

Part 1 General

1.1 Related Sections

- .1 Refer to Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .2 Refer to Part D – City of Winnipeg: Supplemental Conditions. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .3 Section 01 45 00 – Quality Control.

1.2 Related Requirements Specified Elsewhere

- .1 Particular requirements for inspection and testing to be carried out by testing laboratory designated by Contract Administrator are specified under various sections.

1.3 Appointment and Payment

- .1 Contract Administrator will appoint and City of Winnipeg will pay for services of testing laboratory except as follows:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
 - .4 Mill tests and certificates of compliance.
 - .5 Tests specified to be carried out by Contractor under the supervision of Contract Administrator.
- .2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Contract Administrator to verify acceptability of corrected work.

1.4 Contractor's Responsibilities

- .1 Provide labour, equipment and facilities to:
 - .1 Provide access to Work for inspection and testing.
 - .2 Facilitate inspections and tests.
 - .3 Make good Work disturbed by inspection and test.
 - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
- .2 Notify Contract Administrator sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.

- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by Contract Administrator.

1.5 Schedule

- .1 Concrete topping
- .2 Roof installation inspection (a minimum of 3 inspections including reports).

END OF SECTION

Part 1 General

1.1 Section Includes

- .1 Shop drawings and product data.
- .2 Samples.
- .3 Certificates and transcripts.

1.2 Related Sections

- .1 Refer Clause “Submissions” (Subsections D7. to and including D15.) of Part D – City of Winnipeg: Supplemental Conditions. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .2 Section 01 45 00 – Quality Control.
- .3 Section 01 79 00 – Training and Demonstration.
- .4 Section 01 78 00– Closeout submittals.
- .5 Mechanical identification.

1.3 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 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to 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.
- .6 Notify Contract Administrator, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-ordinated.

- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Contract Administrator's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator review.
- .10 Keep one reviewed copy of each submission on site.

1.4 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 7 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 Accompany submissions with transmittal letter, in duplicate, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .8 Submissions include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.

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- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
 - .9 After Contract Administrator's review, distribute copies.
 - .10 Submit 8 prints of shop drawings for each requirement requested in specification Sections and as Contract Administrator may reasonably request.
 - .11 Submit 8 copies 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.
 - .12 Submit 4 electronic copies of test reports for requirements requested in specification Sections and as requested by Contract Administrator.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within 3 years of date of contract award for project.
 - .13 Submit 4 electronic copies of certificates for requirements requested in specification Sections and as requested by Contract Administrator.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
 - .14 Submit 4 electronic copies of manufacturers instructions for requirements requested in specification Sections and as requested by Contract Administrator.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
 - .15 Submit 4 electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Contract Administrator.
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- .1 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .16 Submit 8 electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Contract Administrator.
- .17 Delete information not applicable to project.
- .18 Supplement standard information to provide details applicable to project.
- .19 If upon review by Contract Administrator, no errors or omissions are discovered or if only minor corrections are made, transparency 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.

1.5 Samples

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to 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 to Contract Administrator prior to proceeding with Work.
- .6 Make changes in samples that 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.
- .8 Allow 7 days for Contract Administrator's review of samples.

1.6 Mock-ups

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

1.7 Progress Photographs

- .1 Submit progress digital photographs as follows:
 - .1 Photos: good resolution, and under lighting conditions resulting in clearly depicting details of building components and conditions.
 - .2 Sizes: Coloured prints 150 x 100 mm, semi-matt, standard weight.

- .3 Identification: typewritten name and number of project and date of exposure on 15 x 50 mm or as required, white patch in upper right hand corner front side.
- .4 Mount pictures on 216 x 279mm, 30 lb. paper ready for inserting into a 3 ring binder. Provide two copies of each: one for Contract Administrator and one for City of Winnipeg.
- .5 Viewpoints: interior locations: viewpoints determined by Contract Administrator and as followed at key stages during the building period:
 - .1 Firestop conditions
 - .2 Fire damper installations.
 - .3 Fire rating conditions.
- .6 Frequency: monthly with progress statement at completion of excavation, foundation, framing and services before concealment, building envelope prior to drywall and stucco/brick finishes, special conditions or as otherwise directed by Contract Administrator.
- .7 Submit a CD of all digital photos to Contract Administrator before final acceptance of buildings.

END OF SECTION

Part 1 General

1.1 Section Includes

- .1 Health and safety considerations required to ensure that Contractor shows due diligence towards health and safety on construction sites, and meets the requirements of Health and Safety – Construction as indicated below.

1.2 Related Sections

- .1 Refer to Subsection C6. Responsibility of Contractor of Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .2 Refer to Subsection D8. Safe Work Plan of Part D – City of Winnipeg: Supplemental Conditions. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .3 Refer to Subsection D23. Prime Contractor – The Workplace Safety and Health Act (Manitoba) of Part D – City of Winnipeg: Supplemental Conditions. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .4 Section 01 33 00 - Submittal Procedures.
- .5 Section 01 41 00 - Regulatory Requirements.
- .6 Section 02 61 33 - Hazardous Materials: Submission Requirements for WHMIS MSDS.

1.3 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 Workplace Safety and Health Act, R.S.M. [1987].

1.4 Submittals

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 City of Winnipeg Safe Work Plan. Refer to Subsection D8. Safe Work Plan of Part D – City of Winnipeg: Supplemental Conditions.
- .3 Submit site-specific Safe Work Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.

- .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .4 Submit 3 copies of Contractor's authorized representative's work site health and safety inspection reports to Contract Administrator weekly.
- .5 Submit copies of reports or directions issued by Federal and Provincial health and safety inspectors.
- .6 Submit Material Safety Data Sheets (MSDS) to Contract Administrator.
- .7 Submit copies of incident and accident reports to Contract Administrator.
- .8 Contract Administrator will review Contractor's site-specific Safe Work Plan and provide comments to Contractor within 3 days after receipt of plan. Revise plan as appropriate and resubmit plan to Contract Administrator within 3 days after receipt of comments from Contract Administrator.
- .9 Contract Administrator's review of Contractor's final Safe Work Plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .10 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Contract Administrator.
- .11 Provide a Fall Protection Plan for any type of Structure, if required by the authority having jurisdiction, prior to construction of facility.
- .12 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
 - .1 Promptly report all accidents and potential liability claims to the Contract Administrator.

1.5 Filing of Notice

- .1 File Notice of Project with Provincial authorities prior to beginning of Work unless otherwise indicated by Law.

