TOWN OF CALEDON

TECHNICAL SPECIFICATIONS

FOR

DENNISON PARK WASHROOMS

ISSUED FOR: TENDER R1

September 12TH, 2024

PREPARED BY:

fabrik ARCHITECTS

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.2 Section 01 78 10 - Closeout Submittals.

.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 RELATED DOCUMENTS

.1 All other Division 01 specification sections.

.2 Division 01 sections describe requirements applicable to all Sections within Divisions 02 to 49 inclusive.

1.4 COMPLEMENTARY DOCUMENTS

.1 Drawings, specifications, and schedules are complementary each to the other and what is called for by one to be binding as if called for by all. Should any discrepancy appear between documents which leave doubt as to the intent or meaning, abide by Precedence of Documents article below or obtain direction from the Consultant.

.2 Drawings indicate general location and route of conduit and wire/conductors. Install conduit or wiring/conductors and plumbing piping not shown or indicated diagrammatically in schematic or riser diagrams to provide an operational assembly or system.

.3 Install components to physically conserve headroom, to minimize furring spaces, or obstructions.

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

.5 Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or additional work beyond work described to be brought to attention of Consultant.

1.5 DESCRIPTION OF THE WORK

.1 Work of this Contract comprises selective demolition, general construction, and renovation of new washrooms and existing storage spaces under existing prefabricated pavilion, located at 70 Learmont Ave, Caledon ON L7C 3P2; and identified as Dennison Park.

.2 Division of the Work among Subcontractors, suppliers/vendors is solely the Contractor's responsibility. Neither the Owner nor Consultant assumes any responsibility to act as an arbiter to establish subcontract terms between sectors or disciplines of work.

1.6 CONTRACT METHOD

.1 Relations and responsibilities are between the Contractor and the Owner.

.2 Provide the required bonds, liability insurance to ensure such specified assurances to the Owner.

.3 Refer to Section 01 21 00 for cash allowance amounts applicable to assignable contracts.

.4 Assume responsibility for assigned contracts as Subcontracts forming part of the Work.

.5 Contract Documents were prepared by the Consultant for the Owner. Any use which a third party makes of the Contract Documents, or any reliance on or decisions to be made based on them, are the responsibility of such third parties. The Consultant, Owner accepts no responsibility for damages, suffered by any third party as a result of decisions made or actions based on the Contract Documents.

.6 For purposes of reference in these Contract Documents, the term "Contractor" shall mean the party in contract with the Owner.

1.7 DOCUMENTS PROVIDED

.1 Owner will supply the Contractor with electronic PDF Contract Documents for construction purposes.

.2 The Contractor is responsible for the cost of printing Contract Documents. A minimum of one copy of Contract Documents shall be maintained on site for Contractor, Subcontractor reference.

.3 An electronic set of documents will be provided near the end of the Project for purposes of transferring changed information recorded on as-built documents to the electronic Record Documents.

1.8 PERFORMANCE OF THE WORK

.1 Substantial Performance of the Work is required for Owner occupancy on or before January 20th, 2025, unless otherwise agreed to by Owner, Consultant and Contractor in signed, written Contract. Work for this project shall not start until September 2024 unless otherwise agreed to by Owner, Consultant and Contractor in signed written agreement.

1.9 WORK SEQUENCE

.1 Construct Work in to accommodate Owner's usage requirements during the construction period, coordinate construction schedule and operations with Consultant and Owner.

.2 Coordinate Progress Schedule with Owner and Public use during construction.

.3 Maintain fire access and control of fire protection equipment.

1.10 WORK BY OWNER

.1 Items noted NIC (Not in Contract), will be supplied and installed by Owner after substantial completion is provided.

1.11 OWNER-SUPPLIED PRODUCTS

.1 Obtain the necessary Product Data / Shop Drawings from the Owner and proceed to coordinate details for installation, expedite, receive, unload, install, connect and test the specified equipment, and be responsible for warranty.

.2 Receive Owner-supplied Products and equipment F.O.B. and store and process Products and equipment until installation.

.3 Owner Responsibilities:

- .1 Arrange for delivery of shop drawings, product data, samples, manufacturer's instructions, and certificates to Contractor and Consultant.
- .2 Deliver supplier's bill of materials to Contractor.
- .3 Arrange and pay for delivery to the Place of the Work in accordance with Progress Schedule.
- .4 Inspect deliveries jointly with Contractor.
- .5 Submit claims for transportation damage.
- .6 Arrange for replacement of damaged, defective or missing items.
- .7 Arrange for manufacturer's field services; arrange for and deliver manufacturer's warranties and bonds to Contractor.

.4 Contractor Responsibilities:

- .1 Designate submittals and delivery date for each Product in progress schedule.
- .2 Review shop drawings, product data, samples, and other submittals. Submit to Consultant, notification of any observed discrepancies or problems anticipated due to non-conformance with Contract Documents.
- .3 Receive and unload Products at site.
- .4 Inspect deliveries jointly with Owner; record shortages, and damaged or defective items.
- .5 Handle Products at site, including uncrating and storage.
- .6 Protect Products from damage, and from exposure to elements.
- .7 Assemble, install, connect, adjust, and finish Products.
- .8 Arrange for installation inspections required by public authorities.
- .9 Repair or replace items damaged by Contractor or Subcontractor on site (under their control).

.5 Schedule of Owner-supplied Products.

- .1 Select Washroom Accessories. Refer to schedule in Section 10 28 14.

1.12 CONTRACTOR USE OF PREMISES

.1 Contractor has unrestricted use of site until Substantial Performance of the Work.

.2 Limit use of site and premises to allow:

- .1 Owner and public occupancy.
- .2 Work and maintenance by Owner and Other.
- .3 Use of site and premises by the public.

.3 Construction Operations: Limited to areas noted on Drawings unless otherwise agreed upon with Owner and Consultant.

.4 Time Restrictions for Performing Work: Refer to Section 01 14 00 – Work Restrictions.

.5 Utility Outages and Shutdown: Refer to Section 01 14 00 – Work Restrictions.

1.13 OWNER AND PUBLIC OCCUPANCY

.1 Owner and Public will occupy premises surrounding work area during entire construction period for execution of normal operations.

.2 Cooperate with Owner in scheduling operations to minimize conflict and to facilitate Owner and Public usage.

1.14 PARTIAL OWNER OCCUPANCY

.1 Schedule and substantially complete designated portions of Work for Owner's occupancy prior to Substantial Performance of entire Work.

.2 Owner may require temporary access to designated areas for purpose of equipment and site maintenance related to adjacent splash pad operation. Owner must coordinate with Contractor for access to designated areas.

.3 Execute Certificate of Substantial Performance of the Work for each designated portion of Work prior to Owner occupancy. Contractor shall allow:

.1 Access for Owner personnel.

.2 Use of parking facilities.

.3 Operation of mechanical and electrical systems.

.4 On occupancy, Owner will provide for occupied areas:

.1 Operation of mechanical and electrical systems.

.2 Maintenance.

.3 Security.

.5 Maintain fire and life safety systems during all stages of the Work.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Connecting to existing services.

.2 Special scheduling requirements.

1.2 RELATED SECTIONS

.1 Section 01 53 00 - Temporary Construction.

.2 Section 01 33 00 - Submittal Procedures.

.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 EXISTING SERVICES

.1 Notify Owner, Consultant and utility companies of intended interruption of services and obtain required permission.

.2 Where Work involves breaking into or connecting to existing services, give Owner, Consultant, forty-eight (48) hours of notice for necessary interruption of mechanical or electrical service throughout course of work.

.1 Keep duration of interruptions minimum.

.2 Perform interruptions before or after normal working hours of occupants and public park users.

.3 Provide for personnel, pedestrian and vehicular traffic related to the site.

.4 Construct barriers in accordance with Section 01 53 00.

1.4 SPECIAL REQUIREMENTS

.1 Perform noise generating work in conformance with the Town of Caledon by-law No. 86-110.

.2 Submit schedule of special requirements or disruptions in accordance with Section 01 33 00.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Cash allowances.

.2 Inspection and testing allowances.

1.2 RELATED SECTIONS

.1 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 CASH ALLOWANCES

.1 Costs Included in Cash Allowances: Cost of Product to Contractor less applicable trade discounts; delivery to site, and applicable taxes.

.2 If a Cash Allowance item described in the Allowances Schedule below indicates the inclusion of installation, include in the Cash Allowance amount, provision for Product handling at the site, including unloading, uncrating, storage, protection of Products from elements and from damage, labour for installation and finishing, insurance, labour costs, taxes, bonding if applicable, equipment rental, overhead and profit.

.3 If a Cash Allowance item described in the Allowances Schedule below indicates supply only, include in the Contract Price costs not included in Cash Allowances but included in the Contract Price: Product handling at the site including unloading, uncrating, storage, protection of Products from elements and from damage, labour for installation and finishing, insurance, labour costs, taxes, bonding if applicable, equipment rental, overhead and profit.

.4 Consultant Responsibilities:

- .1 Consult with Contractor for consideration and selection of Products, suppliers, and installers.
- .2 Owner and Consultant to select Products.
- .3 Prepare Change Order.

.5 Contractor Responsibilities:

- .1 Assist Consultant in selection of Products, suppliers and installers.
- .2 Obtain proposals from suppliers and installers and offer recommendations.
- .3 On notification of selection by Consultant or Owner, execute purchase agreement with designated supplier and installer.
- .4 Arrange for and process shop drawings, product data, and samples. Arrange for delivery.
- .5 Promptly inspect Products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.

.6 Differences in costs will be adjusted by Change Order.

.7 Allowances Schedule:

- .1 N/A

1.4 INSPECTING AND TESTING ALLOWANCES

.1 Costs related to Inspecting and Testing are the responsibility of the Contractor. Review mechanical, electrical, structural and civil drawings, notes and specifications for required inspections and testing.

1.5 CONTINGENCY ALLOWANCE

.1 N/A

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Substitutions.

1.2 RELATED SECTIONS

.1 Section 01 21 00 - Allowances.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 SUBSTITUTIONS

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

.2 Consultant will consider requests for Substitutions only during bidding process. No Substitutions will be considered after bid closes unless otherwise outline in this specification section and approved by Consultant and Owner.

.1 All Substitutions during time of bidding shall be submitted as question through bidding website. Contact bid overseer with additional product information if it cannot be submitted with the question through the website.

.3 Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.

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

.5 A request constitutes a representation that the Bidder, Contractor:

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

.2 Has investigated and determined that finish options are identical or comparable to specified Product. Consultant reserves the right to deny proposed Substitution based on available finishes.

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

.4 Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.

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

.6 Will reimburse Owner and Consultant for review or redesign services associated with re-approval by authorities.

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

.7 Substitution Submittal Procedure:

.1 Submit one digital copy of request for Substitution for consideration. Limit each request to one (1) proposed Substitution.

.2 Submit shop drawings, product data, finish options and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.

.3 The Consultant will notify Bidder, Contractor in writing of decision to accept or reject request.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Pre-installation and Scheduled progress meetings.

1.2 RELATED SECTIONS

.1 Section 01 32 00 - Construction Progress Documentation.

.2 Section 01 33 00 - Submittal Procedures.

.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 PROJECT MEETINGS

.1 Schedule and administer project kick-off meeting.

.2 Schedule and administer bi-weekly project meetings throughout progress of Work as determined by Consultant.

.3 Schedule and administer pre-installation meetings when specified in sections and when required to coordinate related or affected Work.

.4 Prepare agenda for meetings.

.5 Distribute written notice of each meeting four (4) days in advance of meeting date to Consultant and Owner.

.6 Provide physical space and make arrangements for meetings.

.7 Preside at meetings.

.8 Record minutes. Include significant proceedings and decisions. Identify action by parties.

.9 Reproduce and distribute copies of minutes within three (3) days after each meeting and transmit to meeting participants, affected parties not in attendance, Consultant and Owner.

1.4 CONSTRUCTION ORGANIZATION AND START-UP

.1 Within fifteen (15) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.

.2 Representative(s) of the Consultant, Senior representatives of the Owner, Contractor, major Subcontractors, field inspectors and supervisors are to be in attendance.

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

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

.5 Administer, preside, record and reproduce minutes for kick-off meeting.

.6 Agenda to include following:

.1 Appointment of official representative of participants in Work.

.2 Schedule of Work, progress scheduling as specified in Section 01 32 00.

.3 Reoccurring construction progress meeting day and time.

.4 Schedule of submission of shop drawings, samples, colour chips as specified in Section 01 33 00.

.5 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences as specified in Section 01 51 00.

.6 Delivery schedule of specified equipment as specified in Section 01 32 00.

.7 Site safety, security as specified in Section 01 35 23.

.8 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.

.9 Owner-furnished Products.

.10 Record drawings as specified in Section 01 78 40.

.11 Maintenance material and data as specified in Section 01 78 40.

.12 Take-over procedures, acceptance, and warranties as specified Section 01 78 40.

.13 Monthly progress claims, administrative procedures, photographs, and holdbacks.

.14 Appointment of inspection and testing agencies or firms as specified in Section 01 43 00, 01 45 00.

.15 Insurances and transcript of policies.

.7 Comply with Consultant's allocation of mobilization areas of site; for field offices and sheds, for temporary facilities and utilities, access, traffic, and parking facilities.

.8 During construction, coordinate use of site and facilities through Consultant's procedures for intra-project communications: Submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.

.9 Comply with instructions of Consultant and Owner for use of temporary utilities and construction facilities.

.10 Coordinate field engineering and layout work with Consultant.

1.5 ON-SITE DOCUMENTS

.1 Maintain at job site, one copy each of the following:

.1 Contract drawings.

.2 Specifications.

.3 Addenda.

.4 Reviewed shop drawings.

.5 Change orders.

.6 Other modifications to Contract.

.7 Field test reports.

.8 Copy of approved Work schedule.

.9 Manufacturers' installation and application instructions.

.10 Labour conditions and wage schedules.

.11 Applicable current editions of municipal regulations and by-laws. Current building codes, complete with addenda bulletins applicable to the Place of the Work.

1.6 SCHEDULES

.1 Submit preliminary construction progress schedule as specified in Section 01 32 00 to Consultant coordinated with Consultant's project schedule.

.2 After review, revise and resubmit schedule to comply with revised project schedule.

.3 During progress of Work revise and resubmit schedule monthly and at other times as requested by Consultant.

1.7 CONSTRUCTION PROGRESS MEETINGS

.1 During course of Work and one week prior to project completion, schedule progress meetings every two weeks.

.2 Contractor, major subcontractors involved in Work, Consultant, and Owner are to be in attendance.

.3 Notify parties minimum 3 days prior to meetings. Meetings to be held at previously agreed upon reoccurring day and time unless otherwise agreed to at previous meeting.

.4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within three (3) days after meeting.

.5 Agenda to include following:

.1 Review, approval of minutes of previous meeting.

.2 Review of Work progress since previous meeting.

.3 Field observations, problems, conflicts.

.4 Problems which impede construction schedule.

.5 Review of off-site fabrication delivery schedules.

.6 Corrective measures and procedures to regain projected schedule.

.7 Revision to construction schedule.

.8 Progress schedule, during succeeding work period.

.9 Review submittal schedules: expedite as required.

.10 Maintenance of quality standards.

.11 Review proposed changes for affect on construction schedule and on completion date.

.12 Review site safety and security issues.

.13 Other business.

1.8 SUBMITTALS

.1 Prepare and issue submittals to Consultant for review.

.2 Submit preliminary Shop Drawings, product data and samples as specified in Section 01 33 00 for review for compliance with Contract Documents; for field dimensions and clearances, for relation to available space, and for relation to Work of other contracts. After review, revise and resubmit for transmittal to Consultant.

.3 Submit requests for payment for review, and for transmittal to Consultant.

.4 Submit requests for interpretation of Contract Documents, and obtain instructions through Consultant.

.5 Process substitutions through Consultant.

.6 Process change orders through Consultant.

.7 Deliver closeout submittals for review and preliminary inspections, for transmittal to Consultant.

1.9 COORDINATION DRAWINGS

.1 Provide information required by Consultant for preparation of coordination Drawings.

.2 Review and approve revised Drawings for submittal to Consultant.

1.10 CLOSEOUT PROCEDURES

.1 Notify Consultant when Work is considered ready for Substantial Performance.

.2 Accompany Consultant on preliminary inspection to determine items listed for completion or correction.

.3 Comply with Consultant's instructions for correction of items of Work listed in executed certificate of Substantial Performance.

.4 Notify Consultant of instructions for completion of items of Work determined in Consultant's final inspection.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Schedules, form, content, submission.

.2 Critical path scheduling.

.3 Progress photographs.

.4 Submittals schedule.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 SCHEDULES

.1 Submit schedules as follows:

- .1 Submittal Schedule for Shop Drawings and Product Data.
- .2 Submittal Schedule for Samples.
- .3 Submittal Schedule for timeliness of Owner-furnished Products.
- .4 Product Delivery Schedule.
- .5 Shutdown or closure activity.

.2 Schedule Format.

- .1 Prepare schedule in form of a horizontal GANTT bar chart.
- .2 Provide a separate bar for each major item of work, operation.
- .3 Split horizontally for projected and actual performance.
- .4 Provide horizontal time scale identifying first Working Day of each week.
- .5 Format for listings: Chronological order of start of each item of work.
- .6 Identification of listings: By specification subjects, systems description.

.3 Schedule Submission.

- .1 Submit initial format of schedules within fifteen (15) days after award of Contract.
- .2 Submit schedules in electronic format, forward through e-mail as *.pdf files.
- .3 Consultant will review schedule and return review copy within ten (10) days after receipt.
- .4 Resubmit finalized schedule within seven (7) days after return of review copy.
- .5 Submit revised progress schedule with each application for payment.
- .6 Distribute copies of revised schedule to:
  - .1 Job site office.
  - .2 Subcontractors.
  - .3 Other concerned parties.

