

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1            NOT USED.

**1.2                WORK COVERED BY CONTRACT DOCUMENTS**

- .1            Work of this Contract involves the replacement of an existing sewage pump/pit and the installation of a new storm drainage sump pit/pumps in the basement of the Administration Building at Stony Mountain Institution in Stony Mountain, MB.

- .2            **Perform work in accordance with CSC Stony Mountain Institution Technical Requirements and Institutional Requirements for Contractors.** Perform all work indicated in the drawings including work for the following two sub-projects:

- .1            Sewage Pit/Pump Replacement**

- .1            Perform work in two stages to minimize downtime of control center washroom. Keep existing sewage pump in service during Stage 1. Only proceed to Stage 2 once new pumps are installed, complete with electrical and controls wiring.

- .2            Stage 1:

- .1            Saw cut concrete and excavate hole. Remove and dispose of cut concrete. Install new pit in hole.
      - .2            Core holes for discharge, vent and inlet pipes through sidewall of existing pit. Coordinate hole locations with new pit assembly and ensure holes are above high liquid level in existing pit.
      - .3            Install sewage pumps in new pit including duplex pump float assembly and guide rails.
      - .4            Install new duplex pump controller and new electrical power supply.
      - .5            Install discharge piping from new sewage pumps through wall of new pit and into existing pit through cored hole.
      - .6            Connect vent and inlet pipes to new pit and install through wall of existing pit. Route vent and discharge pipes up to the ceiling through open top of existing pit. Locate pipes to allow removal of existing sewage pumps.

- .3            Stage 2:

- .1            Remove and dispose of existing sewage pump and existing vent & discharge pipes as shown on drawings.
      - .2            Connect existing inlet pipe to new inlet pipe.
      - .3            Install floor drain inline inlet piping in existing pit.
      - .4            Connect new vent and discharge pipes into existing systems at ceiling height.
      - .5            Commission new pumps prior to backfilling around new pit.

- .6 Backfill with sand around installed sewage pit. Install rebar and pour concrete flush with floor surface around new pit.
- .7 Fill existing pit with sand and top with rebar reinforced concrete, flush with existing floor.

## **.2 Drainage Pump Installation**

- .1 Cut concrete and excavate hole for pit. Remove and dispose of cut concrete. Install new pit in hole.
  - .2 Install drainage pumps including duplex pump float assembly and guide rails.
  - .3 Install new duplex pump controller and new electrical power supply.
  - .4 Install discharge piping from pumps up through steel grate cover and across floor
  - .5 Route discharge piping through hallway and connect to existing cast iron storm drain pipe with tapping saddle.
  - .6 Backfill with sand around installed sewage pit. Install rebar and pour concrete flush with existing floor.
- .3 Work includes demolition of all existing systems that are to be replaced in the above work. Any areas damaged during the demolition and renovation of the facility (cut-outs, patching, holes, etc.) must be repaired to its original state.
- .4 Any penetrations made throughout the work, must be properly covered and sealed. Any penetrations through existing fire rated walls or ceilings must be fire stopped.
- .5 Remove all waste material off site and dispose of the waste according to Section 01 74 21 and in compliance with the Rural Municipality regulations.
- .6 All work on site must be under supervision of SMI escorts.
- .7 Work also includes start-up, commissioning, and training of all new systems installed.
- .8 All materials and workmanship must be as per stamped plans and specifications within.

## **1.3 CONTRACT METHOD**

- .1 Construct Work in accordance with PWGSC contract.

## **1.4 WORK SEQUENCE**

- .1 Perform work in stages as indicated on the drawings, and schedule in consultation with CSC and as approved by the Departmental Representative.

## **1.5 CONTRACTOR USE OF PREMISES**

- .1 Limit use of premises for work to accommodate the continued use of the building as a secure maximum detention facility.
- .2 Co-ordinate use of premises under direction of Departmental Representative
- .3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

- .4 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .5 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Departmental Representative
- .6 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

#### **1.6 OWNER OCCUPANCY**

- .1 Owner will occupy premises during entire construction period for execution of normal operations. Work is contained within the mechanical/electrical spaces in the basement of the Administration Building, which are not accessible to inmates.
- .2 Co-operate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage, specifically downtime of washroom in control centre.

#### **1.7 ALTERATIONS, ADDITIONS, OR REPAIRS TO EXISTING BUILDING**

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

#### **1.8 EXISTING SERVICES**

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where work involves breaking into or connecting to existing services, give Departmental Representative 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions.
- .3 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .4 Provide temporary services when directed by Departmental Representative to maintain critical building and systems.
- .5 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .6 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .7 Record locations of maintained, re-routed and abandoned service lines.

#### **1.9 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy each document as follows:
  - .1 Contract Drawings.
  - .2 Specifications.

- .3 Addenda.
- .4 Reviewed Shop Drawings.
- .5 List of Outstanding Shop Drawings.
- .6 Change Orders.
- .7 Other Modifications to Contract.
- .8 Field Test Reports.
- .9 Copy of Approved Work Schedule.
- .10 Health and Safety Plan and Other Safety Related Documents.
- .11 Other documents as specified.

**Part 2 Products**

- 2.1 In accordance with specifications provided in each section.

**Part 3 Execution**

- 3.1 NOT USED

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            NOT USED.

**1.2                ESTABLISHMENT OF REQUIREMENTS**

- .1            Prior to commencing work, the Contractor shall meet with the Warden or his designate to discuss the nature and extent of all activities involved, and to establish mutually acceptable requirements to ensure that both the project and institution operation may proceed without undue disruption or hindrance except where unavoidable.

**1.3                ACCESS AND EGRESS**

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

**1.4                USE OF SITE AND FACILITIES**

- .1            Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2            Maintain existing services to building and provide for personnel and vehicle access.
- .3            Where security is reduced by work provide temporary means to maintain security. Temporary security must be specified to be reviewed and approved by CSC.
- .4            The Contractor shall provide temporary sanitary facilities for use by Contractor's personnel. Location of the sanitary facilities will be reviewed and approved by the Departmental Representative at the start-up meeting.
- .5            Closures: protect work temporarily until permanent enclosures are completed.

**1.5                ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING**

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

**1.6                EXISTING SERVICES**

- .1            Notify, Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2            Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum.

**1.7                SPECIAL REQUIREMENTS**

- .1            Perform Work in accordance with CSC Stony Mountain Institution Technical Requirements and Institutional Requirements for Contractors

- .2 Construction Escort
  - .1 Departmental Representative will provide construction escort as required
  - .2 Notify Departmental Representative 48 hours in advance
- .3 Carry out Work Monday to Friday from 8:00 to 16:00 hours
- .4 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.