1.6 Safety Assessment

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

1.7 Meetings

- .1 If requested by Contract Administrator, schedule and administer Health and Safety meeting with Contract Administrator prior to commencement of Work.

1.8 Regulatory Requirements

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

1.9 General Requirements

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Contract Administrator may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.10 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.

1.11 Compliance Requirements

- .1 Comply with Occupational Health and Safety Act, General Safety Regulation, Manitoba Regulations.
- .2 Provide Fall Protection Anchoring device(s) as per Department of Labour requirement, Manitoba regulation 189/85, Section 15(1) under the Workplace Safety and Health Act.
- .3 Comply with Occupational Health and Safety Act, Industrial and Commercial Establishments Regulation, R.R.Q.
- .4 Comply with Occupational Health and Safety Regulations, 1996.
- .5 Comply with Occupational Health and Safety Act, General Safety Regulations, O.I.C.
- .6 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.12 Unforeseen Hazards

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

1.13 Health and Safety Co-ordinator

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
 - .1 Have minimum 2 years' site-related working experience specific to activities associated with.
 - .2 Have working knowledge of occupational safety and health regulations.

- .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
- .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
- .5 Be on site during execution of Work and report directly to and be under direction of site supervisor.

1.14 Posting of Documents

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

1.15 Correction of Non-compliance

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Contract Administrator.
- .2 Provide Contract Administrator with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Contract Administrator may stop Work if non-compliance of health and safety regulations is not corrected.

1.16 Blasting

- .1 Blasting or other use of explosives is not permitted without prior receipt of written instruction by Contract Administrator.

1.17 Powder Actuated Devices

- .1 Use powder actuated devices only after receipt of written permission from Contract Administrator.

1.18 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

END OF SECTION

Part 1 General

1.1 Related Sections

- .1 Refer to Subsection C6. Responsibilities of Contractor of Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.

1.2 Definitions

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.3 Submittals

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prior to commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Contract Administrator. Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.
- .3 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .4 Environmental protection plan: include:
 - .1 Name of person responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Name and qualifications of person responsible for manifesting hazardous waste to be removed from site.
 - .3 Name and qualifications of person responsible for training site personnel.
 - .4 Descriptions of environmental protection personnel training program.
 - .5 Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
 - .6 Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plans include measures to minimize amount of mud transported onto paved public roads by vehicles or runoff.

- .7 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features to be preserved within authorized work areas.
- .8 Spill Control Plan: including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
- .9 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .10 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, do not become air borne and travel off project site.
- .11 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- .12 Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.

1.4 Fires

- .1 Fires and burning of rubbish on site is prohibited.

1.5 Disposal of Wastes

- .1 Do not bury rubbish and waste materials on site. Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

1.6 Drainage

- .1 Provide erosion and sediment control plan that identifies type and location of erosion and sediment controls to be provided. Plan: include monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
- .2 Storm Water Pollution Prevention Plan (SWPPP) to be substituted for erosion and sedimentations control plan.
- .3 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .4 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .5 Control disposal or run-off of water containing suspended materials or other harmful substances in accordance with local authority requirements

1.7 Site Clearing and Plant Protection

- .1 Protect trees and plants on site and adjacent properties as indicated by the Contract Administrator at the outset of construction.
- .2 Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Minimize stripping of topsoil and vegetation.
- .5 Restrict tree removal to areas indicated or designated by Contract Administrator.

1.8 Pollution Control

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities' emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.9 Notification

- .1 Contract Administrator will notify Contractor in writing of observed non-compliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan. Contractor: after receipt of such notice, inform Contract Administrator of proposed corrective action and take such action for approval by Contract Administrator.
- .2 Contract Administrator may issue stop order of work until satisfactory corrective action has been taken.
- .3 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

END OF SECTION

Part 1 General

1.1 Related Sections

- .1 Section 02 82 10 – Asbestos Abatement – Minimum Precautions.

1.2 References and Codes

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including amendments up to Bid Opportunity closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Perform Work in accordance with ULC firestop requirements.
- .3 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.

1.3 Hazardous Material Discovery

- .1 Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered during demolition work. Notify Contract Administrator.
- .2 PCB: Polychlorinated Biphenyl: stop work immediately when material resembling Polychlorinated Biphenyl is encountered during demolition work. Notify Contract Administrator.
- .3 Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Contract Administrator.

1.4 Building Smoking Environment

- .1 Comply with smoking restrictions and municipal by-laws.

END OF SECTION

Part 1 General

1.1 Section Includes

- .1 Inspection and testing, administrative and enforcement requirements.
- .2 Tests and mix designs.
- .3 Mill tests.
- .4 Mock ups.
- .5 Equipment and System adjust and balance.

1.2 Related Sections

- .1 Refer to Subsections C11. Inspection and C 13. Warranty of Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .2 Section 01 33 00 – Submittal Procedures.
- .3 Section 01 78 00 – Closeout Submittals.
- .4 Section 01 9113 – General Commissioning (Cx) Requirements.

1.3 Inspection

- .1 Refer to Subsection C11. Inspection of Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .2 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.
- .3 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.
- .4 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.
- .5 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. If such Work is found in accordance with Contract Documents, City of Winnipeg shall pay cost of examination and replacement.

1.4 Independent Inspection Agencies

- .1 Independent Inspection/Testing Agencies will be engaged by Contract Administrator for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by City of Winnipeg.
- .2 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .3 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 Contract Administrator. Contract to pay costs for retesting and re-inspection.

1.5 Access to Work

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.6 Procedures

- .1 Notify appropriate agency and Contract Administrator 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 Contract Administrator it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Contract Administrator 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 2 copies of inspection and test reports to Contract Administrator.
- .2 Provide copies to subcontractor of work being inspected or tested manufacturer or fabricator of material being inspected or tested.

1.9 Tests and Mix Designs

- .1 Furnish test results and mix designs as requested.
- .2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Contract Administrator and may be authorized as recoverable.

1.10 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 or 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 If requested, Contract Administrator will assist in preparing schedule fixing dates for preparation.
- .6 Remove mock-up at conclusion of Work or when acceptable to Contract Administrator.
- .7 Mock-ups may remain as part of Work as approved by Contract Administrator in writing.

1.11 Mill Tests

- .1 Submit mill test certificates as required of specification Sections or as requested by Contract Administrator.

1.12 Equipment and Systems

- .1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.
- .2 Refer to Commissioning Sections for definitive requirements.

END OF SECTION

Part 1 General

1.2 Related Sections

- .1 Section 01 52 00 – Construction Facilities.
- .2 Section 01 56 00 – Temporary Barriers and Enclosures.