.7 Instruct recipients to report to Contractor within ten (10) days, any problems anticipated by timetable shown in schedule.

1.4 CONSTRUCTION PROGRESS AND CRITIAL PATH SCHEDULING

.1 Submit initial schedule in duplicate within fifteen (15) days after date of Owner-Contractor Agreement.

.2 Revise and resubmit as required.

.3 Submit revised schedules with each Application for Payment, identifying changes since previous version.

.4 Submit a computer generated, horizontal bar chart with separate line for each portion of Work or operation, identifying first work day of each week.

.5 Submit computer generated network analysis diagram using the critical path method.

.6 Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.

.7 Indicate estimated percentage of completion for each item of Work at each submission.

.8 Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner and required by Allowances.

.9 Include dates for commencement and completion of each major element of construction including but not limited to the following:

.1 Site clearing.
.2 Site utilities.
.3 Foundation Work.
.4 Structural framing.
.5 Special Subcontractor Work.
.6 Equipment Installations.
.7 Finishes.

.10 Indicate projected percentage of completion of each item as of first day of month.

.11 Indicate progress of each activity to date of submission schedule.

.12 Indicate changes occurring since previous submission of schedule:

.1 Major changes in scope.
.2 Activities modified since previous submission.
.3 Revised projections of progress and completion.
.4 Other identifiable changes.

.13 Provide a narrative report to define:

.1 Problem areas, anticipated delays, and impact on schedule.
.2 Corrective action recommended and its effect.
.3 Effect of changes on schedules of other prime contractors.

1.5 WEEKLY PROGRESS REPORTS AND PHOTOGRAPHS

.1 Weekly Report:

- .1 Submit one progress report every Monday throughout entirety of project via email to Consultant and Owner.
- .2 Include the following:
  - .1 Work completed the previous week.
  - .2 Anticipated work to be completed the upcoming week.
  - .3 Temporary utility shutdowns or site access items.
  - .4 Other important items as determined by Contractor

.2 Digital Photography:

- .1 Submit electronic copy of colour digital photography in *.jpg format, minimum 6 megapixel resolution.
- .2 Identification: Name and number of project and date of exposure indicated.
- .3 Number of Viewpoints: Four (4) minimum. Locations of viewpoints determined by work recently completed.
- .4 Frequency:
  - .1 Weekly with Weekly Report email.
  - .2 At completion of excavation, foundation, framing and services before concealment, reoccurring as directed by Consultant and specification above.

1.6 SUBMITTALS SCHEDULE

.1 Include schedule for submitting Shop Drawings, product data, samples.

.2 Indicate dates for submitting, review time, resubmission time, and last date for meeting fabrication schedule.

.3 Include dates when submittals, delivery will be required for Owner-furnished products.

.4 Include dates when reviewed submittals will be required from Consultant.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Shop Drawings and product data.

.2 Samples.

.3 Certificates and transcripts.

1.2 RELATED SECTIONS

.1 Section 01 32 00 - Construction Progress Documentation.

.2 Section 01 78 10 - Closeout Submittals.

.3 Other sections requesting submittals.

.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 ADMINISTRATIVE

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

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

.3 Present Shop Drawings, product data, samples and mock-ups in IP (imperial inch-pound) units.

.4 Where items or information is not manufactured or produced in SI metric units, converted values within the metric measurement tolerances are acceptable.

.5 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents.

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

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

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

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

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

.11 Keep one (1) 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 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.3 Allow ten (10) days for Consultant's review of each submission.

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

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

.6 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.

.7 Submissions shall include:

- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
  - .1 Subcontractor.
  - .2 Supplier.
  - .3 Manufacturer.
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:
  - .1 Fabrication.
  - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
  - .3 Setting or erection details.
  - .4 Capacities.
  - .5 Performance characteristics.
  - .6 Standards.
  - .7 Operating weight.

.8 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to other parts of the Work.

.8 After Consultant's review, distribute copies.

.9 Submit electronic copy of Shop Drawings for each requirement requested in specification Sections and as consultant may reasonably request.

.10 Submit electronic copy of product data sheets or brochures for requirements requested in specification sections and as requested by Consultant where Shop Drawings will not be prepared due to standardized manufacture of product.

.11 Delete information not applicable to project.

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

.13 If upon review by Consultant, 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 re-submission of corrected Shop Drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.5 SAMPLES

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

.2 Deliver samples prepaid to Consultant's business address unless otherwise agreed upon.

.3 Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.4 Where colour, pattern or texture is criterion, submit full range of samples.

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

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

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

1.6 MOCK-UP

.1 Erect mock-ups to Section 01 43 00, 01 45 00, as requested throughout material and product specification sections.

1.7 CERTIFICATES AND TRANSCRIPTS

.1 Immediately after award of Contract, submit Workers' Compensation Board status.

.2 Submit transcription of insurance immediately after award of Contract.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Safety requirements and adherence.

1.2 RELATED SECTIONS

.1 Section 01 31 00 - Project Managing and Coordination.

.2 Section 01 33 00 - Submittal Procedures.

.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 REFERENCES

.1 Province of Ontario: Occupational Health and Safety Act, Regulation and Code R.S.A - Amended, including requirements for a "Prime Contractor" as defined by the Act.

1.4 SAFETY PLAN

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

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

1.5 RESPONSIBILITY

.1 The "Prime Contractor" according to applicable local jurisdiction, is 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, and local statutes, regulations, and ordinances, and with site-specific Town of Caledon Health and Safety Plan.

.3 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, and follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of the Province of Ontario and local regulators, having jurisdiction. Advise Consultant verbally and in writing.

.4 Contractor is responsible for collecting WSIB Clearance Certificates and Certificates of Insurance (COIs) coverage for all subcontractors planned to be brought to the work site prior to arrival. The COIs should follow the minimum coverage requirements as required by the Town of Caledon.

.5 Contractor is responsible for enforcing all PPE site requirements at all times from Contractors, Subcontractors, and anyone else accessing the designated work site area.

1.6 SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00.

.2 File Notice of Project with the Province of Ontario, Ministry of Labour and Owner prior to commencement of Work.

.3 Submit site-specific Health and Safety Plan: Within seven (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.

.4 Submit two (2) copies of Contractor's authorized representative's work site health and safety inspection reports to Consultant and Owner, weekly.

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

.6 Submit copies of incident and accident reports.

.7 Submit Safety Data Sheets (SDS) to Consultant.

.8 Consultant will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within seven (7) days after receipt of plan. Revise plan as appropriate and resubmit plan to Consultant within 5 days after receipt of comments from Consultant.

.9 Consultant'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.

.10 Medical Surveillance: Where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Consultant.

.11 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergency situations.

.12 Submit Safety Data Sheets (SDS) and Technical Data Sheets (TDS) to Consultant for any chemicals, products, and adhesives planned to be brought on site seven (7) days prior to site work for approval.

.13 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergency situations.

.1 Contact local emergency authorities (911) and seek immediate medical assistance.

.2 Activation of on-site Emergency Response Team (ERT) for response to Working at Heights rescue and response.

.3 Securing of the incident scene.

.4 Provide immediate first aid.

.5 Post emergency contact information, directions to nearest hospital for emergency treatment.

.6 Relevant contact information to trained on-site Frist Aider, Prime Contractor, designated Health and Safety Coordinator.

1.7 SAFETY ACTIVITIES

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

.2 Schedule and administer Health and Safety meeting with Consultant prior to commencement of Work.

1.8 PROJECT HEALTH & SAFETY COORDINATOR OR ASSIGNED DESIGNATE

.1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator, or Assigned Designate with the following qualifications and to complete the following tasks:

.2 Have minimum two (2) years' site-related working experience specific to activities associated with:

.1 General construction health and safety;

.2 Industrial lift equipment safety and inspection requirements;

.3 Enforcement of site PPE, fall arrest equipment, inspection protocols for fall arrest equipment, and monitoring of adherence and use of required on-site PPE, hot work protocols, and LOTO requirements.

.3 Have working knowledge of occupational safety and health regulations.

.4 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.

.5 Responsible to conducting site safety orientation session with all personnel (e.g., subcontractors) who will be accessing the work site where site safety hazards, PPE requirements, and access protocols will be reviewed. Safety orientation completion list to be maintained for the duration of the project showing that site safety rules have been reviewed by personnel accessing the work site.

.6 Assign a Ground-Level Spotter for any overhead work involving Mobile Elevated Work Platforms (MEWP). Ground-level Spotter must be always at ground level for the duration of the use of the MEWP equipment to ensure passersby individuals are away from the work area, and to support the MEWP operator in case of emergencies.

.7 Ensuring work areas around the use of MEWPs, cranes, or similar powered equipment is barricaded, fenced, tarped and cautioned off to prevent and keep away pedestrians from designated Work area.

.8 Review and obtain approval for any planned use of overhead crane use from Contractor, Consultant and Owner prior to planned site work.

.9 Ensure proper warning and danger signage is in place.

.10 Be responsible for checking the training records of all on-site Contractors prior to arrival on site, ensuring required training certificates for Working at Heights, LOTO, ladder safety and any other required safety training. Ensure training records are available and current (within the required training refreshment period). Obtain copies and keep on record for the duration of the project.

.11 Ensure any electrical, mechanical and technical subcontractors and trades provide training records and certifications for validation prior to working at the project site.

.12 Conducting ongoing site inspections throughout the working day, monitoring overall safety, taking immediate actions to resolve any observed health and safety discrepancies.

.13 Monitoring adherence and use of mandatory on-site PPE, and take immediate action to correct noncompliance to site PPE and safety rules.

.14 Ensuring that there is no roof work or access unless authorized and approved.

.15 Have full authority to stop any on-site Work when health and safety requirements are not met, or unsafe working conditions are observed.

.16 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

1.9 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 the Province of Ontario and in consultation with Consultant.

.2 Relevant on-site health and safety information is posted and contains most current updates related to onsite Work. Posted information to include relevant contact numbers to main Contractor, Consultant, and Owner contacts. Ensure building permits are posted along with all emergency protocols, mandatory PPE requirements, ERT, first aider, and all applicable items listed in 1.9.1.

.3 Posted information to include daily work permits related to on-site works and activities.

1.10 CORRECTION OF NON-COMPLIANCE

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

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

.3 Consultant, Owner, or any Owner-representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.11 PROJECT/SITE CONDITIONS

.1 Work at site will involve contact with:

.1 Concrete foundations, existing metal pergola rework, exterior wall assemblies, interior finishes, etc.

.2 Review Contract Documents for full work scope.

1.12 HAZARDOUS WORK

.1 No hot work, or works that generate heat, fire and/or sparks (e.g., welding, cutting, grinding, etc.) without prior approval from Consultant and Owner.

.2 No roof top access or work without prior approval from Consultant and Owner.

.3 No use of any Mobile Elevated Work Platforms (MEWPs) unless the equipment has been validated to have a current annual inspection and is in proper working condition. Any workers using MEWPs must have proper training and must conduct and document the pre-use inspection of the MEWP prior to operating the MEWP equipment.

.4 All Working at Heights (WAH) works and activities must be performed by workers who have valid and current WAH training certificates.

.5 Any work involving ladders (e.g., step ladders, roll-up ladders, etc.) must be performed only using ladders that are in good working condition, inspected prior to use for any defects and load capacities, and used by workers who have valid and current ladder safety training certificates.

.6 Any equipment and device that is being serviced, repaired, decommissioned, removed, demolished and placed out of serviced must have all hazardous energy sources safety de-energized and locked and tagged by personnel with current and valid lockout-tagout (LOTO) training.

.7 Traffic around the designated work area must be controlled at all times to ensure safe passage of pedestrian and clear segregation between pedestrian and any motor vehicles.

.8 Maintain a clear separation between designated work areas, and surrounding areas by ensuring the entire work area is tarped-off, fenced off, and includes appropriate signage indicating hazards in the work area, PPE requirements, designated work contact, and an operational phone number where the designated work contact can be reached.

1.13 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.

.2 Owner, Consultant, Health and Safety Coordinator, Contractor, and any local building facilities staff member from the Owner side is empowered and has full authority to immediately stop any observed unsafe work activity, or unsafe work condition at any time to ensure the health and safety without hesitation.

1.14 FIRE PROTECTION

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

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

.3 Maintain placed or installed fire resistive construction to protect the portions of the Work during construction.

.4 Ensure all combustible material is removed to at least 35 feet away from the hot work area or shield with flameproof covers or curtains extending to the ground. Review any planned hot work works and activities with Consultant and Owner and obtain approval prior to planned work.

.5 Assign a designated fire monitor and a fully trained fire watch in the use of a fire extinguisher and equipped with an operational and fully charged fire extinguisher for all hot work works and activities. Fire watch cannot have any other duties assigned while performing the role of a fire watch.

.6 Any planned work on the site’s fire and life safety systems (e.g., sprinklers, fire monitoring system, etc.) requires prior approval from Consultant and Owner.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Quality assurance criteria.

1.2 RELATED SECTIONS

.1 Section 01 45 00 - Quality Control.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 REFERENCES

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

1.4 QUALITY ASSURANCE

.1 Provide testing organization services as specified in Section 01 45 00 and within all mechanical, electrical, structural and civil specifications.

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

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

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

.5 Qualifications:

.1 Provide adequate workforce training through meetings and demonstrations.

.2 Have someone on site with deconstruction experience throughout project for consultation and supervision purposes.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Inspection and testing, administrative and enforcement requirements.

.2 Tests and mix designs.

.3 Mock-ups.

.4 Mill tests.

.5 Written and electronic reports.

.6 Equipment and system adjust and balance.

1.2 RELATED SECTIONS

.1 Section 01 21 00 - Allowances.

.2 Section 01 43 00 - Quality Assurance.

.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 REFERENCES

.1 ISO/IEC 17025-2005 - General Requirements for the Competence of Testing and Calibration Laboratories.

.2 SCC (Standards Council of Canada).

1.4 INSPECTION BY AUTHORITY

.1 Allow Authorities Having Jurisdiction 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 whenever portions of the Work are designated for special tests, inspections or approvals, either when described in the Contract Documents or when required by law in the Place of the 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 at no cost to the Owner or delay to the construction schedule.

1.5 REVIEW BY CONSULTANT

.1 Consultant may order any part of the Work to be reviewed or inspected if Work is suspected to be not in accordance with Contract Documents.

.2 If, upon review such work is found not in accordance with Contract Documents, correct such Work and pay cost of additional review and correction.

.3 If such Work is found in accordance with Contract Documents, Owner will pay cost of review and replacement.

1.6 INDEPENDENT INSPECTION AGENCIES

.1 Independent Inspection and Testing Agencies will be engaged by Contractor for purpose of inspecting and testing portions of Work as outline in Contract Documents. Cost of such services shall be borne by Contractor in their base bid.

.2 Testing Organizations: Listed by SCC within info.palcan@scc.ca listings.

.3 Allocate Costs: To Section 01 21 00.

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

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

.6 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and testing to ascertain full degree of defect. Correct defect and irregularities as advised by Consultant at no cost to Owner. Pay costs for retesting and re-inspection.

1.7 ACCESS TO WORK

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

.2 Cooperate to provide reasonable access and facilities for such access.

1.8 PROCEDURES

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

.2 Submit samples and materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay 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.

1.9 REJECTED WORK

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

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

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

1.10 REPORTS

.1 Submit one (1) electronic copy of signed inspection and test reports to Consultant.

.2 Provide signed paper copies to Subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.

1.11 TESTS AND MIX DESIGNS

.1 Furnish test results and mix designs as may be requested.

.2 The cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by Consultant and may be authorized as recoverable.

1.12 MOCK-UP

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

.2 Construct in all locations acceptable to Consultant.

.3 Prepare mock-ups for Owner and Consultant's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.

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

.5 If requested, Consultant will assist in preparing a schedule fixing dates for preparation.

.6 Remove mock-up at conclusion of Work or when acceptable to Consultant. Repair any damage and clean-up at place of mock-up.

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

1.13 MILL TESTS

.1 Submit mill test certificates as requested and/or required of specification Sections.

1.14 EQUIPMENT AND SYSTEMS

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

.2 Refer to mechanical and electrical Drawings and specifications for definitive requirements.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Temporary utilities.

.2 Salvaging products for reuse.

1.2 RELATED SECTIONS

.1 Section 01 52 00 - Construction Facilities.

.2 Section 01 53 00 - Temporary Construction.

1.3 INSTALLATION AND REMOVAL

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

.2 Salvage and assist in recycling products for potential reuse.

.3 Remove from site all such work after use.

.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.4 DEWATERING

.1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.5 WATER SUPPLY

.1 Provide continuous supply of potable water for construction use.

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

.3 Pay for utility charges at prevailing rates.

1.6 TEMPORARY HEATING AND VENTILATION

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

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

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

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

.4 Maintain temperatures of minimum 10 degrees C in areas where construction is in progress.

.5 Ventilating:

.1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.

.2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.

.3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.

.4 Ventilate storage spaces containing hazardous or volatile materials.

.5 Ventilate temporary sanitary facilities.

.6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.

.6 Permanent heating system of building is not available.

.7 Pay costs for setting up, maintaining, and removing temporary heat.

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

.1 Conform with applicable codes and standards.

.2 Enforce safe practices.

.3 Prevent abuse of services.

.4 Prevent damage to finishes.

.5 Vent direct-fired combustion units to outside.

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

1.7 TEMPORARY POWER AND LIGHT

.1 Contractor will provide a source for, and pay the costs of temporary power during construction for temporary lighting and operating of power tools, beyond what supply the devices currently on site can provide.

.2 Owner will provide a source for temporary power during construction for temporary lighting and operating of power tools, to a maximum supply of what supply of devices currently on site can handle.

.3 Provide and pay for temporary power during construction for temporary lighting and operating of power tools.

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

.5 Provide and pay for temporary power for electric cranes and other equipment requiring temporary power in excess of above noted requirements.