## **1.8 SECURITY**

- .1 The names of all construction personnel to be employed on the site shall be submitted in writing via SMI form #85 (Security Clearance Request) which may be obtained from Security Intelligence Officer (SIO), Correctional Supervisor In Charge of Construction and/or Public Works Supervisor.
- .2 All contractors and their employees, including subcontractors and their employees, involved in the contract, must report to the SIO or CS I/C of Construction prior to the first day of employment for the purpose of obtaining a "pass" (photo identification card) and receiving a security briefing. This will only be done after a Security Clearance Request form is completed and approved by the Warden.
- .3 Warden or designate may require close-up facial photographs to be taken of construction personnel, and may have such photographs displayed at appropriate locations in the institution for identification purposes.
- .4 When the contractors and employees are required to work on the prison property, they will enter and exit the premises via the Service Entrance (Sally Port) if authorized by the CSIIC Construction or designated due to job requirements.
- .5 Warden or designate has the right to refuse permission to enter institutional property to any person whom he has reason to believe may be a security risk.

## **1.9 BUILDING SMOKING ENVIRONMENT**

- .1 Comply with smoking restrictions. Smoking is not permitted.

## **1.10 WORKING CONDITIONS**

- .1 Subject to Institutional Security requirements, the Warden or designate shall permit the contractor as much freedom of action and movement as is reasonably possible and the contractor in turn shall be expected to cooperate with institutional personnel in ensuring that security requirements are observed by construction workers.

## **1.11 OBSERVATION AND INSPECTION**

- .1 Construction activity and all related movement of personnel and vehicles shall be subject to observation and inspection by institutional staff to ensure that security requirements are met.

## **1.12 PARKING**

- .1 The Warden or designate shall assign the area to be used by the construction personnel

- .2 All unattended vehicles must have windows closed, with doors locked, and keys removed
- .3 Vehicles must not contain any type of weapons or ammunition

#### **1.13 SHIPPING AND ACCESS TO THE SITE**

- .1 Contractor shall verify with the Warden or designate the hours during which vehicles will be allowed to enter or leave the institution. Normal construction Work hours on site are 7:30 to 16:30
- .2 Contractor shall have all project material and equipment addressed in his/her name
- .3 The Warden or designate may prohibit or restrict access to any part of the institution
- .4 Private vehicles will not be allowed within the institution's security wall or fence without special permission
- .5 Trucks delivering materials, equipment, and tools to the job will be allowed when the contents are certified at gate entrance. All vehicles are subject to search.

#### **1.14 TOOLS AND EQUIPMENT**

- .1 The contractor shall maintain inventory of all tools and equipment. A copy of these tools and equipment shall be left with the officer
- .2 Contractor shall keep all tools and equipment under constant supervision and not leave them unattended.
- .3 Contractor shall store tools and equipment in places approved by Warden or designate

#### **1.15 TELEPHONES AND INSTALLATIONS**

- .1 Cell phones are NOT allowed inside the security wall or fence.

#### **1.16 ALCOHOL AND NARCOTICS**

- .1 Stony Mountain Institution has a Zero tolerance for alcohol beverages and narcotics on site. These items are not permitted on institutional property. Discovery of such items on site, and identification of the person or persons responsible for them, shall be reported immediately to the Warden or his designate. Any persons employed in the project that appear to be intoxicated or under the influence of any drug or narcotic, or who behaves in an unusual manner, shall be subject to immediate removal from institutional property.

#### **1.17 CONTROL OF CONTRABAND – GENERAL**

- .1 Contractor is responsible for ensuring that all persons employed directly or indirectly upon the project are familiar with Correctional and Conditional Release Act section 45 Summary Convictions as follows;
  - .1 CCRA Summary Conviction Offences 45. Every person commits a summary conviction offence who;
    - .1 is in possession of contraband beyond the visitor control point in a penitentiary;

- .2 is in possession of anything referred to in paragraph (b) or (c) of the definition "contraband" in section 2 before the visitor control point at a penitentiary;
- .3 delivers contraband to, or receives contraband from, an inmate;
- .4 without prior authorization, delivers jewellery to, or receives jewellery from, an inmate; or
- .5 Trespasses at a penitentiary.

**1.18 SEARCHES**

- .1 Where the Warden or his designate suspects, on reasonable grounds, that an employee of the contractor is in possession of contraband, he may order that person to be searched, under, Correctional Conditional Release Regulations Section 42.1 Contraband, Sections 43-46, 54.1-2, 55.1 Search and Seizure and Section 57 Seizure, Commissioner's Directives 566-8 section 9-16 “.

**1.19 SMOKING**

- .1 Comply with smoking and vaping restrictions. Smoking and vaping are not permitted.

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                PRECONSTRUCTION MEETING**

- .1        Within 15 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2        Departmental Representative, Contractor, major Subcontractors, will be in attendance.
- .3        Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
- .4        Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.

**1.2                PROGRESS MEETINGS**

- .1        Attend project meetings throughout the progress of the work at the call of Departmental Representative. Meetings are expected to be called every 2 weeks.
- .2        Consultant shall prepare agenda and record minutes for construction meetings.
- .3        Representative of Contractor attending meetings will be qualified and authorized to act on behalf of party each represents.

**Part 2            Products**

**2.1                NOT USED**

**Part 3            Execution**

**3.1                NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            NOT USED.

**1.2                DEFINITIONS**

- .1            Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2            Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3            Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4            Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5            Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6            Master Plan: summary-level schedule that identifies major activities and key milestones.
- .7            Milestone: significant event in project, usually completion of major deliverable.
- .8            Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.

**1.3                REQUIREMENTS**

- .1            Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2            Plan to complete Work in accordance with prescribed milestones and time frame.
- .3            Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.
- .4            Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

#### **1.4 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative within 10 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

#### **1.5 PROJECT MILESTONES**

- .1 Project milestones form interim targets for Project Schedule.
  - .1 Initial site visit and inspection of existing conditions;
  - .2 Shop drawings, work plan, and pre-construction submissions;
  - .3 Site mobilization;
  - .4 Demolition (staged);
  - .5 Work (staged);
  - .6 Commissioning and testing;
  - .7 Final inspections (Consultant, AHJ, and Departmental Representative)
  - .8 Deficiencies;
  - .9 Training;
  - .10 Final certification;

#### **1.6 MASTER PLAN**

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 Departmental Representative will review and return revised schedules within 5 working days.
- .3 Revise impractical schedule and resubmit within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

#### **1.7 PROJECT SCHEDULE**

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
  - .1 Award.
  - .2 Shop Drawings, Samples.
  - .3 Permits.
  - .4 Mobilization.
  - .5 Excavation.
  - .6 Backfill.