1.3 Installation and Removal

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

1.4 Water Supply

- .1 Contract Administrator will provide access continuous supply of potable water for remedial construction use.
- .2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal.
- .3 Contract Administrator will provide and charge for utility at prevailing rates.
- .4 Provide heating and ventilation during construction including attendance, maintenance and fuel 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 Provided ambient temperatures and humidity levels for storage, installation and curing of materials.
 - .5 Provide adequate ventilation to meet health regulations for safe working environment.
- .5 Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted.
- .6 Maintain temperatures of minimum 10 °C in areas where construction is in progress.
- .7 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 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- .8 Permanent building heating system may be used if/when available, upon written approval by Contract Administrator. Be responsible for damage to heating system if use is permitted.
- .9 On completion of Work for replace filters of affected areas of duct work in course of installing new fire dampers.
- .10 Maintain strict supervision of operation of ventilating equipment:
 - .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.
- .11 Be responsible for damage to Work due to failure in protection during construction.

1.5 Temporary Power and Light

- .1 Provide and pay for temporary power during construction for temporary lighting and operating of power tools, to a maximum supply of 230 volts 30 amps.
- .2 Arrange for connection with appropriate utility company. Pay all costs for installation, maintenance and removal.
- .3 Temporary power for electric cranes and other equipment required in excess of above is responsibility of Contractor.
- .4 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors is not less than 162 lx.
- .5 If approved in writing by Contract Administrator, connect to existing power supply in accordance with Canadian Electrical Code and provide meters and switching.
- .6 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of Contract Administrator provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps that have been used for more than 3 months.

1.6 Temporary Communication Facilities

- .1 Provide and pay for temporary telephone, fax, data hook up, lines necessary for own use and use of Contract Administrator.

1.7 Fire Protection

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

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

END OF SECTION

Part 1 General

1.1 Related Sections

- .1 Section 01 51 00 – Temporary Facilities.
- .2 Section 01 56 00 – Temporary Barriers and Enclosures.

1.2 References

- .1 Canadian General Standards Board (CGSB)
 - .1 CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CSA-0121-M1978(R2003), Douglas Fir Plywood.
 - .3 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.
 - .4 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

1.3 Installation and Removal

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Identify areas which have to be gravelled to prevent tracking of mud.
- .3 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.

1.4 Scaffolding

- .1 Scaffolding in accordance with CAN/CSA- S269.2.
- .2 Provide and maintain scaffolding ramps ladders swing staging platforms temporary stairs and as required.

1.5 Hoisting

- .1 Provide, operate and maintain hoists required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.
- .2 Hoists to be operated by qualified operator.

1.6 Site Storage/loading

- .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber existing premises with products.
- .2 Do not load or permit to load any part of existing facility with weight or force that will endanger Work.

1.7 Construction Parking

- .1 If approved by Contract Administrator parking will be permitted on or near site as designated, provided it does not disturb performance of Work and any damage to property is promptly repaired.
- .2 Make parking arrangements with Contract Administrator.
- .3 Provide and maintain adequate access to project site.
- .4 Provide snow removal during period of Work as required.
- .5 If authorized to use existing access routes to project site, maintain such access routes for duration of Contract and make good damage resulting from Contractor's use of roads.

1.8 Security

- .1 Be responsible for security to site and contents of site after working hours and during holidays.

1.9 Offices

- .1 Provide office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.
- .2 Provide marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors to provide their own offices as necessary. Locate offices for easy access in discussion with the occupants and City of Winnipeg of the facility.
- .4 Provide private washroom facilities adjacent to office complete with flush or chemical type toilet, lavatory and mirror and maintain supply of paper towels and toilet tissue.
- .5 Provide office with phone and fax line.
- .6 Maintain office in good and clean condition.
- .7 Project Superintendent shall carry a cellular telephone at all times.

1.10 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.

1.11 Sanitary Facilities

- .1 Must receive approval and make arrangements with Contract Administrator to use existing sanitary facilities.
- .2 If arrangement using existing facilities is not possible, provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .3 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.12 Construction Signage

- .1 Provide and erect, within three weeks of award of contract, a project sign as deemed required in a location designated by Contract Administrator.
 - .1 Construct sign 1.2 x 2.4m, of wood frame and plywood construction painted with exhibit lettering produced by professional sign painter.
 - .2 Signboard to display names and logos for:
 - .1 The City of Winnipeg
 - .2 The Province of Manitoba
 - .3 The General Council of Winnipeg Community Centres
 - .4 The Government of Canada
- .2 No other signs or advertisements, other than warning signs, are permitted on site.
- .3 Locate project identification sign as directed by Contract Administrator and construct as follows:
 - .1 Build framework securely attached to ground level and attach signboard to framing.
 - .2 Paint surfaces of signboard and framing with one coat primer and two coats enamel. Colour white on signboard face, black on other surfaces.
 - .3 Apply vinyl sign face overlay to painted signboard face in accordance with installation instruction supplied.
- .4 Direct requests for approval to erect Contractor signboard to Contract Administrator.
- .5 Signs and notices for safety and instruction in both official languages, Graphic symbols to CAN3-Z321.
- .6 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Contract Administrator.

- .7 Protect travelling public from damage to person and property.
- .8 Construct access ways as necessary.

1.13 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.

END OF SECTION

Part 1 General

1.2 Related Sections

- .1 Section 01 51 00 – Temporary Utilities.
- .2 Section 01 52 00 – Construction Facilities.
- .3 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.3 References

- .1 Canadian General Standards Board (CGSB)
 - .1 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
 - .2 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA-O121-M1978(R2003), Douglas Fir Plywood.

1.4 Installation and Removal

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

1.5 Hoarding

- .1 Provide one lockable truck entrance gate gates and at least one pedestrian door as directed and conforming to applicable traffic restrictions on adjacent streets. Equip gates with locks and keys.
- .2 Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law.
- .3 Maintain public side of enclosure in clean condition.
- .4 Erect temporary site enclosure using new 1.2m high snow fence wired to rolled steel "T" bar fence posts spaced at 2.4m on centre. Provide one lockable truck gate. Maintain fence in good repair.
- .5 Provide barriers around trees and plants to remain in discussion with City of Winnipeg: Graeme Remple. Protect from damage by equipment and construction procedures.

1.6 Guard Rails and Barricades

- .1 Provide as required by governing authorities including Department of Labour, Workplace Health and Safety regulations as a minimum in regards to secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.