.6 Provide and maintain temporary lighting throughout project. Ensure level of illumination is not less than 16 lumen per sq ft.

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

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

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Construction aids.

.2 Office and sheds.

.3 Parking.

.4 Project identification.

1.2 RELATED SECTIONS

.1 Section 01 51 00 - Temporary Utilities.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 INSTALLATION AND REMOVAL

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

.2 Remove from site all such work after use.

1.4 USE OF THE WORK

.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 a weight or force that will endanger the Work.

1.5 CONSTRUCTION PARKING

.1 Parking will be permitted on site provided it does not disrupt performance of Work and/or continuing operation of the site facility. Exact extents and location to be coordinated with Owner at project kick-off meeting.

.2 Provide and maintain adequate access to project site.

.3 Build and maintain temporary roads where directed by Consultant and provide snow removal during period of Work.

.4 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.

.5 Contractor is responsible to repair and make good any existing drive lanes, parking, sidewalks and/or roadways, that are damaged during construction within project area at no cost to the Owner.

1.6 OFFICES

.1 No site trailer is required for this project.

1.7 EQUIPMENT, TOOL AND MATERIALS STORAGE

.1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials as required. Coordinate location with Consultant and Owner.

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

.3 Owner is not responsible for security of materials, tools, etc. stored on site. Contractor storage on site is at the Contractor's risk.

1.8 SANITARY FACILITIES

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

.2 Post notices and take such precautions as required by local health authorities.

.3 Except where connected to municipal sewer system, periodically remove wastes from Site.

.4 No permanent facilities exist on site.

.5 Keep sanitary facilities clean and fully stocked with the necessary supplies at all times.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Site enclosure.

.2 Guardrails and barriers.

.3 Weather enclosures.

.4 Dust tight barriers.

.5 Protection for off-site and public property

.6 Protection of applied finishes.

.7 Protection of surrounding Work.

1.2 RELATED SECTIONS

.1 Section 01 51 00 - Temporary Utilities.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 INSTALLATION AND REMOVAL

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

.2 Remove from site all such work after use.

1.4 SITE ENCLOSURE

.1 Erect temporary site enclosure using new 4 ft high metal fence, posts spaced at 8 ft on centre, in accordance with all local and provincial regulations.

.1 Provide one (1) lockable truck gate.

.2 Maintain fence enclosure in good repair.

.2 Provide one (1) lockable truck entrance gate/gates and at least one (1) pedestrian door as directed and conforming to applicable traffic restrictions on adjacent streets. Equip gates with locks and keys with restricted availability, in the project office or other location as approved by Consultant and Owner.

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

.4 Provide barriers around trees and plants designated to remain.

.5 Protect from damage by equipment and construction procedures.

1.5 GUARD RAILS AND BARRIERS

.1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.

.2 Provide as required by governing authorities and all applicable codes and regulations.

1.6 WEATHER ENCLOSURES

.1 Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.

.2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.

.3 Design enclosures to withstand wind pressure and snow loading.

1.7 DUST TIGHT BARRIERS

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

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

1.8 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

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

.2 Be responsible for damage incurred at no cost to the Owner.

1.9 PROTECTION OF APPLIED FINISHES

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

.2 Provide necessary screens, covers, and hoardings.

.3 Confirm with Consultant locations and installation schedule minimum three (3) days prior to installation.

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

1.10 PROTECTION OF SURROUNDING WORK

.1 Provide protection for finished and partially finished Work from damage.

.2 Provide necessary cover and protection.

.3 Be responsible for damage incurred due to lack of or improper or inappropriate protection at no cost to the Owner.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Create an erosion and sediment control plan.

.2 Prevent loss of soil during construction by storm water runoff and wind erosion.

.3 Protect stockpiled topsoil.

.4 Prevent sedimentation of storm water and receiving streams.

.5 Prevent pollution of the air with dust and particulate matter.

1.2 RELATED SECTIONS

.1 Refer to Civil and Structural Drawings and Specifications.

1.3 REFERENCES

.1 EPA 832/R-92-005 - Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices, September 1992.

.2 Local erosion and sediment control guidelines.

1.4 DEFINITIONS

.1 Erosion: Deterioration, displacement, or transportation of land surface by wind or water, intensified by land-clearing practices related to construction activates.

.2 Rain or Rain Storm: An event defined causing the pooling of water on road or other impervious surfaces.

.3 Sediment: Particulate matter transported and deposited as a layer of solid particles within a body of water.

.4 Snow Melt: An event in snow conditions when the temperature is above 0 degrees C or when environmental conditions causing snow on the ground to melt.

1.5 SUBMITTALS

.1 Provide requested information specified in Section 01 33 00.

.2 Provide within fourteen (14) days of date established for commencement of the Work.

.3 Application for Payment: Concurrent with each application, provide the following Inspection Log information:

.1 Weekly inspection record.

.2 Report damages or deficiencies and maintenance of erosion and sediment control measures.

.3 Identify and address standing rainwater or snowmelt conditions.

Part 2 Products

2.1 SILT FENCING

.1 Posts: Steel "T" cross section, of lengths as required.

.2 Geotextile: Woven polypropylene filter fabric, resistant to ultra-violet degradation.

Part 3 Execution

.1 Prevent cleared topsoil and excavated earth stockpiled on site from being eroded by rain storm, snow melt or wind.

.2 Install silt fencing.

.3 Maintain silt fencing at a height of no less than 16 inches above grade, and no greater than 32 inches.

.4 Extend geotextile filter fabric 6 inches below grade, and return 6 inches towards the opposite direction of flow.

.5 Space posts not further than 72 inches apart.

.6 Limit operation of vehicles on site to paved surfaces or temporary gravel surfaces in order to avoid the disturbing soil unless otherwise discussed and agreed to by Owner and Consultant.

3.2 MUNICIPAL STORM WATER

.1 Protect catch basins, drains, culverts and other points of entry into municipal storm water collection systems.

.2 Each Day: Inspect for erosion and sediment control measures, to ensure proper functions are not damaged.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Recording of subsurface conditions found.

.2 Requirements and limitations for cutting and patching the Work.

1.2 RELATED SECTIONS

.1 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 REFERENCES

.1 Owner's identification of existing survey control points and property limits.

1.4 SUBSURFACE CONDITIONS

.1 Promptly notify Consultant in writing if discovered surface or subsurface conditions at Place of Work differ materially from those indicated in Contract Documents.

.2 Advise the Consultant of a reasonable assumption of probable conditions when determined.

.3 After prompt investigation, should Consultant determine that conditions do differ materially, instructions will be issued for changes in Work as provided in Changes or Change Orders by Consultant.

1.5 EXAMINATION

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

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

.3 Beginning of cutting or patching means acceptance of existing conditions.

1.6 PREPARATION

.1 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

.2 Provide protection from elements for areas which may be exposed by uncovering work; maintain excavations free of water.

1.7 EXISTING SERVICES

.1 Before commencing work, establish location and extent of service lines in area of Work and notify Consultant of findings.

.2 Remove abandoned service lines within 6 ft of structures. Cap or seal lines at cut-off points as directed by Consultant.

1.8 LOCATION OF EQUIPMENT AND FIXTURES

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

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

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

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

1.9 SURVEY RECORD

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

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

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

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Submittal requirements associated with connecting to new and existing facilities.

.2 Execution requirements for all Work.

1.2 RELATED SECTIONS

.1 Section 01 70 00 - Examination and Preparation.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 SUBMITTALS - ATTACHING TO EXISTING WORK

.1 Submit written request in advance of cutting or alteration which affects:

- .1 Structural integrity of any element of Project.
- .2 Integrity of weather-exposed or moisture-resistant elements.
- .3 Efficiency, maintenance, or safety of any operational element.
- .4 Visual qualities of sight-exposed elements.
- .5 Work of Owner or separate contractor.

.2 Include in request:

- .1 Identification of Project.
- .2 Location and description of affected Work.
- .3 Statement on necessity for cutting or alteration.
- .4 Description of proposed Work, and products to be used.
- .5 Alternatives to cutting and patching.
- .6 Effect on Work of Owner or separate contractor.
- .7 Written permission of affected separate contractor.
- .8 Date and time work will be executed.

1.4 TOLERANCES

.1 Monitor fabrication and installation tolerance control of Products to produce acceptable Work.

.2 Do not permit tolerances to accumulate beyond effective or practical limits.

.3 Comply with manufacturers' tolerances. In case of conflict between manufacturers' tolerances and Contract Documents, request clarification from Consultant before proceeding.

.4 Adjust Products to appropriate dimensions; position and confirm tolerance acceptability, before permanently securing Products in place.

1.5 EXECUTION

.1 Execute cutting, fitting, and patching to complete the Work.

.2 Perform all required excavation and fill to complete the Work.

.3 Fit several parts together, to integrate with other Work.

.4 Uncover Work to install ill-timed Work.

.5 Remove and replace defective or non-conforming Work.

.6 Remove samples of installed Work for testing, if not designated in the respective Section as remaining as part of the Work.

.7 Provide openings in non-structural elements of Work for penetrations of associated electrical, mechanical Work. Limit opening dimensions to minimal sizes required, and performed in a neat and clean fashion.

.8 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

.9 Employ qualified workers to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.

.10 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry or concrete work without prior approval.

.11 Restore work with new products in accordance with requirements of Contract Documents.

.12 Fit Work reasonably close to opening size to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. Provide and install sealant for airtight closure.

.13 Re-finish surfaces to match adjacent finishes: For continuous surfaces re-finish to nearest intersection; for an assembly, re-finish entire unit.

.14 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Requirements and limitations for cutting and patching of Work.

1.2 RELATED SECTIONS

.1 Section 01 10 00 - Summary of Work

.2 Section 01 32 00 - Construction Progress Documentation: Submittals and scheduling.

.3 Individual Product Specification Sections:

- .1 Cutting and patching incidental to work of the section.
- .2 Advance notification to other sections of openings required in Work of those sections.
- .3 Limitations on cutting structural members.

1.3 SUBMITTALS

.1 Submit written request in advance of cutting or alteration which affects:

- .1 Structural integrity of any element of Project.
- .2 Integrity of weather exposed or moisture resistant element.
- .3 Efficiency, maintenance, or safety of any operational element.
- .4 Visual qualities of sight exposed elements.
- .5 Work of Owner or separate contractor.

.2 Include in request:

- .1 Identification of Project.
- .2 Location and description of affected Work.
- .3 Necessity for cutting or alteration.
- .4 Description of proposed Work and Products to be used.
- .5 Alternatives to cutting and patching.
- .6 Effect on work of Owner or separate contractor.
- .7 Written permission of affected separate contractor.
- .8 Date and time work will be executed.

Part 2 Products

2.1 MATERIALS

.1 Primary Products: Those required for original installation.

.2 Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 25 00.

Part 3 Execution

3.1 EXAMINATION

.1 Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.

.2 After uncovering existing Work, assess conditions affecting performance of work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

.1 Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage. Engineering of temporary supports shall be at the cost of the Contractor.

.2 Provide protection from elements for areas which may be exposed by uncovering work.

.3 Maintain excavations free of water.

3.3 CUTTING

.1 Execute cutting and fitting including excavation and fill to complete the Work.

.2 Uncover work to install improperly sequenced work.

.3 Remove and replace defective or non-conforming work.

.4 Remove samples of installed work for testing when requested.

.5 Provide openings in the Work for penetration of mechanical and electrical work.

.6 Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

.7 Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

3.4 PATCHING

.1 Execute patching to complement adjacent Work.

.2 Fit Products together to integrate with other Work.

.3 Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.

.4 Employ original installer to perform patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.

.5 Restore work with new Products in accordance with requirements of Contract Documents.

.6 Fit work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.7 Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Progressive cleaning.

.2 Cleaning prior to acceptance.

1.2 RELATED SECTIONS

.1 Section 01 35 41 - Waste Managing and Disposal.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

Part 2 Products

2.1 CLEANING MATERIALS

.1 Cleaning Agents and Materials: Low VOC content.

Part 3 Execution

3.1 PROGRESSIVE CLEANING

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris.

.2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.

.3 Clear snow and ice from area of construction, bank or pile snow in designated areas only.

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

.5 Containers:

.1 Provide on-site steel framed, hinged lid containers for collection of waste materials and debris.

.6 Remove waste material and debris from site and deposit in waste container at end of each working day.

.7 Dispose of waste materials and debris off site.

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

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

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

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

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

3.2 CLEANING PRIOR TO ACCEPTANCE

.1 Prior to applying for Substantial Performance of the Work, 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 materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.

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

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

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

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

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

.10 Clean and polish surface finishes, as recommended by manufacturer.

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

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

.13 Remove dirt and other disfiguration from exterior surfaces.

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

.15 Sweep and wash clean paved areas.

.16 Clean equipment and fixtures to a sanitary condition; clean filters of mechanical equipment.

.17 Clean roof surfaces, down-spouts, and drainage components.

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

.19 Remove snow and ice from access to facilities.

3.3 FINAL PRODUCT CLEANING

.1 Execute final cleaning prior to final project assessment. Refer to Section 01 74 00.

.2 Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces.

.3 Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

.4 Clean filters of operating equipment.

.5 Clean site; sweep paved areas, rake clean landscaped surfaces.

.6 Remove waste and surplus materials, rubbish, and construction facilities from the site.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Waste goals.

.2 Disposal of waste.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 00 – Cleaning and Waste Processing.

.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 DEFINITIONS

.1 Clean Waste: Untreated and unpainted; not contaminated with oils, solvents, sealants or similar materials.

.2 Construction and Demolition Waste: Solid wastes typically including but not limited to, building materials, packaging, trash, debris, and rubble resulting from construction, re-modelling, repair and demolition operations.

.3 Hazardous: Exhibiting the characteristics of hazardous substances including, but not limited to, ignitability, corrosiveness, toxicity or reactivity.

.4 Non-hazardous: Exhibiting none of the characteristics of hazardous substances, including, but not limited to, ignitability, corrosiveness, toxicity, or reactivity.

.5 Non-toxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

.6 Recyclable: The ability of a product or material to be recovered at the end of its life cycle and re-manufactured into a new product for reuse by others.

.7 Recycle: To remove a waste material from the Project site to another site for re-manufacture into a new product for reuse by others.

.8 Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

.9 Return: To give back reusable items or unused products to vendors for credit.

.10 Reuse: To reuse a construction waste material in some manner on the Project site.

.11 Salvage: To remove a waste material from the Project site to another site for resale or reuse by others.

.12 Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

.13 Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

.14 Toxic: Poisonous to humans either immediately or after a long period of exposure.

.15 Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

.16 Volatile Organic Compounds (VOC's): Chemical compounds common in and emitted by many building products over time through outgassing:

.1 Solvents in paints and other coatings.

.2 Wood preservatives; strippers and household cleaners.

.3 Adhesives in particle board, fibreboard, and some plywood; and foam insulation.

.4 When released, VOC's can contribute to the formation of smog and can cause respiratory tract problems, headaches, eye irritations, nausea, damage to the liver, kidneys, and central nervous system, and possibly cancer.

.17 Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

.18 Waste Management Plan: A Project-related plan for the collection, transportation, and disposal of the waste generated at the construction site. The purpose of the plan is to ultimately reduce the amount of material being landfilled.

1.4 SUBMITTAL

.1 Section 01 33 00: Submission procedures.

1.5 OWNER WASTE MANAGEMENT GOALS

.1 Minimize waste disposal to landfills.

1.6 STORAGE, HANDLING AND PROTECTION

.1 Store, materials to be reused, recycled and salvaged in locations as required for dry and safe material storage.

.2 Unless specified otherwise, materials for removal do not become Contractor's property.

.3 Protect, stockpile, store and catalogue salvaged items.

.4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.

.5 Protect structural components not removed for demolition from movement or damage.

.6 Support affected structures. If safety of building is endangered, cease operations and immediately notify Consultant.

.7 Protect surface drainage, storm sewers, sanitary sewers, and utility services from damage and blockage.

1.7 SCHEDULING

.1 Coordinate work with other activities at site to ensure timely and orderly progress of the work.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 PREPARATION

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

3.2 USE OF SITE AND FACILITIES

.1 Execute work with least possible interference or disturbance to normal use of premises.

.2 Maintain security measures established by existing facility.

.3 Provide temporary security measures as approved by Consultant.

3.3 DISPOSAL OF WASTE

.1 Burying of rubbish and waste materials is prohibited unless approved by authority having jurisdiction.

.2 Disposal of waste, volatile materials, mineral spirits, oil, paint thinner into waterways, storm, or sanitary sewers is prohibited.

3.4 CLEANING

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

.2 Clean-up work area as work progresses.

.3 Source separate materials to be reused/recycled into specified sort areas.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Inspections and declarations.

.2 Closeout submittals.

.3 Operation and maintenance manual format.

.4 Contents each volume.

.5 Recording actual site conditions.

.6 Record (as-built) documents and samples.

.7 Record documents.

.8 Final survey.

.9 Warranties and bonds.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 45 00 - Quality Control.

.3 Section 01 79 00 - Demonstration and Training.

.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 INSPECTIONS AND DECLARATIONS

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

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

.2 Request Consultant's Inspection.

.2 Consultant's Inspection: Consultant and Contractor will perform inspection of Work to identify defects or deficiencies. Correct defective and deficient Work accordingly.

.3 Completion: Submit written certificate that the following have been performed:

.1 Work has been completed and inspected for compliance with Contract Documents.

.2 Defects have been corrected and deficiencies have been completed.

.3 Equipment and systems have been tested, adjusted, balanced and are fully operational.

.4 Certificates required by authorities having jurisdiction have been submitted.

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

.6 Work is complete and ready for Final Inspection.

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

.5 Declaration of Substantial Performance: When Owner and Consultant considers deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for Substantial Performance of the Work.

.6 Commencement of Warranty Periods: The date of Substantial Performance of the Work shall be the date for commencement of the warranty period.