- .7 Slab on grade.
- .8 Plumbing.
- .9 Electrical.
- .10 Piping.
- .11 Controls.
- .12 Testing and Commissioning.
- .13 Supplied equipment long delivery items.
- .14 Engineer supplied equipment required dates.

**1.8 PROJECT SCHEDULE REPORTING**

- .1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

**1.9 PROJECT MEETINGS**

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

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            NOT USED.

**1.2                REFERENCES**

- .1            NOT USED.

**1.3                ADMINISTRATIVE**

- .1            Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2            Do not proceed with Work affected by submittal until review is complete.
- .3            Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4            Where items or information is not produced in SI Metric units converted values are acceptable.
- .5            Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and 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 Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7            Verify field measurements and affected adjacent Work are co-ordinated.
- .8            Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9            Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10           Keep one reviewed copy of each submission on site.

**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 drawings stamped and signed by Contractor to Departmental Representative for review and approval.
- .3            The Departmental Representative will review and return the shop drawing and/or product data within 10 working days.

- .4 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.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
- .8 Submissions include:
  - .1 Date and revision dates.
  - .2 Project title and number.
  - .3 Name and address of:
    - .1 Subcontractor.
    - .2 Supplier.
    - .3 Manufacturer.
  - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .2 Capacities.
    - .3 Performance characteristics.
    - .4 Standards.
    - .5 Operating weight.
    - .6 Wiring diagrams.
    - .7 Single line and schematic diagrams.
    - .8 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.

- .10 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .11 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
  - .2 Testing must have been within 3 years of date of contract award for project.
- .13 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative
  - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit electronic copies of manufacturer's instructions for requirements requested in specification Sections and as requested by Departmental Representative
  - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative
- .16 Delete information not applicable to project.
- .17 Supplement standard information to provide details applicable to project.
- .18 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .19 The review of shop drawings by Public Works and Government Services Canada (PSPC) is for sole purpose of ascertaining conformance with general concept.
  - .1 This review shall not mean that PSPC approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
  - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that

pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

**1.5 CERTIFICATES AND TRANSCRIPTS**

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            NOT USED.

**1.2                REFERENCES**

- .1            Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2            Province of Manitoba
  - .1            The Workplace Safety & Health Act- Updated 2015
  - .2            The Workers Compensation Act RSM 1987 - Updated 2016

**1.3                ACTION AND INFORMATIONAL SUBMITTALS**

- .1            Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2            Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
  - .1            Results of site specific safety hazard assessment.
  - .2            Results of safety and health risk or hazard analysis for site tasks and operation
- .3            Submit 3 copies of Contractor's authorized representative's work site health and safety inspection reports to authority having jurisdiction, weekly Departmental Representative
- .4            Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5            Submit copies of incident and accident reports.
- .6            Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 7 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 3 days after receipt of comments from Departmental Representative
- .7            Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .8            On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

**1.4                FILING OF NOTICE**

- .1            File Notice of Project with Provincial authorities prior to beginning of Work.
- .2            Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

**1.5                SAFETY ASSESSMENT**

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

**1.6 MEETINGS**

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

**1.7 REGULATORY REQUIREMENTS**

- .1 Work shall be completed in compliance with all applicable health and safety code and standards, including but not limited to those listed above in 1.2 and below in 1.11.

**1.8 PROJECT/SITE CONDITIONS**

- .1 Work at site will involve contact with:
  - .1 Operating equipment and mechanical and electrical service spaces
  - .2 Limited access in and out of the mechanical and electrical room while installing new sump pit (PIT-1).

**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 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.
- .3 Contractor must be COR certified.

**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 Reg.2013
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

**1.12 UNFORSEEN HAZARDS**

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Manitoba having jurisdiction and advise Departmental Representative verbally and in writing.
- .2 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, advise Health and Safety co-ordinator and follow procedures in

accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative 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:
  - Have site-related working experience specific to activities associated with the work & working knowledge of occupational safety and health regulations.
  - .1 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.
  - .2 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

**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 Departmental Representative

**1.15 CORRECTION OF NON-COMPLIANCE**

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

**1.16 WORK STOPPAGE**

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

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                SUMMARY**

- .1 For Federal Government Projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this document.

**1.2                RELATED REQUIREMENTS**

- .1 Work shall be conducted in accordance with the codes and standards listed in the technical specifications of this document.

**1.3                REFERENCES TO REGULATORY REQUIREMENT**

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

**1.4                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 Departmental Representative.
- .2 Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Departmental Representative.

**1.5                BUILDING SMOKING ENVIRONMENT**

- .1 Smoking and vaping are not permitted.

**1.6                NATIONAL PARKS ACT**

- .1 NOT USED.

**1.7                QUALITY ASSURANCE**

- .1 Regulatory Requirements: Except as otherwise specified, Constructor shall apply for, obtain, and pay all fees associated with, permits, licenses, certificates, and approvals required by regulatory requirements and Contract Documents, based on General Conditions of Contract and the following:
  - .1 Regulatory requirements and fees in force on date of Bid submission, and
  - .2 Any change in regulatory requirements or fees scheduled to become effective after date of tender submission and of which public notice has been given before date of tender submission

**Part 2            Products**

**2.1                NOT USED**

**2.2                EASEMENTS AND NOTICES**

.1                NOT USED.

**2.3                PERMITS**

.1                NOT USED.

**Part 3            Execution**

**3.1                NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1        NOT USED.

**1.2                REFERENCE STANDARDS**

- .1        NOT USED.

**1.3                INSPECTION**

- .1        Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2        Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3        If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4        Departmental Representative 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, Departmental Representative shall pay cost of examination and replacement.

**1.4                INDEPENDENT INSPECTION AGENCIES**

- .1        Independent Inspection/Testing Agencies may be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative
- .2        Provide equipment required for executing inspection and testing by appointed agencies.
- .3        Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4        If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and reinspection.
- .5        Notwithstanding any additional testing the Departmental Representative may undertake, the contractor is responsible to perform all required quality control testing as indicated in the plans and specifications and as required by all applicable codes

**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 Departmental Representative 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 Departmental Representative 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 Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative

## **1.8 REPORTS**

- .1 Submit electronic copies of inspection and test reports to Departmental Representative.

