winnipeg one record copy of:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Change Orders and other modifications to the Contract.

.5 Reviewed shop drawings, product data, and samples.

.6 Field test records.

.7 Inspection certificates.

.8 Manufacturer's certificates.

.2 Store as-built documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.

.3 Label as-built documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "AS-BUILT DOCUMENTS" in neat, large, printed letters.

.4 Maintain as-built documents in clean, dry and legible condition. Do not use as-built documents for construction purposes.

.5 Keep as-built documents and samples available for inspection by Contract Administrator.

1.6 RECORDING ACTUAL SITE CONDITIONS

.1 Record information on set of black line opaque drawings, and in a copy of the Project Manual provided by Contract Administrator.

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

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

.4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:

.1 Measured depths of elements of foundation in relation to finish first floor datum.

.2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

.3 Measured locations of internal utilities and appurtenances referenced to visible and accessible features of construction.

.4 Field changes of dimension and detail.

.5 Changes made by change orders.

.6 Details not on original Contract Drawings.

.7 References to related shop drawings and modifications.

.5 Specifications: legibly mark each item to record actual construction, including:

.1 Manufacturer, trade name, and catalogue number of each product installed, particularly optional items and substitute items.

.2 Changes made by Addenda and change orders.

1.7 RECORD DOCUMENTS

.1 Prior to Substantial Performance of the Work, electronically transfer the marked-up information from the as-built documents to a master set of drawing and specification files provided by the Contract Administrator, as follows:

.1 Drawings: AutoCAD Release 2000.

.2 Specifications: Microsoft Word 2003.

.2 Mark revised documents as "RECORD DOCUMENTS". Include all revisions.

.3 Employ a competent computer draftsperson to indicate changes on the electronic set of record drawings. Provide updated record drawings in AutoCAD Release 2000.

.4 Employ a competent specification writer to indicate changes to the electronic set of record specifications. Provide updated record specifications in Microsoft Word 2003.

.5 Submit completed record documents to Contract Administrator on a CD-ROM, accompanied by 3 hard copy sets.

1.8 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 Building Envelope: include copies of drawings of building envelope components, illustrating the interface with similar or dissimilar items to provide an effective air, vapour and thermal barrier between indoor and outdoor environments. Include an outline of requirements for regular inspections and for regular maintenance to ensure that on-going performance of the building envelope will meet the initial building envelope criteria.

.5 Additional Requirements: as specified in individual specifications sections.

1.9 WARRANTIES AND BONDS

.1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.

.2 List Subcontractor, Supplier, and manufacturer, with name, address, and telephone number of responsible Principal.

.3 Obtain warranties and bonds, executed in duplicate by Subcontractors, Suppliers, and manufacturers, within ten days after completion of the applicable item of work.

.4 Except for items put into use with City of Winnipeg’s permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.

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

.6 Co-execute submittals when required.

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

END OF SECTION

Part 1 General

.1 This section specifies requirements for demolishing, salvaging and removing wholly or in part, various items designated to be removed or partially removed to facilitate repairs. Disposal of debris generated from the work as well as protection of items designated to remain are also covered under this section.

1.2 SECTION INCLUDES

.1 Methods and procedures for deconstruction of structures and parts of structures.

1.3 REFERENCES

.1 Reference Standards:

.1 Canadian Standards Association (CSA International)

.1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.

.2 National Building Code of Canada 2010, Part 8 - Safety Measures at Construction and Demolition Sites.

1.4 MEASUREMENT PROCEDURE

.1 No measurement will be made under this section. Include costs in item of work for which demolishing is required.

1.5 SUBMITTALS

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

1.6 SITE CONDITIONS

.1 Existing Conditions:

.1 The work will be carried out in a single phase. Site protection to adjacent occupied areas is paramount.

.2 Vehicle and barrier free access to the building entrances and exits must always be maintained during the work.

.3 The City of Winnipeg must be given a minimum seven (7) days advance notice prior to commencement of repairs.

.2 Protection:

.4 Protect existing structures and services designated to remain and items designated for salvage. In event of damage to such items, immediately replace or make repairs to approval of Contract Administrator and at no cost to the City of Winnipeg.

.5 In all circumstances ensure that demolition work does not adversely affect adjacent areas.

.6 Do not dispose of waste of volatile materials such as, mineral spirits, oil, petroleum-based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers. Ensure proper disposal procedures are maintained throughout the project.

.7 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties.

.8 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities.

.9 Prevent movement, settlement or damage of adjacent structures, services. Provide bracing, shoring as required. Repair damage caused by deconstruction as directed by Contract Administrator.

.10 Support affected structures and, if safety of structure being deconstructed or adjacent structures appears to be endangered, take preventative measures. Cease operations and immediately notify Contract Administrator.

Part 2 Products

2.1 EQUIPMENT

.1 Leave equipment and machinery running only while in use, except where extreme temperatures prohibit shutting down.

.2 Where possible use water efficient wetting equipment/attachments when minimizing dust.

.3 Protect existing items designated to remain and materials designated for salvage. In event of damage to such items, immediately replace or make repairs to approval of Contract Administrator and at no cost to the City of Winnipeg.

.4 Demonstrate that tools are being used in manner which allows for salvage of materials in best condition possible.

.5 Locate and protect any utility lines which may be affected by the work and if necessary, notify utility companies before starting demolition.

Part 3 Execution

3.1 SITE VERIFICATION OF CONDITIONS

3.2 DISASSEMBLY

.1 Conduct demolition to minimize interference with adjacent building areas maintain protected, wheelchair accessible egress and access at all times to the building entrance.

.2 All debris created by the execution of the work shall be removed progressively from the site to appropriate disposal grounds. Do not damage adjacent finishes or surfaces.

.3 Do not disturb adjacent items designated to remain in place.

.4 Carefully remove and store reusable site materials and dismantle items containing materials for salvage and stockpile salvaged materials at locations as approved by the Contract Administrator.

.5 Ensure workers and subcontractors are briefed and trained to carry out work in accordance with appropriate deconstruction techniques.

.6 Project supervisor with previous deconstruction experience must be present on site throughout project.

.7 Deconstruct in accordance with CSA S350 and other applicable safety standards.

3.3 REMOVAL FROM SITE

.1 Transport material designated for disposal to approved facilities in accordance with applicable regulations.

.2 Arrange for and obtain permits from authorities having jurisdiction for disposal of waste and debris.

3.4 CLEANING AND RESTORATION

.1 Keep site clean and organized throughout deconstruction.

.2 Upon completion of project, remove debris, trim surfaces and leave work site clean.

.3 Upon completion of project, reinstate parking surfaces, walkways, affected by Work to condition which existed prior to beginning of Work and match condition of adjacent, undisturbed areas.

.4 In addition to the progressive removal of waste materials and debris from building and site, leave the site clean, perform the following before final inspection by the Contract Administrator.

.1 spray-wash all exterior building finishes in construction area and any adjacent building areas soiled by the construction processes.

.2 Broom clean and wash exterior walks, steps and platforms soiled from delivery or removal materials.

.3 Remove all dirt and other disfigurations from exterior surfaces.

.4 Sweep clean all paved areas.

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.

.2 Before proceeding with demolition of walls or other elements and where required by authority having jurisdiction submit for review by Contract Administrator shoring and underpinning drawings prepared by qualified professional engineer registered or licensed in the Province of Manitoba, showing proposed method.

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 Contract Administrator immediately.

.1 Do not proceed until written instructions have been received Contract Administrator.

.2 Notify Contract Administrator before disrupting access or services.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 PREPARATION

.1 Inspect building site with Contract Administrator and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.

.2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.

.3 Notify and obtain approval of utility companies before starting demolition.

.4 Disconnect, cap, plug or divert, as required, existing public utilities within the property where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore and maintain pipes and conduits encountered.

.1 Immediately notify Contract Administrator and utility company concerned in case of damage to any utility or service, designated to remain in place.

.2 Immediately notify the Contract Administrator should uncharted utility or service be encountered and await instruction in writing regarding remedial action.

3.2 PROTECTION

.1 Prevent movement, settlement, or damage to adjacent structures 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.

.5 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirements.

3.3 SALVAGE

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

.2 Remove items to be reused, store as directed by Contract Administrator and re-install under appropriate section of specification.

.3 Remove and replace all existing acoustical ceiling panels in Viewing Lounge that have discolouration, stains, water damage, cracks or damage sustained during construction. Replacement panels shall match existing Armstrong BP 769A CORTEGA square lay-in tiles (610mm x 1219mm x 16mm).