.7 Commencement of Lien Periods: The date of publication of the certificate of Substantial Performance of the Work shall be the date for commencement of the lien period, unless required otherwise by the lien legislation applicable at the Place of the Work.

.8 Final Payment: When Owner and Consultant considers final deficiencies and defects have been corrected and it appears requirements of Contract have been completed, make application for final payment.

.9 Payment of Hold-back: After issuance of certificate of Substantial Performance of the Work, submit an application for payment of hold-back amount.

1.4 CLOSEOUT SUBMITTALS

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

.2 Copy will be returned after final inspection with Consultant's comments.

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

.4 Two (2) weeks prior to Substantial Performance of the Work, submit to the Consultant, four (4) final copies of operating and maintenance manuals in Canadian English unless otherwise requested by Owner.

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

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

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

.8 Pay costs of transportation.

1.5 OPERATION AND MAINTENANCE MANUAL FORMAT

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

.2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 8.5 x 11 inch with spine and face pockets.

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

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

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

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

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

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

.9 Provide 1:1 scaled CAD files in *.dwg AutoCAD Release 2018 format on flash drive.

1.6 CONTENTS - EACH VOLUME

.1 Table of Contents: Provide:

.1 Title of project.

.2 Date of submission.

.3 Names, addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.

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

.2 For each product or system, list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.3 Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00.

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

.5 Certificate of Acceptance: Relevant certificates issued by authorities having jurisdiction, including code compliance certificate, life safety systems performance certificate, pressure vessel acceptance.

.6 Training: Refer to Section 01 79 00.

1.7 RECORDING ACTUAL SITE CONDITIONS

.1 Record information on set of black line opaque drawings, and within the Project Manual, provided by Consultant upon request.

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

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

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

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

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

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

.4 Field changes of dimension and detail.

.5 Changes made by change orders.

.6 Details not on original Contract Drawings.

.7 References to related shop drawings and modifications.

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

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

.2 Changes made by Addenda and change orders.

.6 Other Documents: Maintain manufacturer's certifications, inspection certifications, field test records required by individual specifications sections.

1.8 RECORD (AS-BUILT) DOCUMENTS AND SAMPLES

.1 In addition to requirements in General Conditions, maintain at the site for Consultant and Owner, one (1) record copy of:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Change Orders and other modifications to the Contract.

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

.6 Field test records.

.7 Inspection certificates.

.8 Manufacturer's certificates.

.2 Store as-built documents and samples in field office or other location on site as approved by Consultant apart from documents used for construction. Provide files, racks, and secure storage as required for documentation.

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

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

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

1.9 RECORD DOCUMENTS

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

.1 Drawings: AutoCAD and *.pdf.

.2 Specifications: Adobe Acrobat.

.2 Mark revised documents as RECORD DOCUMENTS. Include all revisions, with special emphasis on structural steel, electrical, reinforced concrete, mechanical.

.3 Employ a competent computer draftsperson to indicate changes on the electronic set of record drawings. Provide updated Record Drawings in AutoCAD and Adobe Acrobat.

.4 Employ a competent specification writer to indicate changes to the electronic set of record specifications. Provide updated record specifications in Adobe Acrobat on USB or electronic transfer.

.5 Submit completed record documents to Owner and Consultant on USB or electronic transfer, accompanied by one (1) hard copy set.

1.10 FINAL SURVEY

.1 Submit final site survey certificate in accordance with Section 01 70 00, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

.2 Inaccurate or neglectful information shall become a liability of the Contractor.

1.11 WARRANTIES AND BONDS

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

.2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

.3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) days after completion of the applicable item of work.

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

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

.6 Co-execute submittals when required.

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

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Equipment and systems.

.2 Materials and finishes.

.3 Spare parts.

.4 Maintenance manuals.

.5 Special tools.

.6 Storage, handling and protection.

1.2 RELATED SECTIONS

.1 Section 01 45 00 - Quality Control.

.2 Section 01 78 40 – Maintenance Requirements.

.3 Section 01 91 00 - Commissioning.

1.3 EQUIPMENT AND SYSTEMS

.1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed colour coded wiring diagrams.

.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

.7 Include manufacturer's printed operation and maintenance instructions.

.8 Include sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide Contractor's coordination Drawings, with installed colour coded piping diagrams.

.12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

.13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.14 Include test and balancing reports as specified in Section 01 45 00.

.15 Additional requirements: As specified in individual specification sections.

Part 2 Products

2.1 MATERIALS AND FINISHES

.1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

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

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

2.2 SPARE PARTS

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

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

.3 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.

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

2.3 MAINTENANCE MATERIALS

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

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

.3 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.

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

2.4 SPECIAL TOOLS

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

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

.3 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.

Part 3 Execution

3.1 DELIVER TO SITE

.1 Deliver to site or other location as directed by Owner; place and store.

3.2 STORAGE, HANDLING AND PROTECTION

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

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

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

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

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

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Procedures for demonstration and instruction of Products, equipment and systems to Owner's personnel.

.2 Seminars and demonstrations.

1.2 RELATED SECTIONS

.1 Section 01 91 00 - Commissioning.

.2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 DESCRIPTION

.1 Demonstrate scheduled operation and maintenance of equipment, building envelope, systems to Owner's personnel two (2) weeks prior to date of substantial performance.

.2 Owner will provide list of personnel to receive instructions, and will coordinate their attendance at agreed-upon times.

1.4 COMPONENT DEMONSTRATION

.1 Manufacturer to provide authorized representative to demonstrate operation of equipment and systems.

.2 Instruct Owner's personnel, and provide written report that demonstration and instructions have been completed.

1.5 SUBMITTALS

.1 Submit schedule of time and date for demonstration of each item of equipment and each system two (2) weeks prior to designated dates, for Consultant's approval.

.2 Submit reports within one (1) week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.

.3 Give time and date of each demonstration, with list of persons present.

1.6 CONDITIONS FOR DEMONSTRATIONS

.1 Equipment has been inspected and put into operation in accordance with mechanical and electrical drawings and specifications.

.2 Testing, adjusting, and balancing have been performed in accordance with mechanical drawings and specifications, and equipment and systems are fully operational.

.3 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 PREPARATION

.1 Verify that suitable conditions for demonstration and instructions are available.

.2 Verify that designated personnel are present.

.3 Prepare agendas and outlines.

.4 Establish seminar organization.

.5 Explain component design and operational philosophy and strategy.

.6 Develop equipment presentations.

.7 Present system demonstrations.

.8 Accept and respond to seminar and demonstration questions with appropriate answers.

3.2 PREPARATION OF AGENDAS AND OUTLINES

.1 Prepare agendas and outlines including the following:

- .1 Equipment and systems to be included in seminar presentations.
- .2 Name of companies and representatives presenting at seminars.
- .3 Outline of each seminar's content.
- .4 Time and date allocated to each system and item of equipment.
- .5 Provide separate agenda for each system.

3.3 SEMINAR ORGANIZATION

.1 NA.

3.4 EXPLANATION OF DESIGN STRATEGY

.1 Explain design philosophy of each system. Include following information:

- .1 An overview of how system is intended to operate.
- .2 Description of design parameters, constraints and operational requirements.
- .3 Description of system operation strategies.
- .4 Information to help in identifying and troubleshooting system problems.

3.5 DEMONSTRATION AND INSTRUCTIONS

.1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at agreed upon times, at the equipment, designated location.

.2 Instruct personnel in all phases of operation and maintenance using operation and maintenance manuals as the basis of instruction.

.3 Instruct personnel on control and maintenance of sensory equipment and operational equipment associated with maintaining energy efficiency and longevity of service.

.4 Review contents of manual in detail to explain all aspects of operation and maintenance.

.5 Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instructions.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Alteration project procedures.

.2 Removal of designated building equipment and fixtures.

.3 Removal of designated construction.

.4 Disposal of materials, Storage of removed materials.

.5 Identification of utilities.

.6 Refer to items scheduled at end of section and as indicated in Drawings.

1.2 RELATED SECTIONS

.1 Refer to Drawings for mechanical, electrical, structural and civil demolition scope and specifications.

1.3 ALTERATION PROJECT PROCEDURES

.1 Materials: As specified in Product sections; match existing Products and work for patching and extending work.

.2 Employ skilled and experienced installer to perform alteration work.

.3 Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

.4 Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring Products and finishes to original condition.

.5 Refinish existing visible surfaces to remain in renovated rooms and spaces, to renewed condition for each material, with a neat transition to adjacent finishes.

.6 Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

.7 When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Consultant for review.

.8 Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition; to Consultant for review.

.9 Patch or replace portions of existing surfaces which are damaged, lifted, discoloured, or showing other imperfections.

.10 Finish surfaces as specified in individual Product sections.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Sequencing: Sequence work to requirements of Section 01 10 00.

.1 Sequence activities to demolish the Work is the responsibility of the Contractor in relation to the construction schedule and new work.

.2 Scheduling: Schedule work to requirements of Section 01 31 00.

.1 Describe demolition removal procedures and schedule.

.3 Perform noisy, malodorous, dusty work in accordance with times laid out in Section 01 14 00 and in accordance with all applicable codes and regulations.

1.5 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Shop Drawings: Indicate demolition, removal sequence and location of salvageable items; location and construction of temporary work, temporary shoring, temporary bracing.

.1 Temporary shoring and/or bracing to be engineered by Contractor's designated design professional having stamping authority in project's province at no additional cost to the Owner.

1.6 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

.2 Record Documentation: Accurately record actual locations of capped utilities, subsurface obstructions.

1.8 REGULATORY REQUIREMENTS

.1 Conform to applicable code for demolition work, dust control, products requiring electrical disconnection, reconnection.

.2 Obtain required permits from authorities.

.3 Do not close or obstruct egress width to any building or site exit.

.4 Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

1.9 SITE CONDITIONS

.1 Conduct demolition to minimize interference with adjacent building areas.

.2 Cease operations immediately if structure appears to be in danger and notify Consultant. Do not resume operations until directed.

Part 2 Products

2.1 MATERIALS

.1 Not Used.

Part 3 Execution

3.1 PREPARATION

.1 Provide, erect, and maintain temporary barriers at locations indicated and in accordance with all local and provincial authorities having jurisdiction and health and safety requirements.

.2 Erect and maintain weatherproof closures for exterior openings.

.3 Erect and maintain temporary partitions to prevent spread of dust, odours, and noise to permit continued Owner occupancy.

.4 Protect existing materials which are not to be demolished.

.5 Prevent movement of structure; provide bracing and shoring.

.6 Notify affected utility companies before starting work and comply with their requirements.

.7 Mark location and termination of utilities.

.8 Provide appropriate temporary signage – e.g. signage for exit or building egress.

3.2 DEMOLITION

.1 Disconnect remove, cap, identify designated utilities within demolition areas.

.2 Demolish in an orderly and careful manner. Protect existing supporting structural members.

.3 Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.

.4 Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

.5 Remove temporary Work.

3.3 SCHEDULES

.1 Protect the following materials and equipment remaining:

.1 Splashpad sign – reinstall on construction hoarding / fencing adjacent to splash pad area.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Finishing slabs-on-grade.

.2 Surface treatment with sealer, slip resistance.

1.2 RELATED SECTIONS

.1 Refer to Structural drawings and specifications.

1.3 REFERENCES

.1 CSA-A23.1-09/A23.2-14 - Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.

.2 ACI 302.1R-15 - Guide for Concrete Floor and Slab Construction.

.3 ASTM E1155M-14 - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers.

.4 ASTM E1155-14 - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination: Coordinate with concrete floor placement and concrete floor curing, and other work having a direct bearing on work of this section.

1.5 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data on concrete epoxy coating, compatibilities, and limitations.

.3 Samples: Physical sample 4 inches x 4 inches in size indicating finish, color and slip resistance of concrete epoxy coating.

1.6 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

.2 Maintenance Data: Provide data on maintenance renewal of applied coatings.

1.8 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000, ISO 14000 certification requirements.

.2 Perform Work in accordance with CSA-A23.1/A23.2.

.3 Maintain one (1) copy of document on site.

.4 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

1.9 DELIVERY, STORAGE, AND PROTECTION

.1 Transport, handle, store, and protect products.

.2 Deliver materials in manufacturer's packaging including application instructions.

1.10 SITE CONDITIONS

.1 Temporary Lighting: Minimum 200 W light source, placed 8 ft above the floor surface, for each 425 sq ft of floor being finished.

.2 Do not finish floors until temperature is acceptable per manufacturer's guidelines.

.3 Temporary Heat: Ambient temperature of 50 degrees F minimum.

.4 Ventilation: Sufficient to prevent injurious gases from temporary heat or other sources affecting concrete.

Part 2 Products

2.1 SEALER (BASE BID)

.1 Heavy-duty, low VOC, non-yellowing concrete sealer that is moisture resistant, for use in above ground horizontal surfaces.

.1 Product: Perma-Crete Plex-Seal Exterior Clear Sealer, manufactured by Dulux.

.2 Color: Clear, non-yellowing

.3 Sheen: Manufacturer's Standard Low-Sheen

2.2 PROVISIONAL PRICE - EPOXY COATINGS

.1 Heavy-duty, seamless, textured, aggregate-filled, high impact-resistance, high slip resistance, low-sheen, epoxy-based floor coating and moisture barrier system.

.1 Product: Sikafloor 1610 paired with Sikafloor Morritex Broadcast System, manufactured by Sika.

.2 Provide standard grit and two top coats.

.3 Color: As selected by Architect form Manufacturer's full range.

.4 Sheen: As selected by Architect form Manufacturer's full range.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 70 00: Verify existing conditions before starting work.

.2 Verify that floor surfaces are acceptable to receive the work of this section.

3.2 FLOOR FINISHING

.1 Finish concrete floor surfaces to CSA-A23.1/A23.2.

.2 Steel trowel surfaces which are scheduled to be sealed, exposed.

.3 In areas with floor drains, maintain design floor elevation at walls; slope surfaces uniformly to drains at nominal 3/8 inch per ft.

3.3 FLOOR SURFACE TREATMENT

.1 Apply sealer finish to manufacturer's written instructions on floor surfaces.

.2 Provisional Price: Apply epoxy finish to manufacturer's written instructions on floor surfaces.

3.4 TOLERANCES

.1 Maximum Variation of Surface Flatness For Exposed Concrete Floors: 1/4 inch in 10 ft.

.2 Measure for floor flatness (FF) and floor levelness (FL) tolerances for floors to ASTM E1155M, ASTM E1155, within forty-eight (48) hours after slab installation.

.3 Finish concrete to achieve the following tolerances:

.1 Exposed to View and Foot Traffic: F (FF) 35 and F (FL) 25.

.4 Correct the slab surface if the actual F (FF) or F (FL) number for the floor installation measures less than required.

.5 Correct defects in the defined traffic floor by grinding or removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.5 SCHEDULES

.1 103: Sealer (Base Bid), Provisional Price - Floor Epoxy Coated

.2 104: Sealer (Base Bid), Provisional Price - Floor Epoxy Coated

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Concrete Masonry Units:

.1 Concrete block units.

1.2 RELATED SECTIONS

.1 Refer to structural Drawings and specifications.

1.3 REFERENCES

.1 CAN/CSA-A165 Series-04 (R2014) - Standards on Concrete Masonry Units.

.2 CAN/CSA-A371-14 - Masonry Construction for Buildings.

.3 CSA-S304.1-04 (R2010) - Design of Masonry Structures.

1.4 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

1.5 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

Part 2 Products

2.1 CONCRETE BLOCK MASONRY UNITS

.1 Concrete Block Masonry Units (CMU): Refer to structural Drawings and specifications.

.2 Architectural Concrete Block Masonry Units: Refer to structural drawings and specifications, appearance to the following design:

.1 Colour: As selected by architect from manufacturer's full range of integral coloured block. Provide samples to construction site for architect's review.

.2 Ribbed and split face with six (6) vertical ribs.

.3 Provisional Pricing Alternative:

.1 Integral coloured block, colour as selected by architect from manufacturer's full range of integral coloured block.

.2 Split face.

.3 Manufacturers - Concrete Block Masonry Units.

.1 Boehmer Block; Product: Standard Block.

.2 Richvale York Block Inc.; Product: Concrete Normal Block.

.3 Substitutions: Refer to Section 01 25 00.

.4 Manufacturers – Architectural Concrete Block Masonry Units.

.1 Richvale York Block Inc.; Product: Split Face 6 Rib Fluted.

.2 Boehmer Block; Product: 6 Rib Split Face Block.

.3 Substitutions: Refer to Section 01 25 00.

2.2 FABRICATION

.1 Manufacture masonry units to CSA-A371, CSA-S304.1.

Part 3 Execution

3.1 INSTALLATION

.1 Install masonry units as specified in architectural and structural Drawings and specifications.

3.2 SCHEDULES

.1 Concrete Block Masonry Units: Interior Walls

.2 Architectural Concrete Block Masonry Units: Exterior Walls

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Wall, and ceiling framing.

.2 Sheathing.

.3 Miscellaneous rough carpentry, including:

- .1 Wood blocking, nailers.
- .2 Wood furring.

.4 Fasteners.

.5 Preservative treatment.

1.2 RELATED SECTIONS

.1 Refer to structural Drawings and specifications.

1.3 REFERENCES

.1 ASTM A123/A123M-15 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

.2 ASTM A153/A153M-09 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

.3 ASTM A653/A653M-13 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.4 CANPLY (Canadian Plywood Association) - Canadian Plywood Handbook.

.5 CAN/CSA-O80 Series-08 (R2012) - Wood Preservation.

- .1 CSA-O80.1-15 - Specification for Treated Wood.
- .2 CSA-O80.3-15 - Preservative Formulations.

.6 CSA-O121-08 (R2013) - Douglas Fir Plywood.

.7 CSA-O151-09 (R2014) - Canadian Softwood Plywood.

.8 CSA-O153-13 - Poplar Plywood.