## **1.9 TESTS AND MIX DESIGNS**

- .1 NOT USED.

## **1.10 MOCK-UPS**

- .1 NOT USED.

## **1.11 MILL TESTS**

- .1 NOT USED.

## **1.12 EQUIPMENT AND SYSTEMS**

- .1 NOT USED.

**Part 2            Products**

**2.1                NOT USED**

**Part 3            Execution**

**3.1                NOT USED**

**END OF SECTION**

- Part 1            General**
- 1.1                RELATED REQUIREMENTS**
- .1            NOT USED.
- 1.2                REFERENCE STANDARDS**
- .1            NOT USED.
- 1.3                ACTION AND INFORMATIONAL SUBMITTALS**
- .1            Provide submittals in accordance with Section 01 33 00 - Submittal Procedures
- 1.4                INSTALLATION AND REMOVAL**
- .1            Prepare site plan indicating proposed location and dimensions of areas in basement to be roped-off and used by Contractor.
- .2            Remove from site all such work after use.
- 1.5                SCAFFOLDING**
- .1            NOT USED.
- 1.6                HOISTING**
- .1            NOT USED.
- 1.7                ELEVATORS**
- .1            NOT USED.
- 1.8                SITE STORAGE/LOADING**
- .1            Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2            Do not load or permit to load any part of Work with weight or force that will endanger Work.
- 1.9                CONSTRUCTION PARKING**
- .1            Parking will be permitted on site.
- .2            Provide and maintain adequate access to project area within basement.
- 1.10              SECURITY**
- .1            Escorts will be required for the duration of Work on site. CSC will provide security escort(s). Coordinate with SMI Construction Office prior to start of work.

**1.11 OFFICES**

- .1 NOT USED.

**1.12 EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1 All equipment and tools shall be removed from site daily.
- .2 Material storage shall not be allowed on-site unless approved otherwise. Provide requests for on-site material storage to Departmental Representative for review prior to start of construction.

**1.13 SANITARY FACILITIES**

- .1 The Contractor shall provide temporary sanitary facilities for use by Contractor's personnel. Location of the sanitary facilities will be reviewed and approved by the Departmental Representative at the start-up meeting.

**1.14 CONSTRUCTION SIGNAGE**

- .1 Provide barriers and signage, as necessary, to protect building occupants from ongoing construction work and hazards.

**1.15 CLEAN-UP**

- .1 Waste Management in accordance with Section 01 74 21.

**1.16 UTILITIES**

- .1 Contractor may use existing site power. Contractor is responsible for setup of any required temporary service panels
- .2 Contractor may utilize existing site water supply.

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            NOT USED.

**1.2                REFERENCE STANDARDS**

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

**1.3                QUALITY**

- .1            Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2            Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.
- .3            Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4            Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .5            Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .6            Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

**1.4                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 Departmental Representative 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 Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

**1.5 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 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.
- .7 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .8 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

**1.6 TRANSPORTATION**

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

**1.7 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 Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative will establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

**1.8 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 Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative 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 Departmental Representative, whose decision is final.

**1.9 CO-ORDINATION**

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

**1.10 CONCEALMENT**

- .1 NOT USED.

**1.11 REMEDIAL WORK**

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

**1.12 LOCATION OF FIXTURES**

- .1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
- .2 Inform Departmental Representative of conflicting installation. Install as directed.

**1.13 FASTENINGS**

- .1 NOT USED.

**1.14 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.

**1.15 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 Departmental Representative.

**1.16 EXISTING UTILITIES**

- .1 When breaking into or connecting to existing services or utilities, execute Work at times approved by CSC and Departmental Representative.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

**Part 2            Products**

**2.1                NOT USED**

**Part 3            Execution**

**3.1                NOT USED**

**END OF SECTION**

- Part 1            General**
- 1.1                RELATED REQUIREMENTS**
- .1        NOT USED
- 1.2                REFERENCE STANDARDS**
- .1        NOT USED
- 1.3                QUALIFICATIONS OF SURVEYOR**
- .1        NOT USED.
- 1.4                SURVEY REFERENCE POINTS**
- .1        NOT USED.
- 1.5                SURVEY REQUIREMENTS**
- .1        NOT USED
- 1.6                EXISTING SERVICES**
- .1        NOT USED.
- 1.7                LOCATION OF EQUIPMENT AND FIXTURES**
- .1        Location of existing equipment, fixtures and outlets indicated or specified are to be considered as approximate. Contractor shall verify on site.
- .2        Install 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 Departmental Representative of impending installation and obtain approval for actual location, if actual location varies from the location specified.
- 1.8                RECORDS**
- .1        Maintain a complete, accurate log of work as it progresses.
- 1.9                ACTION AND INFORMATIONAL SUBMITTALS**
- .1        NOT USED.
- 1.10              SUBSURFACE CONDITIONS**
- .1        Promptly notify Consultant 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 Consultant determine that conditions do differ materially, instructions will be issued for changes in Work as provided in Changes and Change Orders.

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

**Part 1      General**

**1.1          NOT USED**

**1.2          ACTION AND INFORMATIONAL SUBMITTALS**

- .1      Submittals: in accordance with Section 01 33 00 - Submittal Procedures and submittal requirements provided in each section.

**1.3          MATERIALS**

- .1      As specified on drawings and in NMS sections.
- .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.
- .5      Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

**1.5          EXECUTION**

- .1      Execute cutting, fitting, and patching to complete Work.
- .2      Fit several parts together, to integrate with other Work.
- .3      Uncover Work to install ill-timed Work.
- .4      Remove and replace defective and non-conforming Work.
- .5      Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
- .6      Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .7      Restore work with new products in accordance with requirements of Contract Documents.
- .8      Fit Work tight and sealed to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .9      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 In accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            NOT USED.

**1.2                REFERENCE STANDARDS**

- .1            NOT USED.

**1.3                PROJECT CLEANLINESS**

- .1            Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or tenants.
- .2            Remove waste materials from site daily. Do not burn waste materials on site.
- .3            Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4            Dispose of waste materials and debris off site.
- .5            Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .6            Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .7            Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .8            Schedule cleaning operations so that resulting dust, debris and other contaminants will not contaminate building systems.