3.4 DEMOLITION

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

.2 Trim edges of partially demolished building elements to tolerances as defined by Contract Administrator to suit future use.

3.5 DISPOSAL

.1 Dispose of removed materials in accordance with authority having jurisdiction.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian Standards Association (CSA International)

- .1 CAN/CSA O80 Series 08, Wood Preservation
- .2 CSA O121-17, Douglas Fir Plywood.
- .3 CAN/CSA O141-05 (R2014), Softwood Lumber.
- .4 CSA O151-17, Canadian Softwood Plywood.
- .5 CAN/CSA O325-16, Construction Sheathing.

.2 National Lumber Grades Authority (NLGA)

- .1 Standard Grading Rules for Canadian Lumber 2017.

1.2 QUALITY ASSURANCE

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

.2 Plywood identification: by grade mark in accordance with applicable CSA standards.

.3 Plywood, OSB and wood based composite panel construction sheathing identification: by grademark in accordance with applicable CSA standards.

Part 2 Products

2.1 LUMBER MATERIAL

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

- .1 CAN/CSA O141.
- .2 NLGA Standard Grading Rules for Canadian Lumber.

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

- .1 Board sizes: "No. 2" or better grade.
- .2 Dimension sizes: "No. 2" light framing or better grade.
- .3 Post and timbers sizes: "Standard" or better grade.

2.2 PANEL MATERIALS

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

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

.3 Plywood, OSB and wood based composite panels: to CAN/CSA O325.

2.3 FINISHES

.1 Hot-dipped galvanizing: to CAN/CSA G164, use galvanized fasteners.

2.4 WOOD PRESERVATIVE

.1 Surface-applied wood preservative: to CAN/CSA O80.

.2 Pentachlorophenol use is restricted to building components that are in ground contact and subject to decay or insect attack only. Where used, pentachlorophenol-treated wood must be covered with two coats of an appropriate sealer.

.3 Structures built with wood treated with pentachlorophenol and inorganic arsenicals must not be used for storing food nor should the wood come in contact with drinking water.

Part 3 Execution

3.1 PREPARATION

.1 Treat surfaces of material with wood preservative, before installation.

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

.3 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

.4 Treat all material.

3.2 INSTALLATION

.1 Comply with requirements of NBC, supplemented by the following paragraphs.

.2 Install framing, blocking as required to replace components removed during wall demolition and window replacement.

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

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

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

.6 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized fasteners.

.7 Install wood backing, dressed, tapered and recessed slightly below top surface of roof insulation for roof hopper.

.8 Install sleepers as indicated.

.9 Install roof and wall sheathing in accordance with NBC, or manufacturer's recommendations whichever is most stringent.

.10 Patch, finish, re-finish interior finishes removed, cut, broken or damaged resulting from the Work.

.11 Use caution when working with particle board. Use dust collectors and high-quality respirator masks.

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.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Works in this section covers the supply and installation of a spray-in-place polyurethane foam insulation closed-cell as shown and indicated on the drawings. All polyurethane foam to be protected by a spray applied thermal barrier coating as specified herein.

.2 This specification shall be read in conjunction with the attached drawings

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM C1029-15, Spray-Applied Rigid Cellular Polyurethane Thermal Insulation.

.2 Canadian Urethane Foam Contractors' Association Inc. (CUFCA)

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

.1 Material Safety Data Sheets (MSDS).

.4 Underwriters' Laboratories of Canada (ULC)

.1 CAN/ULC-S101-14, Fire Endurance Tests of Building Construction and Materials.

.2 CAN/ULC-S102-10, Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

.3 CAN/ULC-S102.2:2018, Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies.

.4 CAN/ULC-S705.1-15, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Material Specification.

.5 CAN/ULC-S705.2-05, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Application.

1.3 MEASUREMENT PROCEDURES

.1 No measurement will be made under this section. The Contractor shall include in the appropriate fixed price component all labour, materials, supervision, and equipment as required to complete the work required under this Section and as shown on the Drawings.

1.4 SUBMITTALS

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

.2 Product Data:

.1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit two copies WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures.

.3 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.

.1 Test reports: submit certified test reports for insulation from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.

.2 Submit test reports in accordance with CAN/ULC-S101 for fire endurance and CAN/ULC-S102 for surface burning characteristics.

.3 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence and cleaning procedures.

1.5 QUALITY ASSURANCE

.1 Qualifications:

.1 Installer: person specializing in sprayed insulation installations with 5 years' experience and approved by manufacturer.

.2 Manufacturer: company with minimum 5 years' experience in producing of material used for work required for this project, with sufficient production capacity to produce and deliver required units without causing delay in work.

.2 Health and Safety Requirements: worker protection:

.1 Protect workers as recommended by CAN/ULC-S705.2 and manufacturer's recommendations:

.2 Workers must wear gloves, respirators, long sleeved clothing, and eye protection when applying foam insulation.

.3 Workers must not eat, drink or smoke while applying foam insulation.

1.6 DELIVERY, STORAGE, AND HANDLING

.1 Packing, shipping, handling and unloading:

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

.2 Deliver, store and handle materials in accordance with manufacturer's written instructions.

1.7 SITE CONDITIONS

.1 Ventilate area in accordance with Section 01 51 00 - Temporary Utilities.

.2 Ventilate area to receive insulation by introducing fresh air and exhausting air continuously during and 24 hours after application to maintain non-toxic, unpolluted, safe working conditions.

.3 Provide temporary enclosures to prevent spray and noxious vapours from contaminating air beyond application area.

.4 Protect adjacent surfaces and equipment from damage by overspray, fall-out, and dusting of insulation materials.

.5 Apply insulation only when surfaces and ambient temperatures are within manufacturers' prescribed limits.

Part 2 Products

2.1 MATERIALS

.1 Insulation: spray polyurethane to CAN/ULC-S705.1.

- .1 Air Barrier: Type II to ASTM E283.
- .2 Long-term thermal resistance (LTTR) of a 50 mm thick specimen: Type 2: minimum RSI-2.0.

.2 Primers: in accordance with manufacturer's recommendations for surface conditions.

.3 Acceptable Products:

- .1 Heatlok SOYA by Demilec
  - .1 Foam Type: Type 2
  - .2 LTTR R-Value (RSI/50 mm): 2.02
  - .3 Foam Colour: Green
- .2 Foam-Lok by Lapolla
  - .1 Foam Type: Type 1
  - .2 LTTR R-Value (RSI/50 mm): 1.80
  - .3 Foam Colour: Orange
- .3 CertaSpray by Certain Teed
  - .1 Foam Type: Type 1
  - .2 LTTR R-Value (RSI/50 mm): 180
  - .3 Foam Colour: Beige
- .4 Polarfoam SOYA by Demilic
  - .1 Foam Type: Type 2
  - .2 LTTR R-Value (RSI/50 mm): 2.02
  - .3 Foam Colour: Peach
- .5 Walltite ECO by BASF
  - .1 Foam Type: Type 1
  - .2 LTTR R-Value (RSI/50 mm): 1.95
  - .3 Foam Colour: Purple

.4 Alternates: A copy of an Evaluation Report (such as the CCMC Evaluation Report) or copies of the test reports from an SCC (Standards Council of Canada) accredited testing laboratory, for each physical property, indicating that the product meets the requirements of CAN/ULC S705.1 shall be made available upon request.

.5 Thermal Barrier:

- .1 Spray applied intumescent coating which creates a thermal barrier coating designated as a protective covering for polyurethane foam plastic in Canada. Coating must meet the requirements of a thermal barrier as defined in the National Building Code of Canada when tested in accordance with CAN/ULC-S124.
- .2 Acceptable Product:
  - .1 Flame Seal-TB-C by Flame Seal Products, Inc.
  - .2 Foamsulate-Eco Type 2 LTTR by Premium Spray Products Canada
  - .3 Cynene MD-C-200-v2 by Gunnlaugson Spray-On (2010) Ltd.

2.2 EQUIPMENT

.1 The equipment used to spray the polyurethane foam material shall be in accordance with CAN/ULC S705.2 and the equipment manufacturer's recommendations for specific type of application.

.2 Equipment settings are to be recorded on the Daily Work Record as required by the CAN/ULC S705.2 Installation standard.

.3 Each proportioner unit to supply only one spray gun.

2.3 ACCESSORIES

.1 Prime substrate when required by spray polyurethane manufacturer or the membrane manufacturer. The type of primer and the installation of the primer shall follow the requirements of the manufacturer for the surface conditions.

