23-630

Lima Architects Inc

The Corporation of the City of Burlington

Fire Station #2, Burlington ON - Interior Renovation and Window Replacement

Architectural

February 28, 2024

Interior alterations and window replacement

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Part 1 General

1.1 GENERAL CONDITIONS DECLARATION

.1 CCDC 2-2008 - The General Conditions of the Stipulated Price Contract; is the General Conditions between the Owner and Contractor.

1.2 SUPPLEMENTARY CONDITIONS

.1 Refer to Document THE CORPORATION OF THE CITY OF BURLINGTON AMENDMENTS TO CCDC2 – 2008 for amendments to these General Conditions.

END OF SECTION

Section 01 11 00
Summary of work

Part 1 General

1.1 SECTION INCLUDES

.1 Documents and terminology.
.2 Associated requirements.
.3 Work expectations.
.4 Work by other parties.
.5 Premises usage.

1.2 RELATED REQUIREMENTS

.1 Section 01 21 00 - Allowances.
.2 Section 01 35 69 - Sustainable Design Requirements.
.3 Section 01 78 00 - Closeout Submittals.
.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 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.

1.4 DESCRIPTION OF THE WORK

.1 Work of this Contract comprises renovation of Burlington Fire Station #2, located at 2300 Upper Middle Rd, Burlington, ON L7P 5A9; and identified as 20-433A.
.2 Division of the Work among Subcontractors 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.

1.5 CONTRACT METHOD

.1 Construct Work under single, stipulated price contract.
.2 Relations and responsibilities are between the Contractor and the Owner.
.3 Provide the required bonds to ensure such specified assurances to the Owner.
.4 Assigned Subcontractors are required to provide requested bonds covering faithful performance of subcontracted work, to the Owner plus payment of related obligations.
.5 Refer to Section 01 21 00 for cash allowance amounts applicable to assignable contracts.
.6 Assume responsibility for assigned contracts as Subcontracts forming part of the Work.

.7 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 and Owner accepts no responsibility for damages, suffered by any third party as a result of decisions made or actions based on the Contract Documents.

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

1.6 DOCUMENTS PROVIDED

.1 The Owner will supply the Contractor with a set of the Contract Documents in PDF format.

.2 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.

1.7 WORK SEQUENCE

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

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

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

1.8 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 Use of site and premises by the public.

.3 Construction Operations: Limited to areas noted on Drawings.

.4 Time Restrictions for Performing Interior Work: During current working hours.

1.9 OWNER OCCUPANCY

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

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

.3 Maintain fire and life safety systems and public access to exits during all stages of the Work.

END OF SECTION

Section 01 14 00
Work restrictions

Part 1 General

1.1 SECTION INCLUDES

.1 Connecting to existing services.
.2 Special scheduling requirements.

1.2 RELATED REQUIREMENTS

.1 Section 01 53 00 - Temporary Construction.
.2 Section 01 33 00 - Submittal Procedures.
.3 Section 01 35 69 - Sustainable Design Requirements.
.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 EXISTING SERVICES

.1 Notify Owner 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, 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 after normal working hours of occupants, preferably on weekends.
.3 Construct barriers in accordance with Section 01 53 00.

1.4 SPECIAL REQUIREMENTS

.1 Perform painting at Owner-occupied areas:
    .1 From Monday to Friday from 18:00 to 07:00 hours only.
    .2 On Saturdays, Sundays, and statutory holidays to Owner approval.
.2 Perform noise generating work:
    .1 From Monday to Friday from 18:00 to 07:00 hours.
    .2 On Saturdays, Sundays, and statutory holidays to Owner approval.
.3 Submit schedule of special requirements or disruptions in accordance with Section 01 33 00.

END OF SECTION

Section 01 19 00
Specifications and documents

Part 1 General

1.1 SECTION INCLUDES

.1 Words and terms.
.2 Complementary documents.
.3 Precedence of Documents.
.4 Specification grammar.

1.2 RELATED DOCUMENTS

.1 Document 00 52 10 - Agreement and Definitions: Precedence of documents.
.2 Document 00 72 13 - General Conditions - Stipulated Price.
.3 Section 01 11 00 – Summary of Work.
.4 Section 01 35 69 - Sustainable Design Requirements.
.5 This section describes requirements applicable to all sections within Divisions 02 to 49.