1.7 Weather Enclosures

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

1.8 Dust Tight Screens

- .1 Provide dust tight screens or partitions 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.

1.9 Access to Site

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

1.10 Public Traffic Flow

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

1.11 Fire Routes

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

1.12 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.

1.13 Protection of Building Finishes

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

1.14 Waste Management and Disposal

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

END OF SECTION

Part 1 General

1.1 Related Sections

- .1 Refer to Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .2 Section 01 45 00 – Quality Control.

1.2 References

- .1 Within text of each specifications section, reference may be made to reference standards. List of standards reference writing organizations is contained in Section 01 42 00 - References.
- .2 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 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 Cost for such testing will be born by the City of Winnipeg in event of conformance with Contract Documents or by Contractor in event of non-conformance.

1.3 Materials Submitted

- .1 Within 7 days of written request by Contract Administrator, submit following information for materials and equipment proposed for supply:
 - .1 Name and address of manufacturer.
 - .2 Trade name, model and catalogue number.
 - .3 Performance, descriptive and test data.
 - .4 Manufacturer's installation or application instructions.
 - .5 Evidence of arrangements to procure.
- .2 Use products of one manufacturer for material and equipment of same type or classification unless otherwise specified.

1.4 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. Should disputes arise as to quality or fitness of products, decision rests strictly with Contract Administrator based upon requirements of Contract Documents.
- .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.

1.5 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.

1.6 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 and metal panels 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 nameplates.

1.7 Transportation

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Contractor to pay for recycled products supplied by the City of Winnipeg. Unload, handle and store such products.

1.8 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.
- .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.

1.9 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.

1.10 Co-ordination

- .1 Ensure co-operation of workers in the coordination of Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.11 Concealment

- .1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .2 Before installation inform Contract Administrator if there is interference. Install as directed by Contract Administrator.

1.12 Remedial Work

- .1 Refer to Section 01 73 03 - Execution Requirements.
- .2 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.
- .3 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.13 Location of Fixtures

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

1.14 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 that cause spalling or cracking of material to which anchorage is made are not acceptable.

1.15 Fastenings - Equipment

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts.

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

1.16 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.

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

END OF SECTION

Part 1 General

1.1 Section Includes

- .1 Field Engineering survey services to measure and stake site.
- .2 Survey services to establish and confirm inverts for Work.
- .3 Recording of subsurface conditions found.

1.2 Related Sections

- .1 Refer to Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .2 Refer to Part D – City of Winnipeg: Supplemental Conditions. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.

1.3 References

- .1 City of Winnipeg's identification of existing survey control points and property limits.

1.4 Qualifications of Surveyor

- .1 Qualified registered land surveyor, licensed to practise in Place of Work, acceptable to Contract Administrator.

1.5 Survey Reference Points

- .1 Existing base horizontal and vertical control points are designated on drawings.
- .2 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
- .3 Make no changes or relocations without prior written notice to Contract Administrator.
- .4 Report to Contract Administrator when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- .5 Require surveyor to replace control points in accordance with original survey control.

1.6 Survey Requirements

- .1 Establish two permanent bench marks on site, referenced to established bench marks by survey control points. Record locations, with horizontal and vertical data in Project Record Documents.
- .2 Establish lines and levels, locate and lay out, by instrumentation.

- .3 Stake for grading, fill and topsoil placement and landscaping features.
- .4 Stake slopes and berms.
- .5 Establish pipe invert elevations.
- .6 Stake batter boards for foundations.
- .7 Establish foundation column locations and floor elevations.
- .8 Establish lines and levels for mechanical and electrical work.

1.7 Existing Services

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Contract Administrator of findings.
- .2 Remove abandoned service lines within 2m of structures. Cap or otherwise seal lines at cut-off points as directed by Contract Administrator.

1.8 Location of Equipment and Fixtures

- .1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Contract Administrator of impending installation and obtain approval for actual location.
- .4 Submit field drawings to indicate relative position of various services and equipment when required by Contract Administrator.

1.9 Records

- .1 Maintain a complete, accurate log of control and survey work as it progresses.
- .2 On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of Work.
- .3 Record locations of maintained, re-routed and abandoned service lines.

1.10 Submittals

- .1 Submit name and address of Surveyor to Contract Administrator.
- .2 On request of Contract Administrator, submit documentation to verify accuracy of field Engineering work.

- .3 Submit certificate signed by surveyor certifying and noting those elevations and locations of completed Work that conform and do not conform with Contract Documents.
- .4 Provide a surveyor's sealed and stamped drawing indicating building location certificate at project completion.

1.11 Subsurface Conditions

- .1 Promptly notify Contract Administrator in writing if subsurface conditions at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of probable conditions based thereon.
- .2 After prompt investigation, should Contract Administrator determine that conditions do differ materially, instructions will be issued for changes in Work as provided in Changes and Change Orders.

END OF SECTION

Part 1 General

1.1 Related Sections

- .1 Refer to Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .2 Refer to Part D – City of Winnipeg: Supplemental Conditions. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .3 Section 01 33 00 – Submittal Procedures.
- .4 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.2 Submittals

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

1.3 Materials

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

1.4 Preparation

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.
- .3 Beginning of cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

1.5 Execution

- .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Remove samples of installed Work for testing.
- .6 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
- .7 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .8 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- .9 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
- .10 Restore work with new products in accordance with requirements of Contract Documents.
- .11 Fit Work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .12 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material in accordance with Section 07 84 00 - Firestopping, full thickness of the construction element.
- .13 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.

1.6 Waste Management and Disposal

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

END OF SECTION

Part 1 General

1.1 Related Sections

- .1 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .2 Section 01 77 00 – Closeout Procedures.

1.2 Project Cleanliness

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including other than that caused by Contract Administrator or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Contract Administrator. Do not burn waste materials on site.
- .3 Clear snow and ice from access to building, bank/pile snow in designated areas only remove from site as directed by Contract Administrator. Make arrangements 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 Remove waste material and debris from site and deposit in waste container at end of working day.
- .6 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .7 Dispose of waste materials and debris at designated dumping areas on Crown property off site.
- .8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.3 Final Cleaning

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

- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris other than including that caused by City of Winnipeg or other Contractors.
- .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Contract Administrator. Do not burn waste materials on site.
- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors.
- .9 Clean lighting reflectors, lenses, and other lighting surfaces.
- .10 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- .11 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
- .12 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .13 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .14 Remove dirt and other disfiguration from exterior surfaces.
- .15 Clean and sweep roofs, gutters, areaways, and sunken wells.
- .16 Sweep and wash clean paved areas. Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.
- .17 Clean roofs, downspouts, and drainage systems.
- .18 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
- .19 Remove snow and ice from access to building.