.2 Air/Vapour barrier membranes, mastics, sealants, liquids complete with required primers to complete the transitions for the air barrier system.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 EXAMINATION

.1 Verify that surfaces and conditions are suitable to accept work as outlined in this section.

.2 Prior to commencement of work report in writing to the consultant any defects in surfaces or conditions that may adversely affect the performance of products installed under this section.

.3 Commencement of work outlined in this section shall be deemed as acceptance of existing work and conditions.

3.3 PREPARATION

.1 Protection:

.1 Mask and cover adjacent areas to protect from over spray.

.2 Ensure any required foam stop or back up material are in place to prevent over spray and achieve complete seal.

.3 Seal off existing ventilation equipment. Install temporary ducting and fans to ensure exhaust fumes. Provide for make-up air.

.4 Erect barriers, isolate area and post warning signs to advise non-protected personnel to avoid the spay area.

.2 Surface Preparation:

.1 Surfaces to receive foam insulation shall be clean, dry and properly fastened to ensure adhesion of the polyurethane foam to the substrate.

.2 Ensure that all work by other trades that may penetrates through the thermal insulation is in place and complete.

.3 Ensure that surface preparation and any primers required conform to the manufacturer's instructions.

3.4 APPLICATION

.1 Apply insulation to clean surfaces in accordance with CAN/ULC S705.2 and manufacturer's printed instructions.

.2 Use primer where recommended by manufacturer.

.3 Apply only when surfaces and environmental conditions are within limits prescribed by the material manufacturer and the CAN/ULC S705.2 Installation standard.

.4 Apply in consecutive passes as recommended by manufacturer to thickness as indicated on drawings. Passes shall be not less than 15 mm and not greater than 50 mm.

.5 Do not install spray polyurethane foam within 75 mm of heat emitting devices such as light fixtures and chimneys.

.6 Finished surface of foam insulation to be free of voids and imbedded foreign objects.

.7 Remove masking materials and over spray from adjacent areas immediately after foam surface has hardened. Ensure cleaning methods do not damage work performed by other sections.

.8 Trim, as required, any excess thickness that would interfere with the application of cladding/covering system by other trades.

.9 Apply sprayed foam insulation in thickness as indicated on Drawings.

3.5 PROTECTION

.1 The spray polyurethane foam shall be protected from ultraviolet as per manufacturer's requirements.

.2 The spray polyurethane foam shall be covered with an appropriate thermal barrier meeting local building codes when installed on the interior of the building.

3.6 CLEANING

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

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

END OF SECTION

Part 1 General

1.1 DESCRIPTION

.1 Supply labour, materials and equipment to complete the Work as shown on the Drawings and as specified herein to bridge and seal air leakage pathways and gaps through the building envelope.

.2 Materials and installation methods of the primary vapour permeable air barrier membrane system and accessories.

1.2 REFERENCES

.1 The following standards are applicable to this section:

.1 ASTM E 2357: Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.

.2 ASTM E 2178: Standard Test Method for Air Permeance of Building Materials.

.3 ASTM E 283: Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

.4 ASTM E 96: Water Vapour Transmission of Materials.

.5 ASTM C 920; Standard Specification for Elastomeric Joint Sealants.

.6 ASTM C 1193; Standard Guide for Use of Joint Sealants.

.7 ASTM E 84: Test Method for Surface Burning Characteristics of Building Materials.

.8 ICC-ES AC 38: Acceptance Criteria for Water-Resistive Barriers.

.9 ICC-ES AC 188: Acceptance Criteria for Roof Underlayments.

.10 ICC-ES AC 48: Acceptance Criteria for Roof Underlayment for use in Severe Climates.

.11 AAMA 2400: Standard Practice for Installation of Windows with a Mounting Flange in Stud Frame Construction.

.12 ASTM E 2112: Standard Practice for Installation of Exterior Windows, Doors and Skylights.

.13 AAMA 711-05: Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products.

1.3 SUBMITTALS

.1 Submit documentation from an approved independent testing laboratory certifying compliance with a) the air leakage rates of the air barrier membrane assembly, including primary membrane, primer and sealants have been tested to meet ASTM E2357, b) ICC-AC 38, c) Peel adhesion to unprimed plywood and cyclic and elongation per ICC-AC 48, d) Class A flame spread index and smoke development per ASTM E 84.

.2 Submit documentation from an approved independent testing laboratory, certifying that the air leakage and vapour permeance rates of the air barrier membrane system exceed the requirements of the National Building Code (NBC) and in accordance with ASTM E 2178 and ASTM E 2357.

.1 Test report submittals shall include test results on porous substrate and include sustained wind load and gust load air leakage results.

.3 Submit manufacturers' current product data sheets for the air barrier membrane system.

1.4 QUALITY ASSURANCE

.1 Submit document stating the applicator of the primary air barrier membranes specified in this section is authorized by the manufacturer as suitable for the execution of the Work.

.2 Perform Work in accordance with manufacturer's written instructions and this specification.

.3 Maintain one copy of manufacturer's written instructions on site.

.4 Allow access to Work site by the air barrier membrane manufacturer's representatives.

.5 Components used shall be sourced from one manufacturer, including sheet membrane, air barrier sealants, primers, mastics, flashings and adhesives.

.6 Single-Source Responsibility:

.1 Obtain air barrier materials from a single manufacturer regularly engaged in manufacturing the product.

.2 Provide products which comply with all federal, provincial, and local regulations with regards to controlling the use of volatile organic compounds (VOC's).

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Refer to current Product MSDS for proper storage and handling.

.2 Deliver all materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.

.3 Store all roll materials on end in original packaging. Protect rolls from direct sunlight and weather until ready for use.

.4 Store all air barrier membranes, adhesives and primers at temperatures of 5 degrees Celsius (40 degrees F) and rising.

.5 Keep solvent away from open flame or excessive heat.

.6 Waste Management and Disposal.

.7 Contractor to verify compliance for Volatile Organic Compounds (VOC) limitations of products to comply with all federal, provincial, and local regulations controlling use of volatile organic compounds (VOC).

1.6 ALTERNATIVES

.1 Submit requests for alternates a minimum of ten (10) working days prior to bid date

.2 Alternate submissions to include:

.1 Evidence that alternate materials meet or exceed performance characteristics of Product requirements as well as documentation from an approved independent testing laboratory certifying the air leakage rates and vapour permeance rates of the air barrier membranes, including primary membrane and transition sheets meet the requirements of ASTM E2357, NBC (Canadian National Building Code) and in accordance with ASTM E2178.

.2 Manufacturer's complete set of air barrier membrane system details showing a continuous plane of air tightness throughout the building envelope.

.3 Provide a list of a minimum of 15 projects of similar scope and nature successfully completed in a similar climate.

.4 Supply a list of accessory products including adhesive primers and sealants.

.3 Acceptable alternates will be confirmed by addendum. Substitute materials not approved in writing prior to bid date shall not be permitted for use on this project.

1.7 WARRANTY

.1 Provide manufacturer's standard 12-year assembly warranty.

Part 2 Products

2.1 MATERIALS

.1 Air barrier membrane components and accessories must be obtained as a single-source from the membrane manufacturer to ensure total system compatibility and integrity.

2.2 MEMBRANES (BASIS-OF-DESIGN)

.1 Self-Adhered membrane for wall transitions and terminations shall be Blueskin® SA or LT Blueskin® SA manufactured by Henry; an SBS modified bitumen, self-adhering sheet membrane which is integrally laminated to a blue engineered thermoplastic film. Membrane shall have the following physical properties:

.1 Membrane Thickness: 1.0 mm (0.040 inches (40 mils)).

.2 Low temperature flexibility: -30°C to ASTM D146.

.3 Elongation: 200% minimum to ASTM D412-modifed.

.4 Minimum Puncture Resistance 178 N to ASTM E154.

.5 Lap Peel Strength: 4378.4 N/m to ASTM D903; 180° bend.

.6 Auxiliary tested component of ASTM E2357 for Air Leakage of Air Barrier Assemblies.

.7 Approved alternate materials:

.1 IKO Aquabarrier AVB-36" LT

.2 Soprema Sopraseal Stick 1100T

2.3 ADHESIVE PRIMERS

.1 Adhesive Primer for primary self-adhering water resistive air barrier membrane, self-adhering transition membrane and SBS modified bitumen membranes at all temperatures shall be Blueskin® Adhesive manufactured by Henry, a synthetic rubber based adhesive, quick setting, having the following physical properties:

.1 Colour: Blue.