.9 CSA-O325-07 (R2012) - Construction Sheathing.

.10 NLGA (National Lumber Grades Authority) - Standard Grading Rules for Canadian Lumber, 2014 Edition.

1.4 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide technical data on wood preservative materials.

1.5 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

1.7 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000, ISO 14000 certification requirements.

.2 Perform Work in accordance with the following agencies:

.1 Lumber Grading Agency: Certified by NLGA.

.2 Plywood Grading Agency: Certified by CANPLY.

.3 Wood Based Panel Products: Marked with a recognized, visible grade stamp showing Grade or span rating as required.

.3 Pressure Preservative Treated Wood: Marked with certification mark authorized by the Canadian Wood Preservers Bureau (CWPB) indicating producer, preservative type, retention and Use Category (UC).

1.8 DELIVERY, STORAGE, AND PROTECTION

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Store plywood panels flat and level.

.3 Keep finish faces inward and cover stacks to protect from bumping and abrasion.

.4 Protect tongue and groove plywood panel edges and corners.

.5 Protect panels from sunlight, water or excessive humidity.

.6 Store materials off the ground, covered with weatherproof tarps; indoors in dry, well-ventilated area prior to being needed on site.

Part 2 Products

2.1 LUMBER MATERIALS

.1 Dimension Lumber: CSA-O141, softwood lumber unless indicated otherwise; graded to NLGA Standard Grading Rules for Lumber.

.1 Studs: Grade No. 2 or better, species: Spruce-Pine-Fir species.

.2 Furring, Blocking, Nailing Strips: Grade No. 2 or better, species: Spruce-Pine-Fir; exterior wood pressure preservative treated.

2.2 PANEL MATERIALS

.1 Plywood: CSA-O121, CSA-O151, CSA-O153 as indicated in schedule below, CANPLY certified and graded, meeting the requirements of CSA-O325.

.1 Wall Sheathing: CSA-O151, CSA-O121, CSA-O153, Sheathing grade, 3/4 inch thickness, tongue and groove edges.

2.3 FASTENERS AND ANCHORS

.1 Screws and Nails: Galvanized steel, Stainless steel Type 304, Stainless steel Type 316; type and size suitable for application as specified in structural drawings and specifications.

.2 Anchors: Galvanized steel, Stainless steel Type 304, Stainless steel Type 316; Type as specified in structural drawings and specifications.

2.4 CONNECTORS AND PLATES

.1 Steel Plate Connectors: Galvanized steel, Stainless steel Type 304, Stainless steel Type 316, type and size suitable for application.

.2 Bearing Plates: Galvanized steel, Stainless steel Type 304, Stainless steel Type 316, size and thickness as indicated.

.3 Joist Hangers: Galvanized steel, Stainless steel Type 304, Stainless steel Type 316, sized to suit framing conditions.

2.5 MISCELLANEOUS ACCESSORIES

.1 Sill Gasket (top of block wall): 1/4 inch thick, Closed cell polyethylene foam, Closed cell urethane foam, plate width as indicated in Drawings.

.2 Flexible Flashing: Rubberized-asphalt compound, self-adhesive, bonded to a high-density, polyethylene film, minimum thickness 25 mil. Compatible primer recommended by membrane manufacturer.

.3 Adhesives: Waterproof adhesive, approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

.4 Building Wrap: Spun bonded polyolefin building wrap sheeting.

.1 Commercial-grade.

.5 Polyethylene: Sheet polyethylene, 0.25 mm thick.

2.6 FINISHES

.1 Galvanized Coatings for Untreated Wood:

.1 Connectors: Hot dip galvanized to ASTM A653/A653M, zinc coating designation, or stainless steel.

.2 Bearing Plates, Angles: Hot dip galvanized after fabrication to ASTM A123/A123M, or stainless steel.

.3 Fasteners and Anchors: Hot dip galvanized to ASTM A153/A153M.

.2 Galvanized Coating for Use with Treated Wood and High Humidity Areas:

.1 Connectors: Hot dip galvanized to ASTM A653/A653M, zinc coating designation, or stainless steel.

.2 Bearing Plates, Angles: Hot dip galvanized after fabrication to ASTM A123/A123M, or stainless steel.

.3 Fasteners and Anchors: Hot dip galvanized to ASTM A153/A153M or stainless steel.

2.7 PRESERVATIVE TREATMENT

.1 Wood Preservative (Pressure Treatment): CAN/CSA-O80 Series, and in accordance with Table 2 - Use Categories for Specific Products, Uses, and Exposures of CSA-O80.1.

.1 UC1: Interior construction, above-ground and dry applications; use inorganic boron (SBX) preservative.

.2 UC2: Interior construction, above-ground and potentially damp applications; use inorganic boron (SBX) preservative, waterborne alkali-based, type ACQ, waterborne alkali-based, type CA.

.3 UC3.1: Exterior construction, protected, above-ground applications (coated millwork, cants, siding, trim); use waterborne alkali-based, type ACQ, waterborne alkali-based, type CA, waterborne acid-based, type CCA.

.2 Wood Preservative (Surface Application): CSA-O80.3, copper naphthenate.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 70 00: Verify existing conditions before starting work.

.2 Verify that site conditions are ready to receive work and opening dimensions are as indicated on Shop Drawings, instructed by the manufacturer.

3.2 FRAMING

.1 Set structural members level and plumb, in correct position.

.2 Make provisions for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in true alignment until completion of erection and installation of permanent bracing.

.3 Place horizontal members, crown side up.

.4 Construct framing members full length without splices.

.5 Double members at openings over 36 inches wide unless otherwise approved by Consultant. Space short studs over and under opening to stud spacing.

.6 Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists. Frame rigidly into joists.

.7 Bridge joists, framing in excess of 8 ft span as detailed, or at mid-span if not detailed. Fit solid blocking, bridging at ends of members.

.8 Place full width continuous sill flashings under framed walls on cementitious foundations, walls. Lap flashing joint 4 inches.

.9 Place sill gasket directly on sill flashing at exterior locations and cementitious foundation at interior locations. Puncture gasket clean and fit tight to protruding foundation, wall anchor bolts or other anchorage devices.

.10 Coordinate installation of wood decking.

3.3 SHEATHING

.1 Provide solid edge blocking between sheets, Fully engage tongue and groove edges.

.2 Secure wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered.

3.4 SHEATHING PAPER

.1 Building Wrap: Install building wrap to manufacturer's written instructions.

.1 Tape joints, edges and penetrations with tape.

.2 Extend building wrap into openings and seal with tape.

3.5 FLEXIBLE FLASHING

.1 Install flexible flashing to manufacturer's written instructions.

.2 Lap seams and junctions with other materials minimum 4 inches.

.3 Lap flashing over sheathing paper at bottom and sides of wall openings; lap sheathing paper over flashing at head of wall openings.

3.6 SITE APPLIED WOOD TREATMENT

.1 Apply preservative treatment to manufacturer's written instructions.

.2 Brush apply two (2) coats of preservative treatment on wood requiring cutting or drilling after treatment and on wood in contact with cementitious materials unless otherwise approved by Consultant.

.3 Allow preservative to dry prior to erecting members.

3.7 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Framing Members: 1/4 inch from true position, maximum.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Face panels.

.2 Liner panels.

.3 Soffit panels.

.4 Accessory components.

1.2 RELATED SECTIONS

.1 Section 07 26 00 - Vapour Retarders.

.2 Section 07 27 00 - Air Barriers.

1.3 DEFINITIONS

.1 Delegated Design Professional: The specialist or supporting design professional contracted to the contractor, fabricator or manufacturer to design and/or review specific building components or sub-components, and provide Shop Drawings and Delegated Design Submittals to meet the requirements of authorities having jurisdiction..

1.4 REFERENCES

.1 ASTM B209M-14 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

.2 ASTM B209-14 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

.3 ASTM C612-14 - Standard Specification for Mineral Fiber Block and Board Insulation.

.4 ASTM C665-12 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

.5 ASTM C834-14 - Standard Specification for Latex Sealants.

.6 ASTM C920-14a - Standard Specification for Elastomeric Joint Sealants.

.7 ASTM D226/D226M-09 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.

.8 ASTM E84-15a - Standard Test Method for Surface Burning Characteristics of Building Materials.

.9 CAN/ULC-S702-14 - Standard for Mineral Fibre Thermal Insulation for Buildings.

1.5 SYSTEM DESCRIPTION

.1 Wall System: Preformed and prefinished single skin metal siding panels; fastened to wood framing system with subgirt system.

.2 Soffit System: Preformed and prefinished single skin profiled metal panels; fastened to wood framing system with subgirt system with concealed fastening system.

1.6 PERFORMANCE AND DESIGN CRITERIA

.1 Delegated Design: Design wall panels and connections by a licensed design professional using performance and design criteria as indicated.

.2 Loads: Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of panel:

.1 As calculated in accordance with applicable code.

.3 Maximum Allowable Deflection of Aluminum Panel: L/60 of span.

.4 Thermal Movement: Provide for expansion and contraction within system components caused by a cycling temperature range of 20 degrees C, ambient; 40 degrees C over a 12-hour period without overstressing components causing buckling, failure of connections, or other detrimental effects.

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

.6 Seismic Loads: Design and size components to withstand seismic loads and sway displacement as calculated in accordance with applicable code.

.7 Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.

.8 Thermal Barrier: Provide continuity of thermal barrier at building enclosure elements.

.9 Vapour Retarder: Provide continuity of vapour retarder at building enclosure elements.

.10 Air Seal: Provide continuity of air barrier seal at building enclosure elements.

1.7 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other Work having a direct bearing on Work of this section.

.2 Coordinate the Work for installation of vapour retarder, air barrier seals, weather barrier wrap.

.3 Coordinate the Work with installation of adjacent materials and work.

.3 Pre-Installation Meeting:

.1 Convene one (1) week before starting work of this section.

.2 Review construction schedule, material availability, personnel, equipment, facilities and other relevant issues to avoid unnecessary delays.

.3 Review methods and procedures related to panel installation, including manufacturer's written instructions.

1.8 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Shop Drawings:

.1 Indicate arrangement of cladding system, including dimensions, location and profile of joints, profiles of panels, types and locations of supports, fasteners, flashing, closures and all metal components related to cladding installation.

.2 Provide Shop Drawings stamped and signed by the delegated design professional.

.3 Samples:

.1 Samples for Selection: Submit samples of color chart showing manufacturer's full range of standard colors for selection.

.2 Samples for Verification: Submit samples, 4 x 4 inches showing cladding profile in each selected colour, finish and texture for final Consultant selection.

1.9 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Submit manufacturer's installation instructions, special handling criteria, installation sequence, and cleaning procedures.

.3 Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.

.4 Certificates: Provide product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

.5 Delegated Design Submittals:

.1 Submit documentation indicating compliance to performance/design criteria, signed and sealed by the delegated design professional responsible for their preparation.

.1 Design Data: Include material data, calculations and details.

.2 Letters of Assurance: Submit a letter or schedule of Assurance, Compliance, and/or Commitment before or after completion of work as required by authorities having jurisdiction.

1.10 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

.2 Maintenance Data: Submit maintenance data for cleaning and maintenance of panel finishes for incorporation into O & M manual specified in Section 01 78 10.

1.11 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000, ISO 14000 certification requirements.

.2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.3 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

.4 Delegated Design Professional Qualifications: Professional Structural Engineer experienced in design of this Work and licensed in the province where the project is located.

1.12 DELIVERY, STORAGE, AND PROTECTION

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.

.3 Store prefinished material off ground protected from weather, to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

.4 Prevent contact with materials which may cause discolouration or staining.

1.13 WARRANTY

.1 Section 01 78 10: Warranties.

.2 Provide a five (5) year warranty to include coverage for failure to meet specified requirements, including degradation of panel finish including colour fading caused by exposure to weather, water tightness, and integrity of seals.

Part 2 Products

2.1 MANUFACTURERS

.1 Wiedehopf; Product: Aluminum Composite Material (ACM) Panels

.2 Other acceptable manufacturers offering functionally and aesthetically equivalent products.

.1 Alpolic; Product: Aluminum Composite Material (ACM) Panels.

.3 Substitutions: Refer to Section 01 25 00.

.4 Provisional Pricing Alternate:

.1 Vicwest AD200R series

.2 Vertical installation

.3 Hidden Fastener Panel

.4 22 gauge panel

.5 Colour as selected from manufacturer’s full line of colours (non-metallic).

.6 Include for all necessary fasteners, trims and accessories as required for complete installation with no visible cut edge of panel.

2.2 ALUMINUM SHEET MATERIALS

.1 Aluminum Sheet: ASTM B209M coil sheet, manufacturer's standard alloy and temper for purpose intended.

2.3 ACCESSORIES

.1 Flashing and Trim: As required by manufacturer's written instructions for complete system, of same material, colour and gloss as cladding in exposed locations; aluminum material in non-exposed locations; preformed corner pieces, double back exposed edges.

.2 Closures: Manufacturer's standard metal closures and trims, to suit cladding profile.

.3 Gaskets: Manufacturer's standard type, suitable for use with system, permanently resilient; ultraviolet and ozone resistant; colour as selected, location as required by manufacturer.

.4 Sealants:

.1 Concealed Sealant: Tape or compound, non-skinning, non-drying, butyl rubber.

.2 Exposed Sealant: ASTM C920, silicone, ASTM C834, acrylic co-polymer, single component, type as recommended by manufacturer, colour to match cladding.

.5 Fasteners: Galvanized, Stainless steel, with exposed heads painted to match cladding. All fasteners should be hidden unless otherwise approved by Consultant.

.6 Field Touch-up Paint: As recommended by panel manufacturer.

.7 Bituminous Paint: Asphalt base.

.8 Expansion Joints: Same material, thickness and finish as exterior sheets type, of profile to suit system.

.9 Anchors: Galvanized steel.

2.4 COMPONENTS

.1 Cladding Panels: Aluminum Composite Material, cut, groove, bend and clip edges with concealed fasteners, panel joints designed for dry joint methods of waterproofing.

.1 Panel Profile: Flat with groove bent returns, refer to Drawings for dimensions and detailing panels.

.2 Thickness: 4mm overall, 0.3mm core thickness, 0.5mm aluminum thickness per face.

.3 Coating: Polyvinylidence Fluoride (PVDF) or Fluoro Ethylene – Alkyl Vinyl Ether (FEVE) coating.

.4 Colour: As selected from manufacturer's full range.

.2 Soffit Panels: Precoated aluminum, interlocking edges with concealed fasteners.

.1 Panel Profile: Vented, Panel profile to match wall panel.

.2 Thickness: 4mm overall, 0.3mm core thickness, 0.5mm aluminum thickness per face.

.3 Coating: Polyvinylidence Fluoride (PVDF) or Fluoro Ethylene – Alkyl Vinyl Ether (FEVE) coating.

.4 Colour: As selected from manufacturer's standard range.

.5 Product: to match wall panels.

.3 Subgirts: Minimum 18 ga thick formed galvanized steel or 6063-T5 Aluminum; full depth of wall system factory notched and formed to match panel system requirements.

2.5 FABRICATION

.1 Form sections true to shape, accurate in size, square, and free from distortion or defects.

.2 Factory fabricate components ready for field installation, in longest practicable lengths.

.3 Fabricate corners in single continuous piece with minimum 18 inches unless otherwise approved by Consultant.

Part 3 Execution

3.1 EXAMINATION

.1 Verify existing conditions before starting work.

.2 Verify dimensions, tolerances, and method of attachment with other work.

.3 Verify that field measurements are as indicated on Drawings, indicated on Shop Drawings, and instructed by the manufacturer.

.4 Report unsatisfactory conditions to Contractor and Consultant in writing; do not start Work until unsatisfactory conditions are rectified.

3.2 INSTALLATION

.1 Install components to manufacturer's written instructions.

- .1 Weather lap edges 6 inches and ends minimum 6 inches.
- .2 Stagger vertical joints of each layer.
- .3 Securely attach in place, attachment method per manufacturer’s instructions.

.2 Weather Barrier: Install over substrate per manufacturer’s written instructions.

.3 Subgirts: Install subgirts through substrate directly to wood structure. Frame all openings in cladding.

.4 Flashing: Install starter flashing, drip and other flashing, corners, edgings, and window and door flashings as shown on Drawings and/or as required by manufacturer for complete system.

.5 Insulation: Install insulation to manufacturer's recommendations, positively fixed to liner to prevent sagging.

.6 Exterior Cladding:

- .1 Install wall cladding and soffit material to manufacturer's standard installation procedures, providing proper joints true to line, and tight fitting to ensure a weather-tight system.
- .2 Install finishing flashing, cap flashing, trims and closures.
- .3 Attach components in manner not restricting thermal movement.

.7 Sealants: Install sealants at junctions with adjoining work and where shown on Drawings, in accordance with manufacturer’s instructions and industry standards.

3.3 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Maximum Offset from True Alignment between Adjacent Members Butting or In Line: 1/16 inch.

.3 Maximum Variation from Plane or Location Indicated on Drawings: 1/4 inch.

3.4 CLEANING

.1 Section 01 74 00: Cleaning installed work.

.2 Remove site cuttings from finish surfaces.

.3 Protect finished panels from damage until completion of construction.

.4 Follow manufacturer's instructions for removal of films applied to panels.

.5 Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

.6 Repair and touch up very minor surface damage with colour-matching high grade enamel.

.7 Replace damaged panels and components that, in the opinion of the Consultant and/or manufacturer cannot be satisfactorily repaired.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Hollow metal steel frames.

.2 Pressed steel doors.

.3 Louvres.

1.2 RELATED SECTIONS

.1 Section 08 71 00 - Door Hardware – General.

.2 Section 09 91 10 - Painting: Field painting of doors.

1.3 REFERENCES

.1 ASTM A653/A653M-13 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 ASTM C578-15 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.

.3 ASTM C591-15 - Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation.