1.4 Waste Management and Disposal

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

END OF SECTION

Part 1 General

1.1 Waste Management

- .1 Manage waste to the best standard possible within the limits of the project waste and waste management within the Winnipeg region and in particularly those of the City of Winnipeg.

1.2 Section Includes

- .1 Text, schedules and procedures for systematic Waste Management Program for construction, deconstruction, demolition, and renovation projects, including:
 - .1 Diversion of Materials.
 - .2 Materials Source Separation Program (MSSP).
 - .3 Canadian Governmental Responsibility for the Environment Resources – Schedule E.

1.3 Related Sections

- .1 Section 01 33 00 - Submittal Procedures.

1.4 Definitions

- .1 Materials Source Separation Program (MSSP): Consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
- .2 Recyclable: Ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse by others.
- .3 Recycle: Process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .4 Recycling: Process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .5 Reuse: Repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items including pallets or unused products to vendors.
- .6 Salvage: Removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .7 Separate Condition: Refers to waste sorted into individual types.

- .8 Source Separation: Acts of keeping different types of waste materials separate beginning from first time they became waste.
- .9 Waste Management Coordinator (WMC): Contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.

1.5 Documents

- .1 Maintain at job site, one copy of following documents:
 - .1 Material Source Separation Plan.

1.6 Submittals

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

1.7 Materials Source Separation Program (mssp)

- .1 Prepare MSSP and have ready for use prior to project start-up.
- .2 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Contract Administrator. Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .3 Provide containers to deposit reusable and recyclable materials.
- .4 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .5 Locate separated materials in areas that minimize material damage.
- .6 Collect, handle, store on-site, and transport off-site, salvaged materials in separate condition.
 - .1 Transport to approved and authorized recycling facility to users of material for recycling.
- .7 Collect, handle, store on-site, and transport off-site, salvaged materials in combined condition.
 - .1 Ship materials to site operating under Certificate of Approval premises of Contract Administrator.
 - .2 Materials must be immediately separated into required categories for reuse or recycling.

1.8 Storage, Handling and Protection

- .1 Store, materials to be reused, recycled and salvaged in locations as directed by Contract Administrator.
- .2 Unless specified otherwise, materials for removal do not become Contractor's property.
- .3 Protect, stockpile, store and catalogue salvaged items.

- .4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .5 Protect structural components not removed for demolition from movement or damage.
- .6 Support affected structures. If safety of building is endangered, cease operations and immediately notify Contract Administrator.
- .7 Protect surface drainage, mechanical and electrical from damage and blockage.
- .8 Separate and store materials produced during dismantling of structures in designated areas.
- .9 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
 - .1 On-site source separation is recommended.
 - .2 Remove co-mingled materials to off-site processing facility for separation.

1.9 Disposal of Wastes

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste volatile materials mineral spirits oil paint thinner into waterways, storm, or sanitary sewers.
- .3 Remove materials from deconstruction as deconstruction/disassembly Work progresses.

1.10 Use of Site and Facilities

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Maintain security measures established by existing facility provide temporary security measures approved by Contract Administrator.

1.11 Scheduling

- .1 Coordinate Work with other activities at site to ensure timely and orderly progress of Work.

Part 2 Execution

2.1 Application

- .1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

2.2 Cleaning

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.

- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

2.3 **Diversion of Materials**

- .1 From following list is a recommendation of waste diversion. Separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by Contract Administrator, and consistent with applicable fire regulations.
 - .1 Mark containers or stockpile areas.
 - .2 Provide instruction on disposal practices.
- .2 On-site sale of salvaged recovered reusable recyclable materials is permitted is not permitted.
- .3 Demolition Waste

Material Type	Recommended Diversion %	Actual Diversion %
Acoustic Tile	50	
Acoustical Insulation	100	
Carpet	100	
De-mountable Partitions	80	
Doors and Frames	100	
Electrical Equipment	80	
Furnishings	80	
Marble Base	100	
Mechanical Equipment	100	
Metals	100	
Rubble	100	
Wood (uncontaminated)	100	
Other		

- .4 Construction Waste

Material Type	Recommended Diversion %	Actual Diversion %
Cardboard	100	
Plastic Packaging	100	
Rubble	100	
Steel	100	
Wood (uncontaminated)	100	
Other		

2.4 Canadian Governmental Departments Chief Responsibility for the Environment

.1 Schedule E - Government Chief Responsibility for the Environment

Province	Address	General Inquires	Fax
Manitoba	Manitoba Environment Building 2, 139 Tuxedo Avenue, Winnipeg, MB R3N 0H6	(204) 945-7100	
	The Clean Environment Commission, 284 Reimer Avenue, Box 21420, Steinbach, MB R0A 2T3	(204) 326-2395	(204) 326-2472

END OF SECTION

Part 1 General

1.1 Related Sections

- .1 Refer to Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section
- .2 Section 01 33 00 - Submittal Procedures.
- .3 Section 01 45 00 – Quality Control.
- .4 Section 01 71 00 – Examination and Preparation.
- .5 Section 01 78 00 – Closeout Submittals.
- .6 Section 01 79 00 - Demonstration and Training.
- .7 Section 01 91 13 – General Commissioning (Cx) Requirements.

1.2 Inspection and Declaration

- .1 Notify Contract Administrator in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
 - .1 Request Contract Administrator's Inspection.
- .2 Contract Administrator's Inspection: Contract Administrator and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor to correct Work accordingly.
- .3 Completion: submit written certificate that following have been performed:
 - .1 Work has been completed and inspected for compliance with Contract Documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Equipment and systems have been tested, adjusted and balanced and are fully operational.
 - .4 Certificates required by Fire Chief have been submitted.
 - .5 Operation of systems have been demonstrated to Contract Administrator's personnel.
 - .6 Work is complete and ready for final inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of Work by, Contract Administrator, and Contractor. If Work is deemed incomplete by and Contract Administrator, complete outstanding items and request reinspection.

1.3 Cleaning

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

- .2 Remove waste and surplus materials, rubbish and construction facilities from the site in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

END OF SECTION

Part 1 General

1.1 Sections Included

- .1 As-built, samples, and specifications.
- .2 Equipment and systems.
- .3 Product data, materials and finishes, and related information.
- .4 Operation and maintenance data.
- .5 Spare parts, special tools and maintenance materials.
- .6 Warranties and bonds.
- .7 Final Site Survey certificate.