.2 Weight: 0.8 kg/l.

.3 Solids by weight: 35%.

.4 Drying time (initial set): 30 minutes.

.5 Auxiliary tested component of ASTM E 2357 for Air Leakage of Air Barrier Assemblies.

.6 Approved alternate materials:

.1 IKO S.A.M. adhesive

.2 Soprema Sopraseal Stick primer

.2 Adhesive Primer with low VOC content for self-adhering membranes at all temperatures shall be Blueskin® LVC Adhesive manufactured by Henry-Bakor, a synthetic rubber-based adhesive, quick setting, having the following physical properties:

.1 Colour: Blue,

.2 VOC: <240 g/L,

.3 Solids by weight: 40%,

.4 Drying time (initial set): 30 minutes

.5 Approved alternate materials:

.1 IKO S.A.M. LVC adhesive

.2 Soprema Elastocol Stick Zero

.3 Primer for self-adhering membranes at temperatures above –4°C shall be Aquatac™ Primer manufactured by Henry-Bakor, a polymer emulsion-based adhesive, quick setting, having the following physical properties:

.1 Colour: Aqua,

.2 Weight: 1.0 kg/l,

.3 Solids by weight: 53%,

.4 Water based, no solvent odours,

.5 Drying time (initial set): 30 minutes at 50% RH and 20°C.

.6 Approved alternate materials:

.1 IKO Water based adhesive

.2 Soprema Elastocol Stick H2O

2.4 PENETRATION & TERMINATION SEALANT

.1 Termination Sealant shall be HE925 BES Sealant manufactured by Henry; a moisture cure, medium modulus polymer modified sealing compound having the following physical properties:

.1 Compatible with sheet air barrier, roofing and waterproofing membranes and substrate,

.2 Complies with Fed. Spec. TT-S-00230C, Type II, Class A.

.3 Complies with ASTM C 920, Type S, Grade NS, Class 25.

.4 Elongation: 450 – 550%.

.5 Remains flexible with aging.

.6 Seals construction joints up to 25 mm (1 inch) wide.

.7 Auxiliary tested component of ASTM E 2357 for Air Leakage of Air Barrier Assemblies.

Part 3 Execution

3.1 EXAMINATION

.1 Verify that surfaces and conditions are ready to accept the Work of this section. Notify Contract Administrator in writing of any discrepancies. Commencement of the Work or any parts thereof shall mean acceptance of the prepared substrates.

.2 All surfaces must be sound, dry, clean and free of oil, grease, dirt, excess mortar or other contaminants detrimental to the adhesion of the membranes. Fill voids, gaps and spalled areas in substrate to provide an even plane. Strike masonry joints full-flush.

.3 Curing compounds or release agents used in concrete construction must be resin based without oil, wax or pigments.

3.2 SURFACE PREPARATION

.1 All surfaces must be sound, clean and free of oil, grease, dirt, excess mortar or other contaminants. Fill spalled areas in substrate to provide an even plane.

.2 New concrete should be cured for a minimum of 14 days and must be dry before primer for air barrier membranes are applied.

.3 Ensure all preparatory Work is complete prior to applying primary air barrier membrane.

.4 Mechanical fasteners used to secure sheathing boards or penetrate sheathing boards shall be set flush with sheathing and fastened into solid backing.

.5 Pre-cast and concrete block substrates are required to be adhesive primed prior to application of self-adhering water resistive air barrier membrane.

3.3 APPLICATION OF SUBSTRATE ADHESIVE PRIMER

.1 Required Adhesive Primer for SBS Modified Self-Adhered Membranes.

.1 For the application of SBS modified self-adhered window sill pan flashings, through-wall flashings and other applications of SBS modified self-adhered transition membranes, the substrate needs to be conditioned with applicable adhesive primer.

.2 Apply adhesive primer at rate recommended by manufacturer to all areas to receive SBS modified self-adhering sheet membrane as indicated on drawings by roller or spray and allow to fully dry.

.3 Adhesive primed surfaces not covered by self-adhering membrane or self-adhering through-wall flashing membrane during the same working day must be re-conditioned.

.2 Adhesive Primer for Primary Water Resistive Air Barrier Membrane.

.1 Conditions not typically requiring adhesive-primers:

.2 Application above 40°F (5°C) to clean & dry wood and sheathing boards, such as plywood and OSB. Ensure substrate and membrane temperatures are above 40°F (5°C)

.3 Conditions requiring use of adhesive-primers:

.4 Metal, DensGlass® products, exterior grade sheathing board, Concrete, CMU and other masonry substrates.

.5 If appropriate adhesion is not obtained due to conditions beyond the control of the installer, the adhesion can be aided by continuous application of adhesive-primer to the substrate and laps. Ensure all primed surfaces are covered in the same day.

3.4 INSTALLATION OF AIR BARRIER SYSTEM

.1 INSIDE AND OUTSIDE CORNERS

.1 Seal inside and outside corners of sheathing boards with a strip of self-adhering vapour permeable membrane extending a minimum of 75mm (3 inches) on either side of the corner detail.

.2 For inside corners, pre-treat the corner with a continuous 13mm (½ inch) bead of termination sealant.

.3 Adhesive prime surfaces in an intermittent pattern, at a rate of 3 – 6 m²/L (200 – 250 sq ft/gal) where appropriate due to surface conditions, to achieve surface adhesion as per manufacturers' instructions and allow drying.

.4 Align and position self-adhering transition membrane, remove protective film and press firmly into place. Ensure minimum 50 mm (2 inches) overlap at all side laps and 75 mm (3 inches) overlap at all end laps of membrane.

.5 Roll all laps and membrane with a counter top roller to ensure seal.

.2 TRANSITION AREAS

.1 Tie-in to structural beams, columns, floor slabs and intermittent floors, parapet curbs, foundation walls, roofing systems and at the interface of dissimilar materials as indicated in drawings with self-adhered air barrier transition membrane.

.2 Prime surfaces in an intermittent pattern, at a rate of 3 – 6 m²/L (200 – 250 sq. ft/gal) where appropriate due to surface conditions, to achieve surface adhesion as per manufacturers' instructions and allow to dry.

.3 Align and position self-adhering transition membrane, remove protective film and press firmly into place. Provide minimum 75 mm (3 inch) lap to all substrates.

.4 Ensure minimum 50 mm (2 inches) overlap at all side laps and 75 mm (3 inches) overlap at all end laps of membrane.

.5 Roll all laps and membrane with a counter top roller to ensure seal.

.3 PRIMARY WATER RESISTIVE AIR BARRIER

.1 Apply self-adhering water resistive air barrier membrane complete and continuous to substrate in an overlapping shingle fashion and in accordance with manufacturer's recommendations and written instructions. Stagger all vertical joints.

.2 Prime surfaces in an intermittent pattern, at a rate of 3 – 6 m²/L (200 – 250 sq ft/gal) where appropriate [reference preceding spec note] to achieve surface adhesion as per manufacturers' instructions and allow to dry.

.3 Align and position self-adhering membrane to substrate, remove top panel of protective release film and press firmly into place.

.4 Ensure alignment, hold membrane in place to avoid wrinkles and sequentially remove remaining panels of protective film and press firmly into place.

.5 Ensure minimum 75 mm (3 inch) overlap at all end and 50 mm (3 inch) side laps of subsequent membrane applications.

.6 Apply pressure to all membrane surfaces, laps and flashings using an appropriate roller to provide best possible surface adhesion.

.7 At the end of each days work seal the top edge of the membrane where it meets the substrate with termination sealant. Trowel to a feathered edge to seal termination and shed water.

3.5 APPLICATION OF TERMINATION SEALANT

.1 Seal membrane terminations, heads of mechanical fasteners, masonry tie fasteners, around penetrations, duct work, electrical and other apparatus extending through the primary water resistive air barrier membrane and around the perimeter edge of membrane terminations at window and door frames with specified termination sealant.

3.6 FIELD QUALITY CONTROL

.1 Make notifications when sections of Work are complete to allow review prior to covering air barrier system.

3.7 PROTECTION

.1 Damp substrates must not be inhibited from drying out. Do not expose the backside of the substrate to moisture or rain.

.2 Cap and protect exposed back-up walls against wet weather conditions during and after application of membrane, including wall openings and construction activity above completed air barrier installations.

.3 Water resistive air barrier membranes are not designed for permanent exposure. Good practice calls for covering as soon as possible, not to exceed 150 days.