**1.4                FINAL CLEANING**

- .1            When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2            Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3            Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4            Remove waste products and debris other than that caused by Owner or tenants.
- .5            Remove all waste materials from site when construction is complete.
- .6            Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7            Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

**1.5 WASTE MANAGEMENT AND DISPOSAL**

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

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                WASTE MANAGEMENT GOALS**

- .1        Minimize amount of non-hazardous solid waste generated by project and accomplish maximum source reduction, reuse and recycling of solid waste where practical.
- .2        Protect environment and prevent environmental pollution damage.

**1.2                RELATED REQUIREMENTS**

- .1        NOT USED

**1.3                REFERENCE STANDARDS**

- .1        NOT USED

**1.4                DEFINITIONS**

- .1        Approved/Authorized recycling facility: waste recycler approved by applicable provincial authority.
- .2        Inert Fill: inert waste - exclusively asphalt and concrete.
- .3        Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
- .4        Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .5        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.
- .6        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.
- .7        Separate Condition: refers to waste sorted into individual types.
- .8        Source Separation: act of keeping different types of waste materials separate beginning from the point they became waste.

**1.5                DOCUMENTS**

- .1        NOT USED

**1.6                ACTION AND INFORMATIONAL SUBMITTALS**

- .1        NOT USED

**1.7 WASTE AUDIT (WA)**

.1 NOT USED

**1.8 WASTE REDUCTION WORKPLAN (WRW)**

.1 NOT USED

**1.9 COST/REVENUE ANALYSIS WORKPLAN (CRAW)**

.1 NOT USED

**1.10 WASTE SOURCE SEPARATION PROGRAM (WSSP)**

.1 NOT USED

**1.11 USE OF SITE AND FACILITIES**

- .1 Execute Work with minimal interference and disturbance to normal use of premises.
- .2 Maintain security measures established by facility provide temporary security measures approved by Departmental Representative.

**1.12 WASTE PROCESSING SITES**

- .1 Contractor is responsible to research and locate waste diversion resources and service providers. Salvaged materials are to be transported off site to approved and/or authorized recycling facilities or to users of material for recycling.

**1.13 QUALITY ASSURANCE**

.1 NOT USED

**1.14 STORAGE, HANDLING AND PROTECTION**

- .1 Store, materials to be recycled on site, in a location approved by the Departmental Representative, until project completion.
- .2 Unless specified otherwise, materials for removal become Contractor's property.
- .3 Protect structural components not removed from movement or damage.
- .4 Support affected structures. If safety of building is endangered, cease operations and immediately notify Departmental Representative
- .5 Protect surface drainage, mechanical and electrical from damage and blockage.
- .6 Provide on-site facilities and containers for collection and storage of recyclable materials.
- .7 Separate and store materials produced during project in designated areas.
- .8 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated processing facilities.
  - .1 On-site source separation is recommended.
  - .2 Remove co-mingled materials to off site processing facility for separation.

**1.15 DISPOSAL OF WASTES**

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste into waterways
- .3 Remove materials on-site as Work progresses.

**1.16 SCHEDULING**

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

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 APPLICATION**

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

**3.2 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning

**3.3 DIVERSION OF MATERIALS**

- .1 Separate materials that can be recycled from general waste in separate piles or containers.
- .2 Remove recyclable materials from site and deliver to a municipal recycling facility.
- .3 Sale of recyclable material is not permitted

**3.4 WASTE DIVERSION REPORT**

- .1 NOT USED

**3.5 WASTE AUDIT (WA)**

- .1 NOT USED

**3.6 WASTE REDUCTION WORKPLAN (WRW)**

- .1 NOT USED.

**3.7 COST/REVENUE ANALYSIS WORKPLAN (CRAW)**

.1 NOT USED

**3.8 CANADIAN GOVERNMENTAL DEPARTMENTS CHIEF RESPONSIBILITY FOR THE ENVIRONMENT**

.1 Schedule G - 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 Steinback MB R0A 2T3	204-326-2395	204-326-2472

**3.9 SCHEDULES**

.1 NOT USED

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            NOT USED.

**1.2                REFERENCE STANDARDS**

- .1            NOT USED.

**1.3                ADMINISTRATIVE REQUIREMENTS**

- .1            Acceptance of Work Procedures:
  - .1            Contractor's Inspection: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
    - .1            Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
    - .2            Request Departmental Representative's inspection.
  - .2            Departmental Representative Inspection:
    - .1            Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.
    - .2            Contractor to correct Work as directed.
  - .3            Completion Tasks: submit written certificates in English that tasks have been performed as follows:
    - .1            Work: completed and inspected for compliance with Contract Documents.
    - .2            Defects: corrected and deficiencies completed.
    - .3            Equipment and systems: tested, adjusted balanced and fully operational.
    - .4            Certificates required by Utility companies: submitted.
    - .5            Operation of systems: demonstrated to Owner's personnel.
    - .6            Commissioning of mechanical systems: completed in accordance with 01 91 13 - General Commissioning (Cx) Requirements and Departmental Representative
    - .7            Work: complete and ready for final inspection.
  - .4            Final Inspection:
    - .1            When completion tasks are done, request final inspection of Work by Departmental Representative
    - .2            When Work incomplete according to Departmental Representative complete outstanding items and request re-inspection.
  - .5            Declaration of Substantial Performance: when Departmental Representative considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.

- .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
- .7 Final Payment:
  - .1 When Departmental Representative considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
- .8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

**1.4 FINAL CLEANING**

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

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            NOT USED

**1.2                REFERENCE STANDARDS**

- .1            NOT USED

**1.3                ADMINISTRATIVE REQUIREMENTS**

- .1            Pre-warranty Meeting:
  - .1            Convene meeting one week prior to contract completion with Departmental Representative to:
    - .1            Verify Project requirements.
    - .2            Review warranty requirements.
  - .2            Departmental Representative to establish communication procedures for:
    - .1            Notifying construction warranty defects.
    - .2            Determine priorities for type of defects.
    - .3            Determine reasonable response time.
  - .3            Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for 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.

**1.4                ACTION AND INFORMATIONAL SUBMITTALS**

- .1            Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2            Two weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, two final copies of maintenance manuals in English.
- .3            Provide evidence, if requested, for type, source and quality of products supplied.

**1.5                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            Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .4            Arrange content by systems under Section numbers and sequence of Table of Contents.
- .5            Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

- .6 Text: manufacturer's printed data, or typewritten data.
- .7 Record Drawings:
  - .1 The contractor will provide record drawings for all electrical work. Show on record drawings the location and size of new conduits, wiring, and junction boxes.
  - .2 The contractor will provide record drawings of all mechanical work. Show dimensioned layouts and schematics of piping, pits, and control wiring.
- .8 Provide hard copy of record drawings with reinforced punched binder tab.
- .9 Bind in with text; fold larger drawings to size of text pages.