1.2 Related Sections

- .1 Refer to Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .2 Refer to Part D – City of Winnipeg: Supplemental Conditions. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .3 Section 01 33 00 - Submittal Procedures.
- .4 Section 01 45 00 - Quality Control.
- .5 Section 01 71 00 – Examination and Preparation.
- .6 Section 01 77 00 - Closeout Procedures.
- .7 Section 01 79 00 - Demonstration and Training.
- .8 Section 01 91 13 – General Commissioning Requirements (Cx).
- .9 Divisions Mechanical and Electrical.

1.3 Submittals

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- .3 Copy will be returned after final inspection, with Contract Administrator's comments.

- .4 Revise content of documents as required prior to final submittal.
- .5 Two weeks prior to Substantial Performance of the Work, submit to the Contract Administrator, three final copies of operating and maintenance manuals in English.
- .6 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- .7 If requested, furnish evidence, for type, source and quality of products provided.
- .8 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .9 Pay costs of transportation.

1.4 Format

- .1 Organize data as instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used correlate data into related consistent groupings. Identify contents of each binder on spine.
- .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by systems, process flow, 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 1:100 (or appropriate) scaled drawings.

1.5 Contents - Each Volume

- .1 Table of Contents: provide title of project; Date of submission; names.
 - .1 Date of submission; names.
 - .2 Addresses, and telephone numbers of Contract Administrator and Contractor with name of responsible parties.
 - .3 Schedule of products and systems, indexed to content of volume.
- .2 For each product or system:

- .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .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.
- .6 Training: refer to Section 01 79 00 - Demonstration and Training.

1.6 As-Builts and Samples

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

1.7 Recording Actual Site Conditions

- .1 Record information on set of blue line opaque drawings, and in copy of 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: mark each item to record actual construction, including:
 - .1 Firestop conditions other than those indicated in the contract documents:
 - .1 Show exact location for inclusion into original document for record purposes.
 - .2 Description of firestop conditions:
 - .1 Material passing through firestop barrier.
 - .2 Number and sizes of material/piping penetrating firestop barrier.
 - .3 Dimensions of opening.
 - .2 Changes to the descriptions of firestop conditions as indicated in the documents.
 - .3 Fire damper locations.
 - .4 Fire rating locations.
 - .5 Measured depths of elements of foundation in relation to finish first floor datum.
 - .6 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .7 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .8 Field changes of dimension and detail.
 - .9 Changes made by change orders.
 - .10 Details not on original Contract Drawings.
 - .11 References to related shop drawings and modifications.
 - .5 Specifications: mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
 - .6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

1.8 Final survey

- .1 Contractor is to provide Building Location Certificate at project completion.

1.9 Equipment and Systems

- .1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with Engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
- .3 Include installed colour coded wiring diagrams.

- .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .6 Provide servicing and lubrication schedule, and list of lubricants required.
- .7 Include manufacturer's printed operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.
- .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .14 Include test and balancing reports as specified in Section 01 45 00 - Quality Control and 01 91 13 - General Commissioning (Cx) Requirements.
- .15 Additional requirements: as specified in individual specification sections.

1.10 Materials and Finishes

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

1.11 Spare Parts

- .1 Provide spare parts, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.

- .3 Deliver to site; place and store.
- .4 Receive and catalogue items. Submit inventory listing to Contract Administrator. Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

1.12 Maintenance Materials

- .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to site location as directed; place and store.
- .4 Receive and catalogue items. Submit inventory listing to Contract Administrator. Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

1.13 Special Tools

- .1 Provide special tools, in quantities specified in individual specification section.
- .2 Provide items with tags identifying their associated function and equipment.
- .3 Deliver to site; place and store. Receive and catalogue items. Submit inventory listing to Contract Administrator. Include approved listings in Maintenance Manual.

1.14 Storage, Handling and Protection

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense and to satisfaction of Contract Administrator.

1.15 Warranties and Bonds

- .1 Refer to Subsection C13. Warranty of Part C – City of Winnipeg: General Conditions for Construction. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.

- .2 Refer to Subsection D 25. Warranty of Part D – City of Winnipeg: Supplemental Conditions. NOTE: All information in mentioned document supersedes any conflicting information that may be stated here within this section.
- .3 Develop warranty management plan to contain information relevant to Warranties.
- .4 Submit warranty management plan, 30 days before planned pre-warranty conference, to Contract Administrator for approval.
- .5 Warranty management plan to include required actions and documents to assure that Contract Administrator receives warranties to which it is entitled.
- .6 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .7 Submit, warranty information made available during construction phase, to Contract Administrator for approval prior to each monthly pay estimate.
- .8 Assemble approved information in binder and submit upon acceptance of work. Organize binder as follows:
 - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
 - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
 - .4 Verify that documents are in proper form, contain full information, and are notarized.
 - .5 Co-execute submittals when required.
 - .6 Retain warranties and bonds until time specified for submittal.
- .9 Except for items put into use with Contract Administrator's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .10 Include information contained in warranty management plan as follows:
 - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
 - .2 Listing and status of delivery of Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and commissioned systems such as fire protection, alarm systems, sprinkler systems.
 - .3 Provide list for each warranted equipment, item, feature of construction or system indicating:
 - .1 Name of item.
 - .2 Model and serial numbers.
 - .3 Location where installed.
 - .4 Name and phone numbers of manufacturers or suppliers.

- .5 Names, addresses and telephone numbers of sources of spare parts.
- .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
- .7 Cross-reference to warranty certificates as applicable.
- .8 Starting point and duration of warranty period.
- .9 Summary of maintenance procedures required to continue warranty in force.
- .10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
- .11 Organization, names and phone numbers of persons to call for warranty service.
- .12 Typical response time and repair time expected for various warranted equipment.
- .4 Procedure and status of tagging of equipment covered by extended warranties.
- .5 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
- .11 Respond in a timely manner to oral or written notification of required construction warranty repair work.
- .12 Written verification will follow oral instructions. Failure to respond will be cause for the Contract Administrator to proceed with action against Contractor.