END OF SECTION

1. GENERAL

1.1 Work in this section consists of furnishing all access, labour, materials, equipment, supervision and incidentals to supply the metal cladding and/or liner panel system(s) described herein and shown on the drawings including the supply and installation of all metal framing components and connections to secure the metal cladding system to the structural back-up.

1.2 Design Considerations

.1 Maximum offset from true alignment between two adjacent members abutting end to end in line: 1/16".

1.3 References

.1 CAN/CGSB 93.4-92: Galvanized and Aluminum-Zinc Alloy Coated Steel Siding, Soffits and Fascia, Prefinished, Residential.

.2 CAN3/CSA S136-12: North American Specification for the Design of Cold-Formed Steel Structural Members.

.3 CSSBI 20M-16: Standard for Sheet Steel Cladding for Architectural, Industrial and Commercial Building Applications.

.4 ASTM A653/A653M-15e1: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

.5 2010 National Building Code of Canada.

.6 Cladding to be designed to accommodate thermal movement over an ambient temperature range of -40˚C to +50˚C.

.7 Design expansion joints to accommodate movement in cladding and between cladding and structure, to prevent permanent distortion or damage to the cladding.

.8 Design wall system to maintain the following erection tolerances:
- .1 Maximum variation from plane or location shown on shop drawings: 0.75 inch / 30 feet.
- .2 Maximum offset from true alignment between two adjacent members abutting end to end in line: 0.04 inches.

1.4 Quality Assurance and Substitutions

.1 Manufacturer of cladding system and installer shall demonstrate at least five years' experience in projects similar in scope.

.2 This section establishes the standard of quality required for the cladding system. Proposed substitutions must meet this standard, and will be considered as follows:
- .1 A written request for approval of a substitution is received at least seven (7) days prior to tender closing.
- .2 The request includes a complete item-by-item description comparing the proposed substitution to the specified system, together with manufacturer's literature, samples, test data, engineering standards and performance evaluation indicating comparable standards to those specified.

1.5 Handling and Protection

.1 Store cladding products and all components of the wall system in accordance with manufacturer's recommendations and protected from the elements.

.2 Protect pre-finished steel during fabrication, transportation, site storage and erection, in accordance with CSSBI Standards.

1.6 Samples

.1 Submit duplicate 12" x 12" samples of siding and flashing material, of colour and profile specified.

.2 Profile and final colour selection to be approval by City of Winnipeg.

1.7 Shop Drawings

.1 Submit shop drawings in accordance with Section 01330 – Submittal Procedures.

.2 Indicate dimensions, profiles, attachment methods, schedule of wall elevations, trim and closure pieces, and related work.

2. MATERIALS

2.1 Steel Cladding

.1 Fabricated from ASTM A653M-90 structural quality Grade 230 galvanized steel, with Z275 zinc coating, as designated by ASTM A653M-90 panel. Thickness to be 20 gauge (0.0299").

.2 Pre-painted with HMP or 10,000 Series. Colour samples to be submitted to City of Winnipeg for review. Final colour will be selected by the Contract Administrator after mock-up installation has been completed.

.3 Acceptable product:

(a) Interior Liner Panels:	Profile to match existing
Colour:	To match existing as approved by Contract administrator

2.2 Supporting Assembly

.1 Steel studs and track shall be in accordance with the ANSI North American Standard for Cold-Formed Steel Framing and shall have a minimum base steel thickness of 0.455 mm and a depth of 92.1 mm as indicated on Drawings.

2.3 Fastening System

.1 All metal panel to support components shall utilize a No.14 x ½" HWH Teks screw incorporating Climaseal finish and Type 'S' washer, supplied and installed in accordance with manufacturer's specifications.

.2 Paint all exposed fasteners threads to match metal panel colour.

2.4 Accessories

.1 Flashing, Trim and Closures: Fabricate to profiles indicated on drawings, or as required to meet performance requirements. Use preformed corner pieces only. Double back exposed edges. Material to match cladding in exposed locations.

.2 Sealants:
.1 Refer to Section 07 92 00 Joint Sealants.

3.0 EXECUTION

3.1 Fabrication

.1 All components including flashings shall be fabricated wall components to comply with dimensions, profiles, thicknesses and details as shown on the drawings.

.2 Fabricate all components of the system in the factory, ready for field installation.

.3 Provide cladding and all accessories in longest practicable length to minimize field lapping of joints.

3.2 Execution

.1 Install cladding in accordance with CGSB 93.5-92, and manufacturer's written instructions. Examine work of other trades over which cladding will be applied for conformity to drawings. Report all discrepancies to consultant prior to proceeding.

.2 Install metal furring strips and support girts as indicated on drawings. Ensure girt installation provides a true surface.

.3 Install continuous starter strips, inside and outside corners and edgings as indicated.

.4 Install outside corners, fillers and closure strips with carefully formed and profiled work.

.5 Install cladding in accordance with manufacturer's standard installation procedures, providing proper laps and detailing to ensure a tight face.

.6 Maintain joints in cladding, true to line, tight fitting, hairline joints.

.7 Components are to be attached in a manner that will not restrict thermal expansion and contraction. Oversize fastener holes as shown by 1/8" for metal panel pieces longer than 12'.

.8 Caulk all junctions to adjoining work with sealant. Do work in accordance with Section 07 92 00.

3.3 Touch-up and Cleaning

.1 Touch up minor paint abrasions with manufacturer approved touch-up paint.

.2 Clean cladding by dry wiping.

.3 Field paint all cut or exposed edges not treated with HMP coating with manufacturer approved coating.

3.4 Warranty

.1 The system manufacturer and/or contractor shall provide a written single source and material warranty stating that the system shall be free of defects relating to workmanship or material deficiency for a minimum two-year period following installation. The following problems shall be specifically covered under the warranty:

a. Blistering, peeling or failure in the pre-finished metal panel coating system.

b. Dislodgement and/or displacement in the metal panel system including but not limited to the metal panel and steel framing which supports the cladding.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

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

1.2 REFERENCES

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

.1 ASTM C919-18, Standard Practice for Use of Sealants in Acoustical Applications.

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

.1 Material Safety Data Sheets (MSDS).

1.3 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.

1.4 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.

1.5 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 Celsius.

.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.

1.6 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 Silicones One Part.

.1 To CAN/CGSB-19.13.

.1 Acceptable material: 795 Silicone Building Sealant by Dow Corning. Colour as selected by the Contract Administror.

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 SECTION INCLUDES

.1 Documents and certain applicable terminology.

.2 Associated requirements.

.3 Work expectations.

.4 Work by other parties.

.5 Words and terms.

.6 Examination

.7 Closeout submittals

.8 Operation and maintenance manual format.

.9 Contents each volume.

.10 Recording actual site conditions.

.11 Record documents.

.12 Warranties and bonds.

.13 Quality Assurance.

.14 Demonstration and Training

.15 Conditions for Demonstrations

.16 Shop drawings and product data.

.17 Samples.

.18 Certificates and transcripts.

.19 Product quality, availability, storage, handling, protection, and transportation.

.20 Product changes and substitutions.

.21 Manufacturer's instructions.

.22 Quality of Work, coordination and fastenings.

.23 Accessibility of Equipment

.24 Coordination, work for other trades, electrical requirements, temporary use of equipment.

.25 Existing facilities.

1.2 RELATED SECTIONS

.1 Applicable sections in Division 01, including:

- .1 Allowances
- .2 Construction Progress Documentation.
- .3 Submittal Procedures.
- .4 Product Exchange Procedures.
- .5 Substitutions
- .6 Closeout Submittals.

.2 This section describes common work applicable to all Sections within project Divisions 21, 22, 23 and 25.

1.3 COMPLEMENTARY DOCUMENTS

.1 Drawings, specifications, and schedules are complementary to each other and what is called for by one will be binding as if called for by all.

.2 Should any discrepancy appear between the drawings and specifications, which leaves the Contractor in doubt as to the true intent and meaning of the plans, and specifications, the Contractor shall obtain a ruling in writing from the Contract Administrator in writing before submitting the bid. If this is not done it will be assumed that the most expensive alternative has been included in the bid price.

.3 The drawings for mechanical work are performance drawings. They are generally diagrammatic and are not to scale unless detailed otherwise. They establish scope, material and installation quality and are not detailed installation instructions showing every offset, fitting, valve or every difficulty encountered during execution of work and will not be used as an excuse for deficiencies or omissions. Where required installations are not shown on plans or are only shown diagrammatically, install in such a way as to conserve headroom and interfere as little as possible with free use or space through which they pass, while adequate space is allowed for service, maintenance, repair, or replacement for all equipment.