## **1.6 CONTENTS - PROJECT RECORD DOCUMENTS**

- .1 Table of Contents for Each Volume: provide title of project;
  - .1 Date of submission; names.
  - .2 Addresses, and telephone numbers of Consultant 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.
  - .1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

## **1.7 RECORD DOCUMENTS AND SAMPLES**

- .1 Maintain, at site for Departmental Representative one record copy of:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Change Orders and other modifications to Contract.
  - .5 Reviewed shop drawings, product data, and samples.
  - .6 Field test records.
  - .7 Inspection certificates.
  - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction.

- .1 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.
  - .1 Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition.
  - .1 Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

**1.8 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS**

- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Departmental Representative.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
  - .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
  - .1 Measured depths of elements of foundation in relation to finish first floor datum.
  - .2 Field changes of dimension and detail.
  - .3 Changes made by change orders.
  - .4 Details not on original Contract Drawings.
  - .5 Referenced Standards 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 field test records, inspection certifications, manufacturer's certifications, required by individual specifications sections.
- .7 Provide digital photos, if requested, for site records.

**1.9 FINAL SURVEY**

- .1 NOT USED

**1.10 EQUIPMENT AND SYSTEMS**

- .1 For each item of equipment and each system include description of unit or system, and component parts.
  - .1 Give function, normal operation characteristics and limiting conditions.

- .2 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.
  - .1 Include regulation, control, stopping, shut-down, and emergency instructions.
  - .2 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 list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .12 Include test and balancing reports as specified in Section 01 91 13 - General Commissioning (Cx) Requirements.
- .13 Additional requirements: as specified in individual specification sections.

#### **1.11 MATERIALS AND FINISHES**

- .1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations.
  - .1 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.

#### **1.12 MAINTENANCE MATERIALS**

- .1 NOT USED.

**1.13 DELIVERY STORAGE AND HANDLING**

- .1 NOT USED

**1.14 WARRANTIES AND BONDS**

- .1 Develop warranty management plan to contain information relevant to Warranties.
- .2 Submit warranty management plan, 15 days before planned pre-warranty conference, to Departmental Representative approval.
- .3 Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.
- .6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
  - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
  - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
  - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
  - .4 Verify that documents are in proper form, contain full information, and are notarized.
  - .5 Co-execute submittals when required.
  - .6 Retain warranties and bonds until time specified for submittal.
- .7 Except for items put into use with Departmental Representative's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .8 Conduct joint 6 month and 12 month warranty inspection, measured from time of acceptance, by Departmental Representative.
- .9 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 roof metal
  - .3 Contractor's plans for attendance at 6 and 12 month post-construction warranty inspections.
- .10 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .11 Written verification to follow oral instructions.

- .1 Failure to respond will be cause for the Departmental Representative to proceed with action against Contractor.

**1.15 WARRANTY TAGS**

- .1 NOT USED

**Part 2 Products**

- 2.1 NOT USED**

**Part 3 Execution**

- 3.1 NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Section 01 61 41 – Commissioning Training.

**1.2                ADMINISTRATIVE REQUIREMENTS**

- .1            Demonstrate scheduled operation and maintenance of equipment and systems to Owner's personnel.
- .2            Owner: provide list of personnel to receive instructions, and co-ordinate their attendance at agreed-upon times.
- .3            Preparation:
  - .1            Verify conditions for demonstration and instructions comply with requirements.
  - .2            Verify designated personnel are present.
  - .3            Ensure equipment has been inspected and put into operation
- .4            Demonstration and Instructions:
  - .1            Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment
  - .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 needed during instructions.

**1.3                ACTION AND INFORMATIONAL SUBMITTALS**

- .1            Provide submittals in accordance with Section 01 33 00 - Submittal Procedures
- .2            Submit schedule for demonstration one weeks prior to designated dates, for Departmental Representative's approval.
- .3            Submit reports within one week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.
- .4            Give time and date of demonstration, with list of persons present.
- .5            Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

**1.4                QUALITY ASSURANCE**

- .1            NOT USED

**Part 2            Products**

**2.1                NOT USED**

**Part 3            Execution**

**3.1                NOT USED**

**END OF SECTION**

**Part 1      General**

**1.1      SUMMARY**

- .1 Section Includes:
  - .1 General requirements relating to commissioning of project's components and systems, specifying general requirements to PV of components, equipment, sub-systems, systems, and integrated systems.

**1.2      GENERAL**

- .1 Cx is a planned program of tests, procedures and checks carried out systematically on systems and integrated systems of the finished Project. Cx is performed after systems are completely installed, functional and Contractor's Performance Verification responsibilities have been completed and approved. Objectives:
  - .1 Verify installed equipment, systems and integrated systems operate in accordance with Contract Documents and design criteria and intent.
  - .2 Effectively train O M staff.
- .2 Responsibilities and Procedures:
  - .1 Contractor shall independently complete commissioning forms included in Section 01 91 33 – Commissioning Forms for each system. Commissioning forms consist of three parts:
    - .1 Static Verification
    - .2 Start-Up Verification
    - .3 Functional Performance Testing

The contractor shall use these forms to verify all equipment has been installed according to drawings and specifications and that all equipment has been tested, adjusted, and operates correctly. Contractor shall sign all forms when complete.
  - .2 Contractor shall submit completed commissioning forms to Departmental Representative for review.
  - .3 Departmental representative shall sign all commissioning forms after verifying all work on site with the Contractor.

**1.3      COMMISSIONING OVERVIEW**

- .1 Cx to be a line item of Contractor's cost breakdown.
- .2 Cx activities supplement field quality and testing procedures described in relevant technical sections.
- .3 Departmental Representative will issue Interim Acceptance Certificate when:
  - .1 Completed Cx documentation has been received, reviewed for suitability and approved by Departmental Representative

- .2 Equipment, components, systems, and integrated systems have been fully commissioned and functional as per design intent within the context of the Owner Requirement
- .3 Final O & M and Training Manual are received, reviewed and approved by the Departmental Representative for suitability
- .4 Completion of Training Sessions to all Operational and Maintenance Staff

#### **1.4 NON-CONFORMANCE TO PERFORMANCE VERIFICATION REQUIREMENTS**

- .1 Should equipment, system components, and associated controls be incorrectly installed or malfunction during Cx, correct deficiencies, re-verify equipment and components within the unfunctional system, including related systems as deemed required by Departmental Representative, to ensure effective performance.
- .2 Costs for corrective work, additional tests, inspections, to determine acceptability and proper performance of such items to be borne by Contractor. Above costs to be in form of progress payment reductions or hold-back assessments.