1.16 Pre-warranty Conference

- .1 Meet with Contract Administrator, to develop understanding of requirements of this section. Schedule meeting prior to contract completion, and at time designated by Contract Administrator.
- .2 Contract Administrator will establish communication procedures for:
 - .1 Notification of construction warranty defects.
 - .2 Determine priorities for type of defect.
 - .3 Determine reasonable time for response.
- .3 Provide name, telephone number and address of licensed and bonded company that is authorized to initiate and pursue construction warranty work action.
- .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.17 Warranty Tags

- .1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by Contract Administrator.
- .2 Attach tags with copper wire and spray with waterproof silicone coating.
- .3 Leave date of acceptance until project is accepted for occupancy.

- .4 Indicate following information on tag:
- .1 Type of product/material.
 - .2 Model number.
 - .3 Serial number.
 - .4 Contract number.
 - .5 Warranty period.
 - .6 Inspector's signature.
 - .7 Construction Contractor.

END OF SECTION

Part 1 General

1.2 Related Sections

- .1 Section 01 78 00 - Closeout Submittals
- .2 Section 01 91 13 – General Commissioning (Cx) Requirements.
- .3 Divisions Mechanical and Electrical.

1.3 Description

- .1 Demonstrate scheduled operation and maintenance of equipment and systems to Contract Administrator's personnel two weeks prior to date of substantial completion.
- .2 Contract Administrator will provide list of personnel to receive instructions, and will coordinate their attendance at agreed-upon times.

1.4 Quality Control

- .1 When specified in individual Sections require manufacturer to provide authorized representative to demonstrate operation of equipment and systems, instruct Contract Administrator's personnel, and provide written report that demonstration and instructions have been completed.

1.5 Submittals

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for Contract Administrator's approval. Submit reports within one week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.
- .3 Give time and date of each demonstration, with list of persons present.

1.6 Conditions for Demonstrations

- .1 Equipment has been inspected and put into operation in accordance with Mechanical and Electrical Sections.
- .2 Testing, adjusting, and balancing has been performed in accordance with Section 01 91 13 - General Commissioning (Cx) Requirements and equipment and systems are fully operational.
- .3 Provide 4 copies of completed operation and maintenance manuals for use in demonstrations and instructions.

1.7 Preparation

- .1 Verify that conditions for demonstration and instructions comply with requirements.
- .2 Verify that designated personnel are present.

1.8 Demonstration and Instructions

- .1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at scheduled times, at the equipment location.
- .2 Instruct personnel in phases of operation and maintenance using operation and maintenance manuals as basis of instruction.
- .3 Review contents of manual in detail to explain aspects of operation and maintenance.
- .4 Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instructions.

1.9 Time Allocated For Instructions

- .1 Ensure amount of time required for instruction of each item of equipment or system as follows:
 - .1 Mechanical Drawings - Heating Plant: 2 hours of instruction.
 - .2 Mechanical Drawings - Cooling and Ventilation System: 2 hours of instruction.
 - .3 Mechanical Drawings - Control System: 1 hours of instruction.
 - .4 Mechanical Drawings - Plumbing System: 1 hours of instruction.
 - .5 Section 08 33 13 – Coiling Counter Doors: 0.5hours of instruction.

END OF SECTION

Part 1 General

1.1 Section Includes

- .1 Includes general requirements for commissioning facilities and facility systems.

1.2 Related Sections

- .1 Commissioning Form 103 – Certificate of Satisfactory Process Performance
- .2 Section 01 45 00 - Quality Control.
- .3 Division 23 - Mechanical.
- .4 Division 26 – Electrical

1.3 General

- .1 At the time of Commissioning, the Contract Administrator shall advise the Contractor of the commissioning requirements.
- .2 The Contractor shall refer to all Divisions for details on the commissioning procedures not included in this Section.
- .3 The Contractor shall note that on materials and equipment installed in this Contract, warranty will not begin until after date of Substantial Performance has been determined.

1.4 Quality Assurance

- .1 Co-operate with testing organization services under provisions specified in Section 01 45 00 - Quality Control.
- .2 Testing organization: current member in good standing of AABC certified to perform specified services and to Contract directly with the City of Winnipeg.
- .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.

1.5 References

- .1 Associated Air Balance Council (AABC): National Standards For Field Measurements and Instrumentation, Total Systems Balance, Air Distribution-Hydraulics Systems.

1.6 Submittals

- .1 Prior to start of Work, submit name of organization or Contractor personnel proposed to perform services. Designate who has managerial responsibilities for coordination of entire testing, adjusting and balancing with Testing organization.
- .2 Submit documentation to confirm organization personnel compliance with quality assurance provision. See Section 01 33 00 - Submittal Procedures.
- .3 Submit 3 preliminary specimen copies of each of report forms proposed for use.
- .4 Fifteen days prior to Substantial Performance, submit 3 copies of final reports on applicable forms.
- .5 Submit reports of testing, adjusting, and balancing postponed due to seasonal, climatic, occupancy, or other reasons beyond Contractor's control, promptly after execution of those services.

1.7 Intent

- .1 This Section describes the Contractor's responsibilities in the commissioning and handover of the process, electrical, and other systems to be installed as part of this Work.

1.8 Definitions

- .1 System: for the purpose of this Specification Section, a system shall be defined as the equipment, piping, controls, ancillary devices, electrical power, etc., which together perform a specific function at the facility.
- .2 Commissioning: for the purpose of this Specification Section, commissioning shall be defined as the successful operation of a system in accordance with its design requirements for a period of 28 days, the last 7 of which shall be consecutive, unless otherwise specified.
- .3 Acceptance: for the purpose of this Specification Section, acceptance shall be defined as the formal turnover of a system to the City of Winnipeg for operation and maintenance. This shall occur after the successful end of commissioning of each system through a formal agreement between the Contract Administrator, the City, and the Contractor. Success of the commissioning procedure shall be determined by the Contract Administrator.

1.9 Commissioning Team

- .1 The Work of commissioning will be conducted by the Contractor, the City of Winnipeg, and the Contract Administrator.
- .2 The City of Winnipeg's appointed staff shall represent process and operating staff.
- .3 The Contractor shall provide personnel representing the appropriate trades, including I&C during the commissioning. These shall be skilled workmen, able to expedite any minor repairs, adjustments, etc., as are required to complete commissioning with as few delays as possible.

Part 2 Procedures

2.1 General

- .1 Co-ordinate Work of Trades and Subtrades with testing organization.
- .2 Co-operate with testing organization requests for information.
- .3 Comply with procedural standards of certifying association under whose standard services will be performed.
- .4 Notify Contract Administrator 3 days prior to beginning of operations.
- .5 Accurately record data for each step. Report to Contract Administrator any deficiencies or defects noted during performance of services.