.4 ASTM C1289-15 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.

.5 CAN/ULC-S701-11 - Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

.6 CAN/ULC-S704-11 - Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.

.7 CSA-G40.20-13/G40.21-13 - General Requirements for Rolled or Welded Structural Quality Steel/ Structural Quality Steel.

.8 CSA-W59-13 - Welded Steel Construction (Metal Arc Welding).

.9 FM (Factory Mutual).

.10 CSDMA (Canadian Steel Door Manufacturers Association).

.1 Recommended Dimensional Standards for Commercial Steel Doors and Frames, 2009.

.2 Recommended Selection and Usage Guide for Commercial Steel Doors and Frame Products, 2009.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other work having a direct bearing on work of this section.

.2 Coordinate the work with frame opening construction, door, and hardware installation.

.3 Sequencing: Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

1.5 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Indicate door and frame configurations and finishes, location of cut-outs for hardware reinforcement.

.3 Shop Drawings:

.1 Indicate frame elevations, reinforcement, anchor types and spacing, location of cut-outs for hardware, and finish.

.2 Indicate door elevations, internal reinforcement, closure method, and cut-outs for louvres.

.4 Samples:

.1 Submit two (2) samples of frame, 4 inches in size illustrating factory finished frame colours and surface texture.

.2 Submit two (2) samples of door face metal, 4 inches in size illustrating pre-finished door colours and surface texture.

1.6 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements.

.3 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

1.8 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000, ISO 14000 certification requirements.

.2 Conform to requirements of CSDMA. Maintain one (1) copy of document on site.

.3 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

1.9 REGULATORY REQUIREMENTS

.1 N/A

1.10 DELIVERY, STORAGE, AND PROTECTION

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Remove doors and frames from wrappings or coverings upon receipt on site and inspect for damage.

.3 Store in vertical position, spaced with blocking to permit air circulation between components.

.4 Store materials on planks or dunnage, out of water and covered to protect from damage.

.5 Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.

Part 2 Products

2.1 MANUFACTURERS

.1 Daybar Industries Ltd; Product: Frames and Doors.

.2 Other acceptable manufacturers offering functionally and aesthetically equivalent products.

.1 Artek Door (1985) Ltd; Product: Frames and Doors.

.2 Baron Steel Doors and Frames; Product: Frames and Doors.

.3 Trillium Steel Doors; Product: Frames and Doors.

.3 Substitutions: Refer to Section 01 25 00.

2.2 MATERIALS

.1 Sheet Steel: Galvanized steel to ASTM A653/A653M, commercial grade (CS), Type B.

.1 Exterior Doors: Coating designation A40, A60.

.2 Reinforcement Channel: CSA-G40.20/G40.21, Type 44W, ZF75, A25 coating designation to ASTM A653/A653M.

2.3 DOOR CORE MATERIALS

.1 Polyisocyanurate Core: ASTM C591 (unfaced), ASTM C1289, (faced), rigid modified polyisocyanurate, closed cell board, 32 kg/cu m, 2.0 pcf, thermal value minimum RSI-1.9.

2.4 ADHESIVES

.1 Cores and Steel Components: Heat resistant, structural reinforced epoxy, resin based adhesive.

.2 Lock Seam: Reinforced epoxy resin, high viscosity, thicksotroptic sealant.

2.5 PRIMERS

.1 Primer: Rust inhibitive touch-up only.

2.6 ACCESSORIES

.1 Door Silencers: Single stud rubber/neoprene.

.2 Exterior Top Caps: Rigid polyvinylchloride (PVC) extrusion.

.3 Frame Thermal Breaks: Rigid polyvinylchloride (PVC) extrusion.

.4 Bituminous Coating: Fibred asphalt emulsion.

.5 Weatherstripping: Specified in Section 08 71 00.

2.7 FABRICATION - DOORS

.1 Exterior Doors: Welded stiffener construction.

.2 Longitudinal Edges: Continuously welded, filled and sanded with no visible edge seams.

.3 Mortised, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier.

.4 Reinforce for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware.

.5 Top and Bottom Channels: Inverted, recessed, welded steel channels.

.6 Exterior Door: Flush PVC top caps.

.7 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.

2.8 WELDED STIFFENER CONSTRUCTION

.1 Exterior Doors: Both face sheets (2.0 mm) 14 ga steel.

.2 Reinforce doors with vertical stiffeners, welded to each face sheet at 150 mm (6 inches) on center maximum.

.3 Fill voids between vertical stiffeners with fibreglass batt insulation.

2.9 FABRICATION - FRAMES

.1 Exterior Frames: 14 ga thick base metal thickness.

.1 Frames: Welded type construction.

.2 Mortised, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier. Provide mortar guard boxes.

.3 Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.

.4 Terminate door stops 6 inches above finished floor.

.5 Prepare frames for silencers. Provide three (3) single silencers for single doors on strike side.

.6 Configure exterior frames with special profile to receive recessed weatherstripping.

.7 Fabricate frames to suit masonry wall coursing with 2 inch or 4 inch head member. Coordinate with masonry installer.

2.10 FINISHES

.1 Factory Finish: Manufacturer’s standard prime coat; paint in field, color as selected by architect.

.2 Coat inside of frame profile with bituminous coating to a thickness of 1/16 inch.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 70 00: Verify existing conditions before starting work.

.2 Verify that opening sizes and tolerances are acceptable; check floor area within path of door swing for flatness.

.3 Verify doors and frames are correct size, swing, and opening number.

.4 Remove temporary shipping spreaders.

3.2 INSTALLATION

.1 Install doors and frames to CSDMA.

.2 Coordinate with masonry, concrete wall construction for anchor placement.

.3 Coordinate installation of doors and frames with installation of hardware specified in Section 08 71 00.

.4 Set frames plumb, square, level and at correct elevation.

.5 Secure anchorages and connections to adjacent construction.

.6 Brace frames rigidly in position while building-in. Install wood spreaders at third points of frame rebate height to maintain frame width. Provide vertical support at centre of head for openings exceeding 48 inches in width.

.7 Remove wood spreaders after frames have been built-in.

.8 Make allowance for deflection to ensure structural loads are not transmitted to frame product.

.9 Install doors, and hardware in accordance with hardware templates and manufacturer's instructions.

.10 Adjust operable parts for correct clearances and function.

.11 Install louvers, glazing and door silencers.

.12 Finish paint as specified in Section 09 91 10.

3.3 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Maximum Diagonal Distortion: 1/16 inch measured with straight edges, crossed corner to corner.

3.4 SCHEDULE

.1 Refer to Door Schedule on drawing sheet A101.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Hardware for doors.

.2 Thresholds.

.3 Weatherstripping, seals, and door gaskets.

1.2 RELATED SECTIONS

.1 Section 08 11 13 – Metal Doors and Frames.

.2 Section 08 71 43 - Automatic Door Operators.

.3 Section 10 14 19 - Signage.

.4 Refer to electrical drawings and specifications.

1.3 REFERENCES

.1 CAN/ULC-S132-07 - Standard for Emergency Exit and Emergency Fire Exit Hardware.

.2 CSDMA (Canadian Steel Door Manufacturers Association).

.3 DHI (Door and Hardware Institute Canada) - AHC and EHC certification programs.

.4 DHI (Door Hardware Institute) - A115 series.

.5 BHMA (Builders Hardware Manufacturers Association) - A156 Series Standards.

.6 UL 305-2012 - Standard for Panic Hardware.

1.4 PRICE AND PAYMENT PROCEDURES

.1 Allowances: Section 01 21 00 - Cash allowances affecting this section.

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination: Coordinate with other work having a direct bearing on work of this section.

.1 Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.

.2 Coordinate Owner's keying requirements during the course of the Work.

.3 Sequencing: Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.6 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Shop Drawings:

.1 Indicate locations and mounting heights of each type of hardware, schedules, catalogue cuts, finishes, electrical characteristics and connection requirements.

.2 Submit manufacturer's parts lists and templates.

1.7 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements.

1.8 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

.2 Operation and Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

.3 Warranty Documentation: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

.4 Record Documentation:

.1 Record actual locations of installed cylinders and their master key code.

.2 Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.9 MAINTENANCE MATERIAL SUBMITTALS

.1 Section 01 78 40: Maintenance and extra material requirements.

.2 Tools:

.1 Provide special wrenches and tools applicable to each different or special hardware component.

.2 Provide maintenance tools and accessories supplied by hardware component manufacturer.

1.10 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 certification requirements.

.2 Perform Work to the following requirements:

.1 BHMA A156 Series.

.2 DHI A115 Series.

.3 DHI WDHS-3.

.4 CSDMA.

.5 NFPA 80.

.6 NFPA 252.

.7 UL 10B.

.8 UL 305.

.9 CAN/ULC-S132.

.10 CAN/ULC-S104.

.3 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.4 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

.5 Hardware Supplier Personnel: Employ a qualified person to assist in the work of this section.

1.11 REGULATORY REQUIREMENTS

.1 Conform to applicable code for Products requiring electrical connection. Listed and classified by testing firm acceptable to the authority having jurisdiction, CSA as suitable for the purpose specified and indicated.

1.12 DELIVERY, STORAGE, AND PROTECTION

.1 Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

1.13 WARRANTY

.1 Section 01 78 10: Warranties.

.2 Provide five (5) year manufacturer warranty for door closers.

Part 2 Products

2.1 SUPPLIERS

.1 Acceptable Suppliers:

.1 Knells.

.2 Muller Hardware & Supply.

.3 Tykel Commercial Door and Supply Inc.

.2 Substitutions: Refer to Section 01 25 00.

2.2 MANUFACTURERS

.1 Refer to hardware schedule.

.2 Substitutions: Refer to Section 01 25 00.

2.3 KEYING

.1 Door Locks: Verify type and quantity with Owner.

2.4 FINISHES

.1 Finishes: Match finish to existing adjacent doors to remain, to be confirmed by Consultant during shop drawing review.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 70 00: Verify existing conditions before starting work.

.2 Verify that doors and frames are ready to receive work and dimensions are as indicated on Shop Drawings, instructed by the manufacturer.

.3 Verify that electric power is available to power operated devices and is of the correct characteristics.

3.2 INSTALLATION

.1 Install hardware to manufacturer's written instructions.

.2 Use templates provided by hardware item manufacturer.

.3 Mounting heights for hardware from finished floor to centre line of hardware item:

.1 Locksets: 40 5/16 inch above finish floor.

.4 Mounting heights for hardware from finished floor to centre line of hardware item, refer to:

.1 CSDMA, DHI WDHS-3, DHI A115 Series.

3.3 FIELD QUALITY CONTROL

.1 Section 01 45 00: Field inspection, testing, and adjusting.

.2 Architectural Hardware Consultant will inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's written instructions and as specified.

3.4 ADJUSTING

.1 Adjust hardware for smooth operation.

3.5 PROTECTION OF FINISHED WORK

.1 Section 01 78 40: Protecting installed work.

.2 Do not permit adjacent work to damage hardware or finish.

3.6 SCHEDULES

.1 Refer to Hardware Schedule following.

.1 Door 03 and Door 04 to each receive the following items:

914 x 2100 x 51 HMD Door/ HMF Frame			NON-RTD Door/NON-RTD Frame	
3	SWING CLEAR HINGE	STSCB248 4-1/2	32D	STA
1	STOREROOM LEVER	ND80LD X RHO X 13-247 X 10-025	626	SCH
1	MEDECO CYLINDER C/W 2 CHANGE KEYS	MED-20W200S1-26-C3S (MEDECO CYLINDER C/W 2 CHANGE KEYS)		G&A
1	ELECTRIC STRIKE	5000C-12/24D-630	630	ESH
1	AUTO OPERATOR	MICOM KIT 18138 ECONOMICAL UNIVERSAL WASHROOM (SW800 ADO, IND & EMERG CALL-INSTALLED)		G&A
2	ACTUATOR	CM-7536/1CM-42-DSU-CLR-WT		CAM
1	WEATHER STRIPPING	W-1 X 17-2	MILL	KNC
1	DOOR SWEEP	W-13S X 38	CLEAR	KNC
1	THRESHOLD	CT-10 X 38	ALUMINUM	KNC
1	DRIP CAP	W-3 X 42	MILL	KNC

NOTE: SUPPLY & INSTALLATION OF AUTO DOOR OPERATOR INCLUDED.
110 VAC TO HEADER BY DIV. 16. ALL CONDUIT AND PULL STRINGS BY DIV. 16
TIMER SUPPLIED BY DIV. 16. AFTER HOURS, TIMER WILL DISABLE EXTERIOR AUTO OPERATOR COLUMN SWITCH AND SET STRIKE TO FAIL SECURE MODE.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Electric operated door equipment.

.2 Control devices.

1.2 RELATED SECTIONS

.1 Section 08 71 00 - Door Hardware - General

.2 Refer to electrical Drawings and specifications.

1.3 REFERENCES

.1 BHMA A156.10-2011 - Power Operated Pedestrian Doors.

.2 BHMA A156.19-2013 - Power Assist And Low Energy Power Operated Doors.

.3 CSA-C22.1-15 - Canadian Electrical Code, Part I (23rd Edition), Safety Standard for Electrical Installations.

.4 CSA-C22.2 No. 100-14 - Motors and Generators.

.5 CAN/CSA-C22.2 No. 247-14 - Operators and Systems of Doors, Gates, Draperies and Louvres.

.6 NEMA MG 1-2014 - Motors and Generators.

.7 NFPA 70 - National Electrical Code (NEC), 2014 Edition.

.8 UL 325-2013 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems (6th Edition).

1.4 SYSTEM DESCRIPTION

.1 Automatic Door Equipment: Electrically operated with push plate and button control device.

.2 Door: Single swing, hinged operation.

1.5 PERFORMANCE REQUIREMENTS

.1 Automatic Door Equipment: Accommodate heavy pedestrian traffic, and weight of doors.

.2 System Design: Operate, hold open, and close doors under design wind and suction loads calculated in accordance with applicable code.

.3 Operating Temperature Range: -7 to 60 degrees C ambient.

.4 Operators: Fully adjustable for opening and closing speeds.

1.6 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination: Coordinate with other work having a direct bearing on work of this section.

.3 Sequencing: Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.7 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data on system components, sizes, features, and finishes.

.3 Shop Drawings:

.1 Indicate layout and dimensions; head, jamb, and sill conditions; elevations; components, anchorage, recesses, materials, and finishes, electrical characteristics and connection requirements.

.2 Identify installation tolerances required, assembly conditions, routing of service lines and conduit, and locations of operating components and boxes.

1.8 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements indicating special procedures, perimeter conditions requiring special attention, and manufacturer's hardware and component templates.

1.9 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

.2 Maintenance Contracts: Provide service and maintenance of operating equipment for one year from Date of Substantial Completion.

.3 Operation and Maintenance Data: Include manufacturer's parts list and maintenance instructions for each type of hardware and operating component.

.4 Warranty Documentation: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

.5 Record Documentation: Record actual locations of concealed equipment, services, and conduit.

1.10 MAINTENANCE MATERIAL SUBMITTALS

.1 Section 01 78 40: Maintenance extra material requirements.

.2 Tools: Provide wrenches and tools required for maintenance of equipment.

1.11 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 certification requirements.

.2 Perform Work in accordance with CAN/CSA-C22.2 No. 247, BHMA A156.10, BHMA A156.19, UL 325. Maintain one (1) copy of document on site.

.3 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3)]years documented experience.

.4 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

1.12 REGULATORY REQUIREMENTS

.1 Conform to applicable code for automatic release of control drive unit to permit manual opening of doors.

.2 Products Requiring Electrical Connection: Listed and classified by CSA, testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.

1.13 WARRANTY

.1 Section 01 78 10: Warranties.

.2 Provide two (2) year manufacturer warranty for motor and compressor and operating unit.

Part 2 Products

2.1 MANUFACTURERS

.1 CAMDEN Door Controls; Product: CM-7536 Column

.2 Other acceptable manufacturers offering functionally and aesthetically equivalent products.

.3 Substitutions: Refer to Section 01 25 00.

2.2 TOUCH/PUSH BAR CONTROL DEVICE

.1 Vertical control device mounted on new block wall.

.2 36 inch tall column push plate switch.

.3 Dimensions: 953mm x 150mm x 38mm.

.4 Contact Rating: 15A @ 30 VDC

.5 Switch Type: (2 Internal) Momentary

.6 Contact Type: SPDT Form ‘C’

.7 Voltage: 12/24V AC/DC

.8 IP 65 Rated

.9 Provide and connect push bar control device to day and seasonal timer to prevent wearing out control device while washrooms are locked for the night and season.

2.3 FINISHES

.1 Exposed Operator and Components: Finish selected from manufacturer's standard range.

.2 Graphics: “Push to Open” and “Push to Lock” options must be available.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 70 00: Verify existing conditions before starting work.

.2 Verify that surfaces, openings and recesses are ready to receive work and dimensions are as indicated on Shop Drawings, instructed by the manufacturer.

.3 Verify that electric power is available and of the correct characteristics.

3.2 INSTALLATION

.1 Install equipment to manufacturer's written instructions.

.2 Provide for thermal expansion and contraction of door and frame units and live and dead loads that may be transmitted to operating equipment.

.3 Provide for dimensional distortion of components during operation.

.4 Install pneumatic lines and door power units in a manner to prevent condensation or freezing.

.5 Coordinate installation of components with related and adjacent work; level and plumb.

3.3 ADJUSTING

.1 Adjust door equipment for correct function and smooth operation.

3.4 CLEANING

.1 Section 01 74 00: Cleaning installed work.

.2 Remove temporary protection, clean exposed surfaces.

3.5 DEMONSTRATION AND INSTRUCTIONS

.1 Section 01 79 00: Demonstrating installed work.

.2 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Gypsum board.

.2 Cementitious backer board.

.3 Acoustic insulation.