.4 Drawings indicate general location and route of new and existing mechanical systems. The review of exact location and routing of systems prior to bidding is the responsibility of the Contractor. Install piping and duct systems not exactly shown in plan or indicated by note, by graphic, or diagrammatically in schematic or riser diagrams to provide an operational assembly or system.

.5 Install components to physically conserve headroom, to minimize furring spaces, to accommodate installed Work, or other obstructions.

.6 Install ceiling mounted or exposed mechanical components in accordance with reflected ceiling drawings or floor plans.

.7 Locate devices with primary regard for convenience of operation and usage.

.8 Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or additional Work beyond Work described, to be brought to the attention of the Contract Administrator.

.9 All specification sections of the Project Manual and Drawings are affected by requirements of Division 01 sections.

1.4 DESCRIPTION OF THE WORK

.1 Division of the Work among other contractors, subcontractors, suppliers or vendors is solely the Contractor's responsibility. Neither the City of Winnipeg nor Contract Administrator assumes any responsibility to act as an arbiter to establish subcontract terms or disagreements between sectors or disciplines of the Work.

1.5 CONTRACT METHOD

.1 Construct Work under the contract requirements in the applicable Division sections.

.2 Contract Documents were prepared by the Contract Administrator for the City of Winnipeg. Any use which a third party makes of the Contract Documents, or any reliance on or decisions to be made based on them, are the responsibility of such third

parties. The Contract Administrator accepts no responsibility for any damages suffered by any third party as a result of decisions made or actions based on the Contract Documents.

1.6 PERMITS, INSPECTION AND TESTING

.1 File all necessary notices and approved layouts, obtain and pay for all Local Authority and Fire Underwriters Inspections, approvals and permits applicable to each Mechanical Section. Make changes required to secure Local Authorities approval, without extra cost. Where conflicting requirements occur, comply with most stringent regulation. Note that requirements shown or specified may exceed minimum standards set by Local Authorities.

.2 The Regulations of the A.S.M.E. Code and the Provincial Labour Department shall cover the design, manufacture, installation, welding and tests of piping and other equipment as specified hereafter.

.3 Obtain Registration Certificates for all pressure vessels, with suitable metal-framed glass covers installed where directed. Furnish all certificates required by Local Authorities before acceptance of building by City of Winnipeg.

.4 The City of Winnipeg may request the Mechanical Section to operate device or material installed for such time as Contract Administrator may require, as a thorough test, before final acceptance. Such tests shall not be construed as evidence of acceptance, and no claim for cost of such operation for test, or damage due to inadequacy or defect will be recognized.

.5 Note that site reviews by the Contract Administrator are for the purpose of determining in general if the work is proceeding in accordance with the Contract Documents, and to endeavour to guard the City of Winnipeg against defects and deficiencies and not to superintend the execution of the work, which is the Mechanical Contractor's and their Subcontractors' responsibility.

1.7 WORDS AND TERMS

.1 Conform to the following definitions and their defined meanings:

.1 **Install:** To remove from site storage, move or transport to intended location, install in position, connect to utilities, repair site caused damage, and make ready for use.

.2 **Supply:** To acquire or purchase, ship or transport to the site, unload, remove packaging to permit inspection for damage, re-package, replace damaged items, and safely store on-site.

.3 **Provide:** Wherever the term "provide" is used in relationship to equipment, piping and other materials specified for the work, it means "supply, install and connect". Wherever the terms "provide" is used in connection with services such as testing, balancing, start-up, preparation of drawings for any part of the work, it means procure, prepare, supervise, take responsibility for, and pay for these services.

.4 **Typical:** A representative characteristic that is standard for all installations whether individually noted or not throughout the documents. "Typical" applies to each individual or combined installation except where specifically noted or otherwise indicated that the application is non-typical.

.5 **Exposed:** Any work not concealed in wall, shaft, or ceiling cavities or spaces. Work behind doors, in closets or cupboards or under counters is considered exposed.

.6 **New:** Produced from new materials.

.7 **Renewed:** Produced or rejuvenated from an existing material to like-new condition to serve a new or existing service.

.8 **Defective:** A condition determined exclusively by the Contract Administrator.

1.8 EXAMINATION

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

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

.3 Examine all contract documents to ensure work can be performed without changes to the Work as shown on plans. No allowance will be made later for necessary changes, unless notification of interferences have been brought to Contract Administrator's attention in writing, prior to bid closing.

.4 Verify that materials and equipment can be delivered to the place of the work and that sufficient space and access is available to permit installation as shown on the drawings.

.5 Verify the locations and inverts of service lines leaving and entering building to ensure their proper function prior to commencing work.

1.9 CLOSEOUT SUBMITTALS

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

.2 Copy will be returned with Contract Administrator's comments.

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

.4 Two (2) weeks prior to Substantial Performance of the Work, submit to the Contract Administrator, three (3) final copies of operating and maintenance manuals in Canadian English.

.5 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.

.6 If requested, furnish evidence as to type, source and quality of products provided.

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

.8 Pay costs of transportation.

1.10 OPERATION AND MAINTENANCE MANUAL FORMAT

.1 Refer to Section 01 78 00 for formats for manuals.

.2 Organize data in the form of an instructional manual.

.3 Drawings: provide as folder within manual.

1.11 CONTENTS - EACH VOLUME

.1 Refer to Section 01 78 00 for formats for contents.

.2 For each product or system, 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 clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

.4 Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

1.12 RECORDING ACTUAL SITE CONDITIONS

.1 Record information on a full-sized set of drawings, and within the Project Manual.

.2 Annotate with coloured felt tip marking pens, maintaining separate colours for each major system, for recording changed information.

.3 Record information concurrently with construction progress. Do not conceal Work of the Project until required information is accurately recorded.

.4 Contract drawings and shop drawings: legibly mark each item to record actual construction, including:

.1 Field changes of dimension and detail.

.2 Changes made by change orders.

.3 Details not on original Contract Drawings.

.4 References to related shop drawings and modifications.

1.13 RECORD DOCUMENTS

.1 Prior to Substantial Performance of the Work, electronically transfer the marked-up information from the as-built documents, as follows:

.1 Drawings: Adobe Acrobat (PDF).

.2 Specifications: Adobe Acrobat (PDF).

.2 Mark revised documents as "RECORD DOCUMENTS". Include all revisions.

.3 Submit completed record documents to Contract Administrator on a CD, DVD, or by electronic transfer.

1.14 WARRANTIES AND BONDS

.1 Refer also to Section 01 78 00 for Warranties and Bonds.

.2 Provide written guarantee that complete installation including materials, work and operation of all equipment provide under Mechanical Sections are first class in every respect, subject only to improper usage by City of Winnipeg, and make good forthwith when reported all defects which develop within one year from date of acceptance of building by City of Winnipeg at no additional cost to the City of Winnipeg.

.3 In addition, guarantee heating and cooling systems through one complete heating or cooling season, as applicable.

.4 Deliver to the City of Winnipeg all equipment manufacturer's guarantees specified in excess of one year.

1.15 FABRICATION AND WORKMANSHIP

.1 Employ skilled mechanics in their respective trades, under competent supervision, and where required by Provincial or Local regulations holder of acceptable qualification certificates.

1.16 QUALITY ASSURANCE

.1 Provide testing organization services as specified in subsequent Sections.

.2 Testing organization: Current member in good standing of their respective professional or industry organization and certified to perform specified services.

.3 Comply with applicable procedures and standards of the certification sponsoring association.

.4 Perform services under direction of supervisor qualified under certification requirements of sponsoring association.

.5 Qualifications:

.1 Provide adequate workforce training through meetings and demonstrations.

.2 Provide a designated experienced person on site with de-construction experience throughout the project for consultation and supervision purposes.

1.17 SHOP DRAWINGS - ADMINISTRATIVE REQUIREMENTS

.1 Shop drawings shall be submitted electronically in PDF format documents to shopdrawings@eppsiepman.com.

.2 Submit to Contract Administrator submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.3 Work affected by submittal shall not proceed until review is complete.

.4 Present Shop Drawings, product data, samples and mock-ups in SI Metric and/or Imperial inch-pound units, to match the units used in the schedules.

.5 Review submittals prior to submission to Contract Administrator. 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.

.6 Submittals not stamped, signed, dated, identified as to specific project, and attesting to their being reviewed will be returned without being examined and shall be considered rejected.