2.2 Commissioning Plan

- .1 Develop a detailed methodology for the commissioning of each system at least 60 calendar days prior to planned start of commissioning. The plan shall be drafted by the Contractor and Contract Administrator and include the following:
 - .1 Detailed schedule of events, including but not limited to the schedule for completion of testing of all component parts of the system in accordance with Section 01 61 00 – Common Product Requirements prior to commissioning of a system.
 - .2 Method for introducing flow, disposing of partially treated effluent, and disposing of any sludge or other residual solids generated during the commissioning process. The Contractor will take responsibility for the implementation of these measures.
 - .3 Sampling and analytical program for tests necessary to verify compliance with performance specifications.
 - .4 Planned attendance schedule for manufacturer's representatives.
 - .5 Contingency plans in the event of a process malfunction.
 - .6 Drawings and sketches as required to illustrate the planned sequence of events.
 - .7 List and details for all temporary equipment (pumps, etc.) required to facilitate Commissioning.
 - .8 List of all personnel who the Contractor plans for commissioning and handover with information indicating their qualifications for this Work.
- .2 The commissioning plan shall be reviewed prior to its implementation. The Contract Administrator shall be the final arbiter.

2.3 Equipment

- .1 All process, mechanical, electrical, control, and miscellaneous equipment related to a system shall be successfully installed and tested in accordance with Section 01 61 00 – Common Product Requirements and any specific requirements noted in other Divisions. Commissioning Form 103 shall be executed for each item.
- .2 As required in Section 01 30 00 – Submittals, O&M Manuals will be submitted to and reviewed by the Contract Administrator.

- .3 Staff training sessions shall be completed.
- .4 Temporary equipment will be installed and tested as necessary to ensure that it functions reliably and consistently through the commissioning period.
- .5 Conduct sampling and analysis in accordance with the requirements of the latest version of "Standard Methods for the Examination of Water and Wastewater" AWWA/WEF.

2.4 Controls

- .1 All controls which are the responsibility of this Contractor shall be installed and tested prior to commissioning.
- .2 The Contract Administrator shall arrange for the simulation of the control sequences or shall allow for the operation of the system without the features included in the Work of others. Every effort shall be made to ensure that the commissioning period provides for the full and comprehensive operation of the equipment under all anticipated normal and adverse operating conditions.

2.5 Final Reports

- .1 Organization having managerial responsibility shall make reports. Ensure each form bears signature of recorder, and that of supervisor of reporting organization. Identify each instrument used, and latest date of calibration of each.

2.6 Contractor Responsibilities

- .1 Prepare each system for testing and balancing.
- .2 Cooperate with testing organization and provide access to equipment and systems.
- .3 Provide personnel and operate systems at designated times, and under conditions required for proper testing, adjusting, and balancing.
- .4 Notify testing organization 7 days prior to time project will be ready for testing, adjusting, and balancing.

Part 3 Execution

3.1 General

- .1 Test equipment, balance distribution systems, and adjust devices for HVAC systems.

3.2 Preparation

- .1 Each item of equipment included in the system to be commissioned shall be satisfactorily tested and Form 103 completed.
- .2 Piping, wiring, and other conduit systems shall be finished and tested.

- .3 Electrical connections shall be completed and inspected to the satisfaction of the governing authorities.
- .4 All other regulatory inspections shall be completed to the satisfaction of the governing authorities.
- .5 Control systems shall be completed and the related control software debugged.

3.3 Sequence

- .1 Systems shall be commissioned in a logical manner. Upstream components shall be commissioned first to the degree possible.
- .2 The Contract Administrator will make operating descriptions available prior to testing draft operating descriptions are included in this Contract.
- .3 Initial operator training shall be undertaken two weeks prior to commissioning.
- .4 Equipment performance tests shall be conducted successfully.
- .5 Start and run system in manual mode.
- .6 Turn separate items of equipment to automatic in a planned and logical manner. Ensure that the control system is operating the equipment in a manner which precludes damage of the equipment and which is consistent with the process operating requirements.
- .7 Commence commissioning period of 28 days. The equipment shall operate continuously and successfully through the last seven days of a commissioning period. Minor failures shall not void the commissioning period. A minor failure is defined as one which does not present a safety hazard, does not impact overall process functioning and can be temporarily overcome by the use of available standby equipment. The last seven days of the commissioning period shall be re-started if a critical failure occurs. A critical failure shall be deemed as one, which prohibits the process from functioning successfully for an eight hour period or one, which creates a safety hazard.
- .8 Upon completing the commissioning period, the system shall be granted formal acceptance by the Contract Administrator.

3.4 Commissioning

- .1 Water will be introduced to the system in a manner which precludes the damage of any equipment or structures.
- .2 Twice during the commissioning period, plant component settings will be modified to ensure that the system is subjected to flows and loads as close to design conditions as possible. Where necessary to achieve this, flows to the area being commissioned will be augmented to exaggerate the naturally occurring flows and loads. Where it is necessary to modify settings outside the limits of this Contract area within the plant, coordinate the changes with plant staff.
- .3 Assist in the operation of the plant to achieve the process objectives.

- .4 All components and systems shall be operated in the automatic/manual and the remote/local modes as required to prove proper operation.
- .5 Ensure all bypasses and backup provisions function satisfactorily.
- .6 All minor and major alarm conditions will be induced to ensure that the process reacts as intended, the applicable alarms are annunciated.
- .7 Samples of process flows, when necessary to prove performance, will be obtained and analyzed on a regular basis.

3.5 Acceptance

- .1 The commissioning of a system shall be considered acceptable when the process has operated in a stable manner, satisfying the design criteria for a period of 28 days, the last 7 of which shall be continuous and consecutive, unless otherwise specified.
- .2 When a process system has been commissioned satisfactorily, the process system shall be formally accepted for operation and routine maintenance by the City's forces. On successful completion of commissioning Form 103 – Certificate of Satisfactory Process Performance attached to this Specification will be signed by the representative of the manufacturer, Contractor, Contract Administrator, and the City.
- .3 An acceptance meeting must be held at the end of the 28 day test to confirm the status of each system.
- .4 Notice of Acceptance for the entire project will be granted when all systems have been commissioned and accepted, and all requirements of the General Conditions have been completed.

3.6 Schedule of Systems Requiring Testing, Adjusting, and Balancing Services

- .1 Refer to Divisions:
 - .1 Plumbing 22.
 - .2 Mechanical 23.
 - .3 Electrical 26.
 - .4 Communications 27.
 - .5 Electronic Safety and Security 28.

END OF SECTION