1.2 RELATED SECTIONS

.1 Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES

.1 ANSI A118.9 - Specifications for Test Methods and Specifications for Cementitious Backer Units.

.2 ASTM C475/C475M-15 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

.3 ASTM C514-04(2014) - Standard Specification for Nails for the Application of Gypsum Board.

.4 ASTM C557-03(2009)e1 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.

.5 ASTM C665-12 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

.6 ASTM C840-13 - Standard Specification for Application and Finishing of Gypsum Board.

.7 ASTM C1002-14 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

.8 ASTM C1047-14a - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.

.9 ASTM C1278/C1278M-07a(2011) - Standard Specification for Fiber-Reinforced Gypsum Panel.

.10 ASTM C1288-14 - Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets.

.11 ASTM C1325-14 - Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units.

.12 ASTM C1396/C1396M-14a - Standard Specification for Gypsum Board.

.13 ASTM E90-09 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

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

.15 CAN/ULC-S702-14 - Standard for Mineral Fibre Thermal Insulation for Buildings.

.16 Gypsum Association GA-214-10e - Recommended Levels of Gypsum Board Finish.

.17 Gypsum Association GA-216-13 - Application and Finishing of Gypsum Panel Products.

.18 Gypsum Association GA-801-07 - Handling and Storage of Gypsum Panel Products: A Guide for Distributors, Retailers, and Contractors.

1.4 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Product Data:

.1 Provide data on gypsum board, cementitious backer board, joint tape, and any other products or accessories required for complete installation.

1.5 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

1.7 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000, ISO 14000 certification requirements.

.2 Perform Work in accordance with ASTM C840, GA-214, GA-216, GA-600. Maintain one (1) copy of document on site.

.3 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

.4 Handling Gypsum Board: Comply with GA-801.

Part 2 Products

2.1 MANUFACTURERS

.1 CertainTeed; Product: Extreme Impact Resistant Drywall with M2Tech.

.2 Other acceptable manufacturers offering functionally equivalent products.

.1 USG; Product: Sheetrock Brand Glass-Mat Panels Mold Touch AR Firecode X.

.3 Substitutions: Refer to Section 01 25 00.

2.2 FRAMING MATERIALS

.1 Furring, Framing, and Accessories: ASTM C645, GA-216, GA-600.

.2 Fasteners: ASTM C1002, ASTM C514, GA-216.

.3 Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

.4 Adhesive: ASTM C557, GA-216.

2.3 GYPSUM BOARD MATERIALS

.1 Gypsum Board: ASTM C1396/C1396M, paper-faced; 48 inches wide, maximum available length in place; tapered, SW edges, ends square cut.

.1 Regular core, 5/8 inch thick.

.2 Moisture Resistant Gypsum Board: ASTM C1396/C1396M, paper-faced, maximum available length in place; tapered edges, ends square cut.

.1 Regular core, 5/8 inch thick.

.3 Abuse-Resistant Gypsum Board: ASTM C1396/C1396M, paper-faced, impact resistant; maximum available length in place; tapered edges, ends square cut.

.1 Regular core, 5/8 inch thick.

2.4 ACCESSORIES

.1 Corner Beads: GA-216, ASTM C1047, metal corner bead.

.2 Edge Trim: ASTM C1047, GA-216; Type U casing bead, L bead, LK bead, LC bead.

.3 Joint Materials: GA-216, ASTM C475/C475M.

.1 Reinforcing tape, adhesive, and water.

.2 Joint compound: Asbestos-free, dust-controlled.

.4 Gypsum Board Fasteners: ASTM C1002, Type W.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 70 00: Verify existing conditions before starting work.

.2 Verify that site conditions are ready to receive work and opening dimensions are as instructed by the manufacturer, indicated on shop drawings.

3.2 CEILING FRAMING INSTALLATION

.1 Install to ASTM C754, GA-216, manufacturer's written instructions.

.2 Coordinate location of hangers with other work.

.3 Install ceiling framing in accordance to structural Drawings and specifications.

.4 Reinforce openings in ceiling system which interrupt main carrying channels or furring channels, with lateral channel bracing. Extend bracing minimum 24 inches past each end of openings.

.5 Laterally brace entire suspension system.

3.3 GYPSUM BOARD INSTALLATION

.1 Install gypsum board to ASTM C840, GA-216, GA-600, manufacturer's written instructions.

.2 Erect single layer gypsum board in most economical direction, with ends and edges occurring over firm bearing.

.3 Use screws when fastening gypsum board to wood furring or framing. Staples may only be used when securing the first layer of double layer applications.

.4 Treat cut edges and holes in moisture resistant gypsum board with sealant.

.5 Place control joints consistent with lines of building spaces as reviewed by Consultant prior to installation.

.6 Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.

.7 Install backing board over wood studs to manufacturer's written instructions.

3.4 JOINT TREATMENT

.1 Finish to ASTM C840, Level 4.

.2 Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.

.3 Feather coats on to adjoining surfaces so that camber is maximum 1/32 inch.

.4 Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile. All cut edges and holes in moisture resistant gypsum board must be filled with sealant.

.5 Fill and finish joints and corners of cementitious backing board.

3.5 TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in any direction.

3.6 SCHEDULES

.1 All locations to receive moisture, mold and abuse-resistant gypsum board unless otherwise specified.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Ceramic tiling.

.2 Waterproofing membrane.

.3 Tile accessories.

.4 Mortar and Grout.

1.2 RELATED SECTIONS

.1 Section 04 04 25 - Masonry Units: Masonry wall substrate surface.

.2 Section 06 10 00 – Rough Carpentry: Plywood substrate surface.

.3 Refer to mechanical Drawings and specifications for plumbing fixtures and accessories.

1.3 REFERENCES

.1 ANSI A108/A118/A136.1-2014 - Specifications for the Installation of Ceramic Tile - Version 2013.1..

- .1 ANSI A108 Series - Installation Standards.
- .2 ANSI A118.1 - Specifications for Dry-Set Portland Cement Mortar.
- .3 ANSI A118.3 - Chemical Resistant, Water Cleanable Tile-Setting and Grouting Epoxy and Water Cleanable Tile Setting Epoxy Adhesive.
- .4 ANSI A118.4 - Specifications for Latex-Portland Cement Mortar.
- .5 ANSI A118.5 - Specifications for Chemical Resistant Furan Resin Mortars and Grouts for Tile Installation.
- .6 ANSI A118.6 - Specifications for Standard Cement Grouts for Tile Installation.
- .7 ANSI A118.9 - Specifications for Test Methods and Specifications for Cementitious Backer Units.
- .8 ANSI A118.11 - Specifications for EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar.
- .9 ANSI A118.12 - Specification for Crack Isolation Membranes for Thin-set Ceramic Tile and Dimension Stone Installation.
- .10 ANSI A136.1 - Specifications for Organic Adhesives for Installation of Ceramic Tile.

.2 ANSI A137.1-2012 - American National Standard for Ceramic Tile (version 2013.1).

.3 ASTM C144-11 - Standard Specification for Aggregate for Masonry Mortar.

.4 ASTM C171-07 - Standard Specification for Sheet Materials for Curing Concrete.

.5 ASTM C207-06(2011) - Standard Specification for Hydrated Lime for Masonry Purposes.

.6 ASTM C373-14a - Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products, Ceramic Tiles, and Glass Tiles.

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

.8 CAN/CGSB 25.20-95 - Surface Sealer for Floors.

.9 CSA-A3000-13 - Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).

.10 ISO 10545 Series - Ceramic Tiles, Standards for Testing.

.11 ISO 13006-2013 - Ceramic Tiles, Definitions, Classifications, Characteristics and Marking.

.12 TCNA Handbook for Ceramic, Glass, and Stone Tile Installation (2015).

.13 TTMAC - Specification Guide 09 30 00, Tile Installation Manual 2016-2017.

1.4 SYSTEM DESCRIPTION

.1 Ceramic tile, installed on walls, including base cand using thin set mortar bed application method.

1.5 PERFORMANCE REQUIREMENTS

.1 Tile products manufactured and tested to ANSI A137.1.

.2 Frost Resistance: Maximum water absorption rating of 0.5% or less when measured to ASTM C373 for ceramic materials, ISO 10545. Submit proof of freeze-thaw stability for tile materials having water absorption higher than 0.5%.

.3 Surface Flatness Tolerances:

.1 Wall Tiles: 4 x 4 inches to 16 x 16 inches: Wall flatness measured to a minimum FF35; equivalent to 1/4 inch with maximum 2 gaps under a 10 ft straightedge measurement.

1.6 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other work having a direct bearing on work of this section.

.2 Coordinate requirements for wall surface mounting and recesses, accounting for mortar bed, bond coat and tile thickness where finished tile surfaces are installed flush with adjacent wall finishes.

1.7 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Submit manufacturer's product data for each type of product specified.

.3 Shop Drawings: Indicate movement joints, transitions and intersections with dissimilar materials, colour arrangement, tile layout, patterns, edging details.

.4 Samples: Submit the following samples for initial selection:

.1 Tile: Submit samples of actual tiles showing manufacturer's full range of colours, textures, and patterns available for each type and composition of tile indicated. Include samples of accessories involving colour selection.

.2 Grout: Manufacturer's standard colours using actual sections of grout showing full range of colours available for each type of grout indicated.

.3 Trims: Submit full size units of each type of trim and accessory in each colour required for installation; minimum 6 inch lengths.

1.8 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

.2 Manufacturer's Certificate: Certify that Products meet or exceed the requirements of ISO 10545 Series, ANSI A137.1.

.3 Installation Data:

.1 Manufacturer's recommended and special installation requirements.

.2 Written instructions for using adhesives and grouts.

1.9 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

.2 Operation and Maintenance Data: Submit two (2) copies of TTMAC Maintenance Guide and additional information as follows.

.1 Manufacturer’s maintenance data sheets for floor sealers and other non-tile maintenance materials and accessories.

.2 Warning of maintenance practices or materials that may damage or disfigure finished Work.

1.10 MAINTENANCE MATERIAL SUBMITTALS

.1 Section 01 78 40: Maintenance and extra material requirements.

.2 Extra Stock Materials: Provide 5% of total of each size, colour, and surface finish of tile specified.

.1 Store in original containers, clearly marked to identify the following:

.1 Manufacturer and distributor’s name.

.2 Material series name and stocking number.

.3 Material description, including colour and pattern.

1.11 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 certification requirements.

.2 Conform to ANSI A108/A118/A136.1, TTMAC Manual, TCNA Handbook.

.3 Maintain one (1) copy of document on site.

.4 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.5 Installer Qualifications: Company specializing in performing the work of this section with minimum five (5) years documented experience and having completed tile installations similar in material, design and extent to this Project.

1.12 DELIVERY, STORAGE, AND PROTECTION

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Deliver and store packaged materials in original containers with seals unbroken and labels intact.

.3 Store materials to prevent damage or contamination to materials by water, freezing, foreign matter, and other causes; store cementitious materials in a dry area, and raised off floor and ground surfaces.

1.13 SITE CONDITIONS

.1 Ambient Conditions:

.1 Apply tile after completion of Work by other sections, to dry, clean, firm, level and plumb surfaces, free from oil or wax or any other material detrimental to tile adhesion.

.2 Maintain tile materials and substrate temperature between TTMAC, manufacturer's recommended minimum and maximum temperature range.

.3 Maintain temperature range for minimum forty-eight (48) hours before and during installation and until materials are fully set and cured to manufacturer’s recommendations.

.4 Maintain adequate ventilation where Work generates toxic gases or where there is a risk of raising relative humidity to levels detrimental to building finishes and assemblies.

Part 2 Products

2.1 MANUFACTURERS

.1 Ceramic Tile:

.1 Centura; Product: Rainbow Gloss 4x16.

.2 Substitutions: Refer to Section 01 25 00.

.2 Mortar and Grout:

.1 Mapei; Product: Latifcrete 600 Series or equivalent

.2 Flextile; Product: Equivalent to Mapei product above.

.3 Substitutions: Refer to Section 01 25 00.

2.2 CERAMIC TILE MATERIALS

.1 Wall Tile: ISO 13006, ANSI A137.1, described as follows.

.1 Composition: Ceramic

.2 Water Absorption: 15%-16%

.3 Size: 4 inch by 16.

.4 Surface Finish: Bright.

.5 Chemical Resistance: ISO 10545, Pass Rating.

.6 Frost Resistance: Required.

.7 Colour: Selected from tile manufacturer's full range of colours, As indicated in Finishes Legend on Drawings.

.8 Stain Resistance: ISO 10545 Series, Class 5.

.9 Scratch Resistance: ISO 10545, PEI Rating 7.

.10 Product: Rainbow Gloss, manufactured by Centura.

2.3 TRIMS AND EDGING

.1 Trims: Shapes and profiles to match colour and finish of adjoining field tile or have stainless steel finish; coordinate with size and coursing of adjoining flat tile where applicable.

.1 Base: Non-coved, to match wall for tile type:

.1 Length of units: 16 inches.

.2 Height: 4 inch units, two (2) rows.

.2 Product: Rainbow Gloss, manufactured by Centura.

2.4 MORTAR AND GROUT MATERIALS

.1 Mortar Bed Materials and Wall Tile Mortar:

.1 As required and approved for use with specified tile type and application by tile manufacturer.

.2 Tile Grout:

.1 Portland Cement Grout - Unsanded: ANSI A118.6, factory blended latex-portland cement grout, specifically formulated for joints maximum 1/8 inch wide.

.1 Colour: As selected from manufacturer’s standard range.

2.5 ADHESIVE MATERIALS

As required and approved for use with specified tile type and application by tile manufacturer.

2.6 ACCESSORIES

.1 Sealer: Meeting or exceeding requirements of CAN/CGSB 25.20, Type 1, as recommended by tile manufacturer.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 70 00: Verify existing conditions before starting work.

.2 Examine surfaces and verify that surfaces are ready to receive tile installation.

.1 Concrete substrates have cured minimum of ninety (90) days to TCNA, TTMAC requirements.

.2 Substrates are dry; clean; free from oil, waxy films, and curing compounds; and within starting flatness tolerances as specified in Section 03 35 10, and are ready for application of levelling materials as required.

.3 Grounds, anchors, recessed frames, electrical and mechanical units of Work in or behind tile have been installed.

.4 Joints and cracks in tile substrates are coordinated with tile joint locations.

.3 Verify tile subject to colour variations has been factory blended and packaged. If not factory blended, blend tiles at site before installing.

3.2 PREPARATION

.1 Protect surrounding work from damage or disfiguration.

.2 Vacuum clean surfaces and damp clean.

.3 Seal substrate surface cracks with filler. Level existing substrate surfaces to flatness tolerances specified.

.4 Install backing board / plywood sheet board to manufacturer's written instructions. Tape joints and corners.

3.3 INSTALLATION

.1 Install tile to ANSI A108 series standards, manufacturer's written instructions.

.2 Lay tile to pattern indicated on interior elevations. Do not interrupt tile pattern through openings.

.3 Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions:

.4 Cut and fit tile tight to penetrations through tile. Form corners, bases neatly. Align base, wall joints.

.5 Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar or grout.

.6 Adjust tile layout to minimize tile cutting. Maintain minimum tile width of one-half unit size unless indicated otherwise on Drawings or approved by Consultant.

.7 Form internal angles square and external angles square.

.8 Sound tile after setting. Replace hollow sounding units.

.9 Keep expansion joints, control joints free of adhesive or grout. Apply sealant to joints.

.10 Allow tile to set for a minimum of forty-eight (48) hours prior to grouting.

.11 Install grout to TTMAC Manual, TCNA Handbook, ANSI A108 series standards and manufacturer’s written instructions.

.12 Apply sealant to junction of tile and dissimilar materials and planes, at control joints.

.13 Install prefabricated edge strips and movement joints at locations indicated or where exposed edge of floor tile meets different flooring materials and exposed substrates.

.14 Protect exposed edges of floor tile with properly sized transition strips; at uneven transitions between 1/4 inch and 1/2 inch, use sloped reducer strips.

3.4 INSTALLATION - ACCESSORIES

.1 Movement Joints: Install expansion, control joints where required by industry standards and approved by Consultant, to TTMAC Detail 301MJ-2012/2013; keep control and expansion joints free of setting and grouting materials.

3.5 FIELD QUALITY CONTROL

.1 Provide inspection of the following:

- .1 Tiles are set flush and level with adjacent tiles, meeting lippage requirements.
- .2 Identify broken, cracked, damaged or hollow sounding tiles.
- .3 Accessories are correctly installed.
- .4 Grouting and sealant are correctly installed.
- .5 Installation is complete to TTMAC, ANSI A108 series standards.

3.6 CLEANING

.1 Section 01 74 00: Cleaning installed work.

.2 Clean tile and grout surfaces with manufacturer's recommended cleaning methods.

3.7 PROTECTION OF FINISHED WORK

.1 Section 01 78 40: Protecting installed work.

.2 Protect finished areas from traffic until setting materials have sufficiently cured to TCNA, TTMAC requirements.

3.8 SCHEDULES

.1 Refer to finishes plan and interior elevations in Drawings.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Surface preparation.

.2 Painting.

1.2 RELATED SECTIONS

.1 Section 08 11 13 – Metal Doors and Frames.

1.3 REFERENCES

.1 MPI (Master Painters Institute) – Architectural Painting Specifications Manual and Maintenance Repainting Manual.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination: Coordinate with other Work having a direct bearing on Work of this section.

.3 Scheduling:

.1 Schedule painting operations to prevent disruption of and by other trades.

1.5 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Product Data:

.1 Submit Product data on all specified finishing products.

.2 Submit two (2) copies of WHMIS MSDS - Material Safety Data Sheets.

.3 Samples:

.1 Submit two (2) draw down samples, 12 inches in size illustrating selected colours, sheen and textures for each colour selected.

1.6 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements including special surface preparation procedures and substrate conditions requiring special attention.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

.2 Record Documentation: Upon completion, provide itemized list of products used including the following:

.1 Manufacturer's name.