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

.8 Verify field measurements and affected adjacent Work are coordinated.

.9 Contractor's responsibility for errors and omissions in submission is not relieved by Contract Administrator's review of submittals.

.10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator review.

.11 Keep one (1) reviewed copy of each submission on site.

1.18 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 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 coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications. Indicate layouts, quantity, details of equipment, control wiring diagrams, sizes, capacities and roughing in and exact requirements for concrete pits, bases and other supporting members.

.3 Each shop drawing must be certified by manufacturer and as such shall indicate that all product engineering has been performed to ensure the product will meet the requirements of the intended installation.

.4 Shop drawings for grilles, registers and diffusers shall be accompanied by an itemized list indicating the unit locations by room number and the unit size.

.5 Allow ten (10) days for Contract Administrator's review of each submission.

.6 Adjustments made on Shop Drawings by Contract Administrator are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Contract Administrator prior to proceeding with Work.

.7 Make changes in Shop Drawings as Contract Administrator may require, consistent with Contract Documents. When resubmitting, notify Contract Administrator in writing of any revisions other than those requested.

.8 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.

.9 Submissions shall 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 other parts of the Work.

.10 After Contract Administrator's review, distribute copies.

.11 Submit one (1) copy of Shop Drawings as a pdf document by email attachment for each requirement requested in specification Sections and as Contract Administrator may reasonably request. Any electronic copy of shop drawings shall bear all the required marks of certification and approval by the manufacturer and contractor(s) as indicated above. The Contract Administrator will review and mark up one copy of the shop drawing, and return to the contractor by email attachment. The contractor shall then make copies as required for ordering and documentation purposes. Multiple copies of shop drawings will not be returned.

.12 Submit one electronic copy of product data sheets or brochures for requirements requested in specification sections and as requested by Contract Administrator where Shop Drawings will not be prepared due to standardized manufacture of product. Submittals shall be submitted as a pdf document by email attachment, or delivered as a hard copy. Any electronic copy of shop drawings shall bear all the required marks of certification and approval by the manufacturer and contractor(s) as indicated above.

.13 Delete information not applicable to project.

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

.15 If upon review by Contract Administrator, no errors or omissions are discovered or if only minor corrections are made, one electronic copy will be returned and fabrication and installation of Work may proceed. If Shop Drawings are rejected, noted copy will be returned and re-submission of corrected Shop Drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed. The contractor shall then make copies as required for ordering and documentation purposes. Multiple copies of shop drawings will not be returned.

.16 Checking of shop drawings by the Contract Administrator does not constitute acceptance of responsibility. Such checking constitutes assistance only to the Mechanical Division in the proper execution of their work.

1.19 PRODUCT QUALITY

.1 Products, materials, equipment, parts or assemblies (referred to as Products) incorporated in Work: New, not damaged or defective, of best quality (compatible with specification requirements) for purpose intended. If requested, provide evidence as to type, source and quality of Products provided.

.2 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.

.3 Should any dispute arise as to quality or fitness of Products, decision rests strictly with Contract Administrator.

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

.5 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.

1.20 AVAILABILITY

.1 Immediately upon signing Contract, review Product delivery requirements and anticipate foreseeable supply delays for any items.

.2 If delays in supply of Products are foreseeable, notify Contract Administrator of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

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

1.21 STORAGE AND PROTECTION

.1 Store and protect Products in accordance with manufacturers' written instructions.

.2 Store with seals and labels intact and legible.

.3 For exterior storage of fabricated Products, place on sloped supports above ground.

.4 Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.

.5 Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.

.6 Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

1.22 TRANSPORTATION AND HANDLING

.1 Transport and handle Products in accordance with manufacturer's written instructions.

.2 Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.

.3 Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

.4 Protect all finished and unfinished work from soiling or damage, cover floors with tarpaulins or plywood as necessary, and repair any damage resulting from work of Mechanical Section.

.5 Protect finished surfaces to remain exposed, by paper, polyethylene or other satisfactory removable protective covering using paste acceptable to fixture manufacturer to prevent possible damage to finishes, until all reason for construction damage has passed and until acceptance by City of Winnipeg, and make good any such damage.

1.23 SPECIAL CLEANING

.1 Maintain tidiness within work of Mechanical Sections and at completion remove protective paper, labels, etc. and tools and waste materials. Leave clean and in perfect operating condition.

.2 Remove dirt, rubbish, grease, and dust for which this section is responsible from all exposed surfaces and fixtures.

.3 Operate, drain and flush out bearings and refill with new charge of lubricant, before final acceptance.

.4 Remove tools, surplus, and waste material from the building site upon completion of work. Clean grease, dirt, and excess material from walls, floors, ceilings, surfaces, and fixtures for which this Contractor was responsible, and leave the premises suitable for immediate use.

.5 At the end of construction all systems shall be left ready for operation.

.6 This Section shall be responsible for repair work as may be necessary to remove dents and touch-up of factory finishes.

1.24 PRODUCT CHANGES & SUBSTITUTIONS

.1 Change in Product/Products: Submit request for substitution or alternative in accordance with this Section, the Instructions to Bidders, and Division 01 Product Exchange Procedures Division 01 Substitutions Sections. In case of a discrepancy between this section and Division 00 and Divisions 01, the more stringent requirements shall apply.

.2 The Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this section.

.3 Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

.4 Any substituted item submitted for consideration must not exceed the available space limitations, and all additional costs for mechanical, electrical, structural and architectural revisions required to incorporate the substituted material shall be the responsibility of the Mechanical Division. Review maximum dimensions and weights when provided in the specification and schedules, and where not specified review the drawings for space limitations.

.5 A request constitutes a representation that the Bidder:

.1 Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.

.2 Will provide the same warranty for the Substitution as for the specified Product.

.3 Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to City of Winnipeg.

.4 Waives claims for additional costs or time extension which may subsequently become apparent.

.5 Will reimburse City of Winnipeg and Contract Administrator for review or redesign services associated with re-approval by authorities.

.6 Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

1.25 MANUFACTURER'S WRITTEN INSTRUCTIONS

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

.2 Notify Contract Administrator in writing, of conflicts between specifications and manufacturer's instructions, so that Contract Administrator may establish course of action.

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

1.26 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 Contract Administrator if required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. Contract Administrator reserves right to require dismissal from site any workers deemed incompetent or careless.

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

.4 Assume full responsibility for layout of own work and for any damage caused to property of others through improper location or poor workmanship.

1.27 COORDINATION

.1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Check levels shown before commencement to ensure adequate falls for sewers and pipes and report discrepancies immediately. Failure to so check and report does not relieve this section from responsibility for consequent extra expenditures.

.3 Where space is indicated as reserve for future equipment, leave clear and install piping and other work so that connections can be made to future equipment.

.4 Secure approval where necessary to cut holes in either finished or unfinished work, employ section whose work is involved, cut openings no larger than necessary and without damage to adjoining work and carefully repair all damage to match adjacent work. Note the Mechanical Division is responsible for all required cutting and patching relating to this Contract, except as specifically noted otherwise.

.5 Installation of all equipment shall allow sufficient space to facilitate ease of maintenance. Clearance space shall allow for the removal of all components of equipment without hindrance. Where clearance requirements are not shown on the mechanical plans, manufacturer clearances must be maintained at a minimum.

1.28 WORK FOR OTHER TRADES

.1 The Mechanical Contractor shall rough-in for and/or connect up all equipment requiring mechanical services, as shown on drawings or mentioned elsewhere in the specifications.

.2 Supply other trades with all necessary details, rough-in drawings, wiring diagrams, etc. as required.

1.29 ELECTRICAL REQUIREMENTS

.1 Motors and electrical equipment supplied under Mechanical Division shall comply with Electrical Section and electrical characteristics scheduled or shown.

.2 See "Installation and Wiring Controls" in Electrical Section for equipment supplied under Electrical Section.

.3 The Electrical section shall provide starters for all motors and wire from starters to motors, unless otherwise indicated.

.4 The Electrical section shall wire between starters and switching components such as relays, float switches, and pressure switches.

1.30 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate 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.

1.31 ALTERATION WORK

.1 Where work is to be done in existing buildings, accurately survey, provide for avoidance of damage and interference to existing work and rectify any such damage due to work under Mechanical Sections. Accept existing work as it exists at time of tendering.