#### **1.5 PRE-CX REVIEW**

- .1 Before Construction:
  - .1 Review Contract Documents and commissioning requirements. Include commissioning in the project construction schedule.

#### **1.6 CONFLICTS**

- .1 Report conflicts between requirements of this section and other sections to Departmental Representative before start-up and obtain clarification.
- .2 Failure to report conflict and obtain clarification will result in application of most stringent requirement.

#### **1.7 COMMISSIONING DOCUMENTATION**

- .1 Departmental Representative to review and approve Cx documentation.
- .2 Provide completed and approved Cx documentation to Representative

#### **1.8 STARTING AND TESTING**

- .1 Contractor assumes liabilities and costs for inspections. Including disassembly and re-assembly after approval, starting, testing and adjusting, including supply of testing equipment.

#### **1.9 WITNESSING OF STARTING AND TESTING**

- .1 Departmental Representative will not witness start-up and testing. Departmental Representative will only verify and witness commissioning.

**1.10 OPERATION AND MAINTENANCE OF EQUIPMENT AND SYSTEMS**

- .1 After start-up, operate and maintain equipment and systems as directed by equipment/system manufacturer.
- .2 After completion of commissioning, operate and maintain systems until issuance of certificate of interim acceptance.

**1.11 TEST RESULTS**

- .1 If start-up, testing and/or PV produce unacceptable results, repair, replace or repeat specified starting and/or PV procedures until acceptable results are achieved.
- .2 Provide manpower and materials, assume costs for re-commissioning.

**1.12 START OF COMMISSIONING**

- .1 Notify Departmental Representative prior to start of Cx.

**1.13 WITNESSING COMMISSIONING**

- .1 Departmental Representative to verify installation of systems and sign off on all commissioning forms.

**1.14 AUTHORITIES HAVING JURISDICTION**

- .1 Where specified start-up, testing or commissioning procedures duplicate verification requirements of authority having jurisdiction, arrange for authority to witness procedures so as to avoid duplication of tests and to facilitate expedient acceptance of facility.
- .2 Obtain certificates of approval, acceptance and compliance with rules and regulation of authority having jurisdiction.
- .3 Provide copies to Departmental Representative within 5 days of test and in O & M manual.

**1.15 DEFICIENCIES, FAULTS, DEFECTS**

- .1 Correct deficiencies found during start-up and Cx to satisfaction of Departmental Representative Report problems, faults or defects affecting Cx to Departmental Representative in writing. Stop Cx until problems are rectified. Proceed with written approval from Departmental Representative

**1.16 COMPLETION OF COMMISSIONING**

- .1 Upon completion of Cx leave systems in normal operating mode.
- .2 Except for warranty and seasonal verification activities specified in Cx specifications, complete Cx prior to issuance of Interim Certificate of Completion.
- .3 Cx to be considered complete when contract Cx deliverables have been submitted and accepted by Departmental Representative

**1.17 ACTIVITIES UPON COMPLETION OF COMMISSIONING**

- .1 When changes are made to baseline components or system settings established during Cx process, provide updated Cx form for affected item.

**1.18 TRAINING**

- .1 In accordance with Section 01 91 41 - Commissioning (Cx) - Training

**1.19 MAINTENANCE MATERIALS, SPARE PARTS, SPECIAL TOOLS**

- .1 Supply, deliver, and document maintenance materials, spare parts, and special tools as specified in contract.

**1.20 OCCUPANCY**

- .1 Cooperate fully with Departmental Representative during stages of acceptance and occupancy of facility.

**1.21 OWNER'S PERFORMANCE TESTING**

- .1 Performance testing of equipment or system by Departmental Representative will not relieve Contractor from compliance with specified start-up and testing procedures.

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1        General**

**1.1            COMMISSIONING FORMS**

- .1        Use the attached commissioning forms to verify installation and record performance when starting equipment and systems.
- .2        Strategy for Use:
  - .1        Contractor uses attached commissioning forms, appending forms with manufacturer specific start-up checklists where possible.
  - .2        Contractor will provide required shop drawings information and verify correct installation and operation of items indicated on these forms.
  - .3        Confirm operation as per design criteria and intent.
  - .4        Identify variances between design and operation and reasons for variances.
  - .5        Verify operation in specified normal and emergency modes and under specified load conditions.
  - .6        Form to bear signatures of recording technician and reviewed and signed off by Departmental Representative
  - .7        Submit immediately after tests are performed.
  - .8        Reported results in true measured SI unit values.
  - .9        Provide Departmental Representative with originals of completed forms.
  - .10      Maintain copy on site during start-up, testing and commissioning period.

**Part 2        Products**

**2.1            NOT USED**

**Part 3        Execution**

- 3.1        The following commissioning forms are attached:
  - .1        Sump Pump and Pit
  - .2        Duplex Control PanelComplete a separate set of forms for duplicate systems.

**END OF SECTION**

# SUMP PUMP AND PIT

## Static Verification



REVISION #: \_\_\_\_\_

NAME: \_\_\_\_\_  
 COMPANY: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_  
 \_\_\_\_\_

CUSTOMER: PWGSC  
 PROJECT: NAB Storm Drain  
 FILE NUMBER: R.086418.001  
 DATE: 16/02/2018

NAMEPLATE			
MANUFACTURER		EQUIPMENT NO.	
SERVICE		LOCATION	

SUMP PUMP	SPECIFIED	SHOP DRAWINGS	INSTALLED
MANUFACTURER			
MODEL NO.			
SERIAL NO.			
TYPE			
SIMPLEX OR DUPLEX			
CAPACITY (USGPM)			
HEAD (FT)			
MOTOR RPM			
MOTOR (HP)			
VOLTAGE / PHASE / FREQUENCY			

SUMP PUMP	STATUS	COMMENTS
INSTALLED AS PER DRAWINGS & SPECIFICATIONS		
INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS		
PUMP INSTALLED LEVEL ON SUPPORT FRAME		
PUMP ACCESSIBLE FOR SERVICING		
NAMEPLATE VISIBLE		
PUMP FLOAT SWITCHES AT CORRECT LEVEL		
HIGH LEVEL ALARM INSTALLED AT CORRECT LEVEL AND VERIFIED		
PIPING AS PER SPECIFICATION		
ISOLATION & CHECK VALVES		