.2 Product name, type and use.

.3 Colour coding number.

.4 Manufacturer's Material Safety Data Sheets (MSDS).

1.8 MAINTENANCE MATERIAL SUBMITTALS

.1 Section 01 78 40: Maintenance and extra material requirements.

.2 Extra Stock Materials: Provide properly packaged maintenance material as follows.

.1 1 gal of each coating type and colour to Owner.

.2 Label each container with colour, type, texture and room locations in addition to manufacturer's label.

1.9 QUALITY ASSURANCE

.1 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five (5) years documented experience.

.2 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

.3 Conform to MPI Painting Manual requirements for materials, preparation and workmanship.

.4 Paint Products: Paint manufacturers and paint Products listed under the Approved Product List section of the MPI Painting Manual.

.5 Special Systems: Where special painting, coating system applications are used, provide manufacturer's certification of all surfaces and conditions for specific paint or coating system application including inspection, on-site supervision and/or approval of their system application at no additional cost to Owner as required by authority having jurisdiction.

1.10 REGULATORY REQUIREMENTS

.1 Conform to applicable code for flame and smoke rating requirements for finishes, storage, mixing, application and disposal of paint and related waste materials.

1.11 DELIVERY, STORAGE, AND PROTECTION

.1 Section 01 61 00: Transport, handle, store, and protect products.

.2 Deliver products to site in sealed and labeled containers showing manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, colour designation, and written instructions for mixing and reducing.

.3 Store paint materials at minimum ambient temperature of 7 degrees C and a maximum of 32 degrees C, in dry, ventilated area and as required by manufacturer's written instructions.

.4 Provide adequate fireproof storage lockers and warnings as required by authorities having jurisdiction for storing toxic and volatile/explosive/flammable materials.

1.12 SITE CONDITIONS

.1 Ambient Conditions:

.1 Do not perform painting or decorating Work when ambient air and substrate temperatures are below 10 degrees C for both interior and exterior work, or as required by paint product manufacturer.

.2 Do not perform painting or decorating Work when relative humidity is above 85% or when dew point is less than 3 degrees C variance between the air/surface temperature required by paint Product manufacturer.

.3 Provide suitable weatherproof covering and sufficient heating facilities to maintain minimum ambient air and substrate temperatures for twenty-four (24) hours before, during and after paint application.

.4 Do not perform painting and decorating Work when maximum moisture content of substrate exceeds:

.1 Wood: 15%.

.2 Plaster and Gypsum Wallboard: 12 %.

.3 Masonry, Concrete, and Concrete Unit Masonry: 12%.

.4 Concrete Floors: 8%.

.5 Conduct moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple cover patch test.

.6 Test concrete, masonry and plaster surfaces for alkalinity as required.

.7 Provide minimum lighting level of 323 lux, 30 ft candles is provided on surfaces to be painted or decorated.

1.13 WASTE MANAGEMENT AND DISPOSAL

.1 Dispose of waste materials in accordance with Provincial and Local authorities having jurisdiction.

.2 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

.3 Place non-reusable materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.

.4 To reduce contaminants entering waterways, sanitary/storm drain systems or into the ground, adhere to the following procedures:

.1 Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.

.2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.

.3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.

.4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.

.5 Dry out empty paint cans prior to disposal or recycling.

.6 Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.

.5 Set aside and protect surplus and uncontaminated finish materials and deliver or arrange collection for verifiable re-use or re-manufacturing.

1.14 WARRANTY

.1 Provide local 100% two (2) year Maintenance Bond, MPI Accredited Quality Assurance Association two (2) year guarantee warranting that Work has been performed in accordance with MPI Painting Manual.

Part 2 Products

2.1 MATERIALS

.1 Use only materials (primers, paints, coatings, varnishes, stains, lacquers, fillers) listed in the latest edition of the MPI Approved Product List (APL) on this project.

.2 Ancillary materials such as linseed oil, shellac, thinners, solvents to be of highest quality product and provided by an MPI listed manufacturer, and compatible with paint materials being used.

.3 Where possible, all materials to be lead and mercury free with low VOC content.

.4 Provide all material for each system from a single manufacturer.

.5 Fire Hazard: Flame spread and smoke developed ratings in accordance with applicable code, local authorities having jurisdiction.

.6 Patching Materials: Latex filler.

.7 Fastener Head Cover Materials: Latex filler.

2.2 MIXING AND TINTING

.1 Coatings: Ready-mixed and pre-tinted; re-mix all paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

.2 Paste, Powder or Catalyzed Paint: Mixed in accordance with manufacturer's written instructions.

.3 Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

.1 Do not exceed paint manufacturer's recommendations for addition of thinner. Do not use kerosene or any such organic solvents to thin water-based paints.

.2 Thin paint for spraying in accordance with paint manufacturer's instructions.

2.3 FINISH AND COLOUR

.1 Finish: To MPI Premium Grade finish requirements.

.2 Colours and Finishes: Refer to Finish Schedule on Drawings.

.1 Exterior Colours: Based on one (1) base colour and one (1) accent colour with a maximum of one (1) deep or bright colour. No more than three (3) colours will be selected for entire project.

.2 Interior Colours: Based on one (1) base colour and one (1) accent colour with a maximum of one (1) deep or bright colour. No more than three (3) colours will be selected for entire project.

2.4 GLOSS/SHEEN RATINGS

.1 Paint gloss is defined as the sheen rating of applied paint with the following values:

Gloss Level	Description	Gloss @ 60 degrees	Sheen @ 85 degrees
G1	Matte Finish (flat)	0 to 5	10 max.
G2	Velvet-Like Finish	0 to 10	10 to 35
G3	Eggshell Finish	10 to 25	10 to 35
G4	Satin-Like Finish	20 to 35	35 min.
G5	Traditional Semi-Gloss Finish	35 to 70	
G6	Traditional Gloss	70 to 85	
G7	High Gloss Finish	More than 85	

.2 Gloss level ratings of painted surfaces as noted on Finish Schedule.

2.5 MANUFACTURERS

.1 Paint Manufacturers:

.1 Dulux; Diamond Grade.

.2 Substitutions: Refer to Section 01 25 00.

2.6 EXTERIOR PAINT SYSTEMS

.1 Gypsum Board Soffits.

.1 One (1) coat of primer sealer alkyd, latex.

.2 Two (2) coats of alkyd, latex, flat finish.

.2 Steel - Unprimed:

.1 One (1) coat of alkyd, latex primer.

.2 Two (2) coats of latex, alkyd enamel, semi-gloss finish.

.3 Steel - Shop Primed:

.1 Touch-up with zinc rich, zinc chromate primer as recommended by shop prime manufacturer.

.2 Two (2) coats of latex, alkyd enamel, semi-gloss finish.

.4 Steel - Galvanized:

.1 One (1) coat galvanize primer.

.2 Two (2) coats of latex, alkyd enamel, semi-gloss finish.

.5 Aluminum - Mill Finish:

.1 One (1) coat etching primer.

.2 Two (2) coats of alkyd enamel, sheen finish as selected by Consultant.

2.7 INTERIOR PAINT SYSTEMS

.1 Concrete, Concrete Block:

.1 One (1) coat of block filler, primer sealer latex, alkyd.

.2 Two (2) coats of alkyd,latex, sheen finish as selected by Consultant.

.2 Steel - Unprimed:

.1 One (1) coat of latex, alkyd primer.

.2 Two (2) coats of latex, alkyd enamel, semi-gloss finish.

.3 Steel - Primed:

.1 Touch-up with latex, alkyd primer.

.2 Two (2) coats of alkyd, latex enamel, semi-gloss finish.

.4 Steel - Galvanized:

.1 One (1) coat galvanize primer.

.2 Two (2) coats of alkyd, latex enamel, semi-gloss finish.

.5 Aluminum - Mill Finish:

.1 One (1) coat etching primer.

.2 Two (2) coats of alkyd enamel, sheen finish as selected by Consultant.

.6 Concrete Floors:

.1 Refer to section 03 35 10 – Concrete Floor Finishing.

.7 Gypsum Board:

.1 One (1) coat of alkyd primer sealer.

.2 Two (2) coats of latex enamel, flat finish for ceilings, eggshell finish for walls.

2.8 INTERIOR PAINT SYSTEMS

.1 Paint interior surfaces in accordance with the following MPI Painting Manual requirements.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 70 00: Verify existing conditions before starting work.

.2 Verify that substrate conditions, surfaces are ready to receive work as instructed by the product manufacturer.

.3 Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

.4 Test shop applied primer for compatibility with subsequent cover materials.

.1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.

.2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.

.3 Apply paint when previous coat of paint is dry or adequately cured.

3.2 PREPARATION

.1 Prepare surfaces in accordance with MPI requirements.

.2 Remove and store miscellaneous hardware and surface fittings such as electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to painting. Clean and replace upon completion of painting Work in each area. Remove doors before painting to paint bottom and top edges and re-hung.

.3 Protect adjacent surfaces and areas, including rating and instruction labels on doors, frames, equipment, piping, from painting operations with drop cloths, shields, masking, templates, or other suitable protective means.

.4 Correct defects and clean surfaces which affect work of this section. Start of finish painting of defective surfaces indicates acceptance of substrate and making good defects will be at no cost to Owner.

.5 Confirm preparation and primer used with fabricator of steel items.

.6 Seal with shellac and seal marks which may bleed through surface finishes.

.7 Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

.8 Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.

.9 Asphalt, Creosote, or Bituminous Surfaces Scheduled for Paint Finish: Remove foreign particles to permit adhesion of finishing materials. Apply compatible, latex based sealer or primer.

.10 Concrete Floors: Remove contamination; acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

.11 Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

.12 Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

.13 Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

.14 Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by [power tool] [hand] wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of

phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.

.15 Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.

.16 Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied.

.17 Exterior Wood Scheduled to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior calking compound after sealer has been applied.

.18 Wood and Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

3.3 APPLICATION

.1 Apply paint or stain in accordance with MPI Painting Manual Premium Grade finish requirements.

.2 Apply products to adequately prepared surfaces, within moisture limits and acceptable environmental conditions.

.3 Apply paint finish in areas where dust is no longer being generated or when wind or ventilation conditions will not affect quality of finished surface.

.4 Apply each coat to uniform finish.

.5 Tint each coat of paint progressively lighter to enable confirmation of number of coats.

.6 Unless otherwise approved, apply a minimum of four (4) coats of paint where deep or bright colours are used to achieve satisfactory results.

.7 Sand and dust between each coat to provide an anchor for next coat and to remove defects visible from a distance up to 39 inch.

.8 Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.

.9 Allow applied coat to dry before next coat is applied.

.10 Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

.11 Continue paint finish behind wall-mounted items such as chalk and tack boards.

3.4 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

.1 Refer to applicable codes, regulations, and authority having jurisdiction for colour coding and identification banding of equipment, duct work, piping, and conduit required.

.2 Unless otherwise specified, paint all unfinished conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and texture to match adjacent surfaces in the following areas:

.1 Exposed-to-view exterior and interior areas.

.2 High humidity interior areas.

.3 In unfinished areas leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish; touch up scratches and marks.

.4 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.

.5 Do not paint over nameplates.

.6 Paint inside of ductwork where visible behind louvers, grilles and diffusers for a minimum of 18 inch or beyond sight line, whichever is greater, with primer and one (1) coat of matt black (non-reflecting) paint.

.7 Paint the inside of light valances gloss white.

.8 Paint disconnect switches for fire alarm system and exit light systems in red enamel.

.9 Paint yellow or band all natural gas piping in accordance with mechanical specification requirements.

.10 Backprime and paint face and edges of plywood service panels for telephone and electrical equipment before installation to match adjacent wall surface. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

.11 Paint exterior steel electrical light standards. Do not paint outdoor transformers and substation equipment.

.12 Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings that were removed prior to finishing.

3.5 FIELD QUALITY CONTROL

.1 Section 01 45 00: Quality Control.

.2 Acceptable Surfaces:

.1 No visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than 39 inch.

.2 No visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than 39 inch.

.3 No visible defects are evident on ceiling, soffit and other overhead surfaces when viewed at normal viewing angles.

.4 Uniformity of colour, sheen, texture, and hiding across full surface area.

3.6 CLEANING

.1 Section 01 74 00: Cleaning installed work.

.2 Collect waste material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

3.7 SCHEDULE

.1 Refer to Finishes Schedule on Drawings.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Toilet, washroom accessories.

.2 Grab bars.

1.2 RELATED SECTIONS

.1 Section 09 30 00 - Tiling

1.3 REFERENCES

.1 ASTM A123/A123M-15 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

.2 ASTM A167-99(2009) - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

.3 ASTM A269/A269M-15 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.

.4 ASTM A1008/A1008M-15 - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.

.5 ASTM B456-11e1 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.

.6 CSA-B651-12 - Accessible Design for the Built Environment.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.

.2 Coordination:

.1 Coordinate with other work having a direct bearing on work of this section.

.2 Coordinate the work with the placement of internal wall reinforcement to receive anchor attachments.

1.5 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.

1.6 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

.2 Installation Data: Manufacturer's special installation requirements including special procedures, perimeter conditions requiring special attention.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

1.8 REGULATORY REQUIREMENTS

.1 Conform to authority having jurisdiction guidelines, applicable code, CSA-B651 for accessibility requirements for the handicapped.

Part 2 Products

2.1 MANUFACTURERS

.1 Varies – Refer to Schedules Section 3.4.

.2 Other acceptable manufacturers offering functionally and aesthetically equivalent products.

.1 Bradley Corp.

.2 Bobrick.

.3 Frost.

.3 Substitutions: Refer to Section 01 25 00.

2.2 MATERIALS

.1 Varies – Refer to Schedules Section 3.4.

2.3 FABRICATION

.1 As per manufacturer's standard practice and instructions.

2.4 KEYING

.1 Supply keys for each accessory to Owner. Confirm quantity for each with Owner.

2.5 FINISHES

.1 Galvanizing: Hot-dip galvanized to appropriate grade for type and size of steel material indicated, coating thickness ASTM A123/A123M. Galvanize ferrous metal and fastening devices.

.2 Shop Primed Ferrous Metals: Pre-treat and clean, spray apply one coat primer and bake.

.3 Enamel: Pre-treat to clean condition, apply one (1) coat primer and minimum two (2) coats epoxy and/or electrostatic baked enamel.

.4 Chrome/Nickel Plating: ASTM B456, Type SC 2, polished finish unless otherwise indicated.

.5 Stainless Steel: No. 4 Satin or Polished finish, as indicated.

.6 Back paint components where contact is made with building finishes to prevent electrolysis.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 70 00: Verify existing conditions before starting work.

.2 Verify that field measurements are as instructed by the manufacturer, indicated on product data.

.3 Verify that site conditions are ready to receive work and dimensions are as indicated on Shop Drawings, instructed by the manufacturer.

.4 Verify exact location of accessories for installation.

3.2 PREPARATION

.1 Deliver inserts and rough-in frames to site for timely installation.

.2 Provide templates and rough-in measurements as required.

3.3 INSTALLATION

.1 Install accessories to manufacturer's written instructions, CSA-B651.

.2 Install plumb and level, securely and rigidly anchored to substrate.

3.4 SCHEDULES

.1 Toilet Tissue Dispenser (TP): Supplied by Owner; Installed by Contractor.

.2 Soap Dispenser (SD): Supplied by Owner; Installed by Contractor.

.3 Waste receptacle (WR): Wall-mounted waste receptacle, 22 gauge welded stainless steel construction.

.1 Manufacturer/Model:

.1 Frost; 303-3NL

.2 Approved equal

.4 Napkin Disposal (ND): Surface-mounted feminine product disposal, 22 gauge welded stainless steel construction.

.1 Manufacturer/Model:

.1 Frost; 622

.2 Approved equal

.5 Mirror (MI): 2 x 3 ft size, vandal resistant concealed three way mounting, stainless steel frame, full galvanized steel panel reflective surface.

.1 Manufacturer/Model:

.1 Frost; 941-2436SS

.2 Approved equal

.6 Baby Change Table (BCT): Surface-mounted fold-up baby change table, ani-microbial heavy duty cradle, withstand loading up to 181.4 kg, stainless steel construction.

.1 Manufacturer/Model:

.1 Frost; 1124-S

.2 Approved equal

.7 Collapsible Coat Hook (CCH): Safety coat hook, surface mounted and collapsible, 16 gauge stainless steel burr-free construction, capacity of 11kg before collapsing.

.1 Manufacturer/Model:

.1 Frost; 1150-SS

.2 Approved equal

.8 Hand Dryer (HD): Eco-friendly, high speed automatic hand dryer, touchless operation, timing protection 60 second auto shut off, 18 gauge stainless steel construction.

.1 Manufacturer/Model:

.1 Frost; 1196

.2 Approved equal

.9 Shelf: Heavy duty, 4 inch deep by 36 inch long shelf, safety edges on all protruding sides, 22 gauge stainless steel welded construction.

.1 Manufacturer/Model:

.1 Frost; 950-4

.2 Approved equal

.10 Horizontal Grab Bar (GB): 18 gauge stainless steel tubing, 1 1/2 inch diameter flanges, concealed mounting plate, 4 stainless steel vandal resistant screws.

.1 Manufacturer/Model:

.1 Frost; 1001-NP24

.2 Approved equal

.11 L-shaped Grab Bar (GB): 18 gauge stainless steel tubing, 1 1/2 inch diameter flanges, concealed mounting plate, 4 stainless steel vandal resistant screws.

.1 Manufacturer/Model:

.1 Frost; 1003-NP30x30

.2 Approved equal

.12 Fold-down Grab Bar (FDGB): 16 gauge stainless steel tubing, 1 ¼ inch outside diameter, wall-mounted, peened grip.

.1 Manufacturer/Model:

.1 Frost; 1055-S

.2 Approved equal

END OF SECTION