.2 Carefully dismantle existing mechanical equipment to be removed or relocated. Temporarily disconnect, remove, and reinstall existing equipment, piping, ductwork, conduit, light fixtures, and similar items, which interfere with the new installation after completion of new work or of existing installations to be demolished. Store equipment and materials on the premises as directed by the City of Winnipeg.

.3 All usable salvaged equipment and materials shall remain the property of the City of Winnipeg unless specifically noted otherwise. Such material shall be removed from the building and be safely and neatly stored on the site for removal by the City of Winnipeg. The Contractor shall remove all rejected salvage from the site and legally dispose of it off site.

.4 Reuse existing equipment in new work after first repairing and reconditioning any defective items where noted. Safely cap and seal disconnected mechanical services within finished surfaces.

.5 The abandonment of existing equipment and material in place is not acceptable. All redundant services are to be removed back to active mains, which shall then be capped at existing point of connection.

.6 All mechanical equipment conflicting with new equipment being installed shall be moved or disconnected, without damage, by Contractor and shall remain property of the City of Winnipeg. Remove ducts and piping not required in revised systems and interfering with new installation. This material shall become property of Contractor.

.7 Disconnect existing equipment indicated, intended to be reused, rough-in in new position, and after replacement connect up ready for use.

.8 Removal and relocation of mechanical equipment by relevant Mechanical Sections.

1.32 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.

1.33 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 Type 304 or 316 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.

.5 Double nut all hung equipment.

1.34 PROTECTION OF WORK IN PROGRESS

.1 Prevent overloading of any part of the Project.

.2 Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated, without written approval of Contract Administrator.

END OF SECTION

26 05 00 COMMON WORK RESULTS FOR ELECTRICAL

1.1 GENERAL REQUIREMENTS

.1 The specification covering the General Conditions of the Contract, General Specifications, Instructions to Bidders and all associated sections from an integral part of this specification and shall be read in conjunction herewith.

1.2 SCOPE

.1 Provide all materials, labour, plant and equipment required for a complete and working installation as herein specified and as indicated drawings.

.2 The electrical installation shall be in accordance with the current edition of the Canadian Electrical Code, Provincial and Municipal codes and regulations.

.3 Obtain all permits, approvals and pay all related fees required for this installation.

.4 All equipment supplied under this Contract shall be new and be C.S.A. approved.

.5 Arrange for, and co-ordinate, rough-in and final inspections with City of Winnipeg, Contract Administrator and Building Engineer.

1.3 DEFINITIONS

.1 The following are definitions of terms and expressions used in this specification section:

.1 CONSULTANT means Electrical Engineering Consultant: Epp Siepman Engineering Inc.

.2 INSPECTION AUTHORITY means agent of any authority having jurisdiction over construction standards associated with any part of electrical work on site.

.3 SUPPLY AUTHORITY means electrical power utility company responsible for delivery of electrical power to project.

.4 ELECTRICAL CODE means the current edition of the Canadian Electrical Code or Local Electrical Code in effect at project location.

.5 INDICATE means as shown or noted on the construction documents.

.6 PROVIDE means to supply, install and leave in working order all materials and necessary wiring, supports, access panels, etc., as necessary for equipment indicated.

1.4 EXAMINATION

.1 Prior to submitting a tender, examine the site and local conditions which will affect the work. Refer to Civil, Structural and Mechanical construction documents to ensure that the work under this Contract can be satisfactorily carried out. Report any discrepancies to the Contract Administrator.

.2 Examine all existing apparatus if any to be re-used and verify that the condition of this equipment is suitable for its intended use in the new construction.

1.5 SUPERVISION

.1 Supervision shall be carried out at all times by a responsible and competent supervisor.

.2 Full co-operation shall be shown with other trades to facilitate installations and to avoid delays in carrying out the work.

1.6 ACCURACY OF DATA

.1 Drawings are schematic; exact locations, distances, levels and other dimensions shall be governed by the building as constructed.

.2 Outlets or equipment shall be moved to any point within a 10’ radius when the Contract Administrator requests relocation before the work has been substantially completed, without additional cost.

.3 Branch circuit wiring shall be installed with circuits arranged as indicated. Conduit and cable runs may be modified to suit the installation.

1.7 SUBMITTALS

.1 Submit a Certificate of Acceptance from the local Inspection Authority.

.2 Maintain a record set of As-Built drawings on the site at all times recording any changes that may occur. At project completion, submit the As-Builts to the Contract Administrator in pdf via email or internet transfer. As-builts shall include circuiting of new and existing equipment to remain, main conduit and feeder runs, including below floor/grade installations.

.3 The Contract Administrator will recommend a suitable deficiency holdback until required documentation and material is submitted.

1.8 TEST

.1 The electrical installation shall be completely tested demonstrating that the equipment and systems installed perform in the manner intended.

1.9 GUARANTEE

.1 The satisfactory operation of all work shall be guaranteed for a period of 12 calendar months after final acceptance of the building, unless noted otherwise.

1.10 REQUEST FOR CHANGE

.1 All quotations in response to request for change shall be submitted complete with an itemized cost breakdown of all materials and labour required in the change.

1.11 GROUNDING

.1 The entire installation shall be grounded in accordance with the Electrical Code.

1.12 WORKMANSHIP

.1 Install equipment, conduit and cables in a workmanlike manner to present a neat appearance to the satisfaction of the Contract Administrator. Install conduit and cable runs parallel and perpendicular in chases, behind furring or above ceilings. In areas where systems are to be exposed (electrical room only), install neatly and group to present a tidy appearance.

.2 Install equipment and apparatus requiring maintenance, adjustment or eventual replacement with adequate clearances and accessibility for same.

.3 Replace work unsatisfactory to the Contract Administrator without extra cost.

.4 All support material for all outlet boxes, junction boxes, etc. in a non-combustible building shall be of non-combustible material. Wood is not acceptable.

1.13 IDENTIFICATION OF EQUIPMENT

.1 Electrical equipment including distribution, cabinets, exterior pole mounted luminaires and stainless steel device cover plates shall be identified using an engraved lamacoid nameplate, either screwed or riveted in place.

.2 Where nylon cover plates are utilized for wiring devices, the identification shall be of the plastic self-adhesive type. The utilization of Dymo 6000 or equal is acceptable.

1.14 CUTTING AND PATCHING

.1 Arrange and pay for all cutting and patching as required for the electrical installation.

1.15 WIRING METHODS

.1 Unless otherwise indicated, all wiring shall be copper, minimum #12 AWG.

.2 All wiring in finished areas shall be concealed. Cable shall be run at right angles to the building lines.

1.16 MOUNTING

.1 Coordinate with Mechanical.

26 03 10 MINOR ELECTRICAL DEMOLITION FOR REMODELING

.1 The building shall remain open and in normal operation as required during the construction period of this contract.

.2 Where existing services such as electrical power, fire alarm system, or communications systems, are required to be disrupted and/or shutdown, coordinate the shut-downs with the City of Winnipeg and carry out the work at a time and in a manner acceptable to them. Carefully schedule all disruptions and/or shutdowns and ensure that the duration is kept to a minimum. A written schedule of each disruption shall be submitted to the City of Winnipeg for approval at least 72 hours in advance of performing the related work. Obtain City of Winnipeg's written consent prior to implementing the shutdown.

.3 Should any connections be required to maintain services during work in the existing building, supply and install all necessary material and equipment and provide all labour at no extra cost. Should any existing system be damaged, make full repairs without extra cost, and to the satisfaction of the City of Winnipeg.

.1 Existing junction boxes shall remain accessible. Relocate as required, or provide access panels rated for wall, floor or ceiling assemblies as required.

.2 Where existing circuiting is modified, include updating of existing identification for devices and equipment to match the existing identification standards.

.3 It shall be the responsibility of the Electrical Contractor to ensure that any coring of holes through wall, floor or ceiling assemblies will not penetrate or damage existing structure, assemblies, conduit, wiring or equipment. Be responsible to take any and all action necessary to correct any damages at no additional cost to the City of Winnipeg. Coring shall be coordinated with all trades prior to implementation.

.4 Fire rating of wall to be maintained, seal all penetrations.

26 06 22 MISCELLANEOUS APPARATUS AND APPLIANCES

1.1 GENERAL

.1 Provide all required electrical devices, components, conduits, fittings, wiring, disconnects, and miscellaneous equipment to make all connections to equipment.

.2 Be familiar with the apparatus being supplied and carefully coordinate and cooperate with the supplier/installer to ensure a proper and complete installation.

26 27 26 WIRING DEVICES

.1 Coverplate to be stainless steel.

END OF SECTION