SUMP PIT	STATUS	COMMENTS
INSTALLED AS PER DRAWINGS & SPECIFICATIONS		
INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS		
LID SEAL VERIFIED / GRATE COVER INTSALLED		

# SUMP PUMP AND PIT

Static Verification



REVISION #: \_\_\_\_\_

NAME: \_\_\_\_\_  
COMPANY: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

CUSTOMER: PWGSC  
PROJECT: NAB Storm Drain  
FILE NUMBER: R.086418.001  
DATE: 16/02/2018

---

**GENERAL COMMENTS:**

POSITION/TITLE	SIGNATURE	DATE

# SUMP PUMP AND PIT

## Start-Up



REVISION #: \_\_\_\_\_

NAME: \_\_\_\_\_  
COMPANY: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

CUSTOMER: PWGSC  
PROJECT: NAB Storm Drain  
FILE NUMBER: R.086418.001  
DATE: 16/02/2018

START-UP	STATUS	COMMENTS
CAPACITY (USGPM)		
SUMP CONTAINS WATER BEFORE PUMP STARTED		
IMPELLER AND MOTOR ROTATION CORRECT		
FLOW DIRECTION CORRECT		
PUMP CAN BE REMOVED FROM SUMP FOR SERVICE		
NO LEAKAGE FROM MECHANICAL SEALS		

**GENERAL COMMENTS:**

POSITION/TITLE	SIGNATURE	DATE

# SUMP PUMP AND PIT

Functional Performance Testing



REVISION #: \_\_\_\_\_

NAME: \_\_\_\_\_  
COMPANY: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

CUSTOMER: PWGSC  
PROJECT: NAB Storm Drain  
FILE NUMBER: R.086418.001  
DATE: 16/02/2018

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SHEET INTENTIONALLY LEFT BLANK FOR INDIVIDUAL TO POPULATE AS NEEDED

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GENERAL COMMENTS:

POSITION/TITLE	SIGNATURE	DATE

# DUPLEX PUMP CONTROL PANEL

Static Verification



REVISION #: \_\_\_\_\_

NAME: \_\_\_\_\_  
COMPANY: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

CUSTOMER: PWGSC  
PROJECT: NAB Storm Drain  
FILE NUMBER: R.086418.001  
DATE: 16/02/2018

NAMEPLATE			
MANUFACTURER		EQUIPMENT NO.	
SERVICE		LOCATION	

	SPECIFIED	INSTALLED
MANUFACTURER		
MODEL NO.		
ENCLOSURE		
CIRCUIT BREAKERS		
INDICATOR LIGHTS		
AUDIBLE / VISUAL ALARM		
MANUAL SWITCHES		
AUXILIARY ALARM CONTACT		
POWER CONNECTED		
PANEL ACCESSIBLE		
PANEL IDENTIFICATION		

**GENERAL COMMENTS:**

\_\_\_\_\_

POSITION/TITLE	SIGNATURE	DATE

# DUPLEX PUMP CONTROL PANEL

## Startup



REVISION #: \_\_\_\_\_

NAME: \_\_\_\_\_  
COMPANY: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

CUSTOMER: PWGSC  
PROJECT: NAB Storm Drain  
FILE NUMBER: R.086418.001  
DATE: 16/02/2018

NAMEPLATE			
MANUFACTURER		EQUIPMENT NO.	
SERVICE		LOCATION	

START-UP	STATUS	COMMENTS
ALTERNATING LEAD/LAG CONFIGURATION		
FLOAT LEVELS		
HIGH ALARM LEVEL		
MANUAL OVERRIDE		
ALARM TEST		

**GENERAL COMMENTS:**

POSITION/TITLE	SIGNATURE	DATE

# DUPLEX PUMP CONTROL PANEL

Functional Performance Testing



REVISION #: \_\_\_\_\_

NAME: \_\_\_\_\_  
COMPANY: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

CUSTOMER: PWGSC  
PROJECT: NAB Storm Drain  
FILE NUMBER: R.086418.001  
DATE: 16/02/2018

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SHEET INTENTIONALLY LEFT BLANK FOR INDIVIDUAL TO POPULATE AS NEEDED

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GENERAL COMMENTS:

POSITION/TITLE	SIGNATURE	DATE

**Part 1        General**

**1.1        NOT USED**

**1.2        TRAINEES**

- .1        Trainees: personnel selected for operating and maintaining this facility. Includes Facility Manager, building operators, maintenance staff, security staff, and technical specialists as required.
- .2        Trainees will be available for training during later stages of construction for purposes of familiarization with systems.

**1.3        INSTRUCTORS**

- .1        Contractor to provide instruction on the following:
  - .1        Start-up, operation, shut-down of equipment, components and systems installed or changed through this project.
  - .2        Control features, reasons for, results of, implications on associated systems of, adjustment of set points of control and safety devices.
  - .3        Instructions on servicing, maintenance and adjustment of systems, equipment and components.

**1.4        TRAINING OBJECTIVES**

- .1        Training to be detailed and duration to ensure:
  - .1        Safe, reliable, and effective operation of systems in normal and emergency modes under all conditions.
  - .2        Effective on-going inspection, measurements of system performance.
  - .3        Proper preventive maintenance, diagnosis and trouble-shooting.
  - .4        Ability to update documentation.
  - .5        Ability to operate equipment and systems under emergency conditions until appropriate qualified assistance arrives.

**1.5        TRAINING MATERIALS**

- .1        Instructors to be responsible for content and quality.
- .2        Training materials to include:
  - .1        "As-Built" Contract Documents.
  - .2        O&M Manual.
- .3        Project Manager, Commissioning Manager and Facility Manager will review training manuals.
- .4        Training materials to be in a format that permits future training procedures to same degree of detail.

**1.6 SCHEDULING**

- .1 Include in Commissioning Schedule time for training.
- .2 Deliver training during regular working hours, training to be one 3 hour long session.
- .3 Training to be completed prior to acceptance of facility.

**1.7 RESPONSIBILITIES**

- .1 Contractor is responsible for preparation, coordination, and implementation of training.
- .2 Upon completion of training, provide written report, signed by Instructors, witnessed by Departmental Representative

**1.8 TRAINING CONTENT**

- .1 Training to include demonstrations by Instructors using the installed equipment and systems.

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**