1.3 WORDS AND TERMS

.1 Conform to definitions and their defined meanings in the Agreement and Definitions portion of CCDC 2 for supplementary words and terms.
.2 The following words and terms are applicable to the Contract Documents for this project:
.3 Addendum: A document that amends the Bid Documents during the Bidding Period and becomes part of the Contract Documents when a Contract is executed. (Plural: Addenda).
.4 Agreement: The signed and sealed legal instrument binding parties in a Contract, describing in strict terms their mutual arrangement, roles and responsibilities, commencement, and completion responsibilities.
.5 Alternative Price: The amount stipulated by a Bidder for an Alternative and stated as an addition, a deduction, or no change to the Bid Price.
.6 Bid: To offer as a Bid stating for what price a Contractor will assume a Contract.
.7 Bid Documents: A set of documents consisting of the Instructions to Bidders, Bid Form, Contract Documents, and other information issued for the benefit of Bidders to prepare and submit a Bid.
.8 Bid Form: The specific and detailed form used to collect information about a Bid.
.9 Bidding: The process of preparing and submitting a Bid.
.10 Construction Documents: The Drawings and Project Manual. When combined with a Contract and Contract conditions, these documents form the Contract Documents.
.11 Contingency Allowance: An additional monetary amount added to a Project cost estimate and designated to cover unpredictable or unforeseen items of Work. The amount is usually based on some percentage of the estimated cost and expended and adjusted by Change Order. It is not intended to cover additions to the scope of Work.
.12 Cost Plus Contract: A Contract under which a Contractor is reimbursed for the direct and indirect costs for the performance of a Contract and, in addition, is paid a Fee for services. The Fee is usually stated as a stipulated price or as a percentage of cost.
.13 General Conditions: That part of the Contract Documents which sets forth many of the rights, responsibilities and relationships of the parties involved in a Contract.

.14 Instructions To Bidders: Instructions contained in the Bid Documents to convey an Owner's expectations and criteria associated with submitting a Bid.
.15 Section: A portion of a Project Specification covering one or more segments of the total Work or requirements. Sections are included in a Project manual as required to meet Project requirements.
.16 Standard: A document describing a grade or a level of quality, which has been established by a recognized agency or organization, utilizing an internal voting process.
.17 Separate Price: A separate price for work to be added to the base price if selected by the Owner. This price type is not a part of the base bid price.
.18 Stipulated Price: An amount set forth in a Stipulated Price Contract as the total payment for the performance of the Work. Sometimes referred to as a stipulated sum or a lump sum stipulated price.
.19 Tender: A term that was formally abandoned by CCDC and the Canadian Construction industry in the early 1980's in favour of the preferred term Bid.
.20 Unit Price: The amount payable for a single unit of Work as stated in a Schedule of Prices.
.21 Install: To remove from site storage, move or transport to intended location, install in position, connect to utilities, repair site caused damage, and make ready for use.
.22 Supply: To acquire or purchase, ship or transport to the site, unload, remove packaging to permit inspection for damage, re-package, replace damaged items, and safely store on-site.

1.4 COMPLEMENTARY DOCUMENTS

.1 Generally, drawings indicate graphically, the dimensions and location of components and equipment. Specifications indicate specific components, assemblies, and identify quality.
.2 Drawings, specifications, diagrams and schedules are complementary, each to the other, and what is required by one, to be binding as if required by all.
.3 Should any conflict or discrepancy appear between documents, which leaves doubt as to the intent or meaning, apply the Precedence of Documents article below or obtain guidance or direction from Consultant.
.4 Examine all discipline drawings, specifications, schedules, diagrams and related Work to ensure that Work can be satisfactorily executed.
.5 All specification sections of the Project Manual and Drawings are affected by requirements of Division 01 sections.

1.5 PRECEDENCE OF DOCUMENTS

.1 In the event of conflict within and between the Contract Documents, the order of priority within specifications and drawings for this project are - from highest to lowest:
    .1 the Agreement and Definitions between the Owner and the Contractor;
    .2 the Definitions;
    .3 Supplementary Conditions;
    .4 the General Conditions;
    .5 Sections of Division 01 of the specifications;
    .6 Sections of Divisions 02 through 49 of the specifications.
    .7 Schedules and Keynotes:
        .1 Material and finishing schedules within the specifications, then;
        .2 Material and finishing schedules on drawings, then;
        .3 Keynotes and definitions thereto, then;
    .8 Diagrams.

.9 Drawings:
- .1 Drawings of larger scale shall govern over those of smaller scale of the same date, then;
- .2 Dimensions shown on drawings shall govern over dimensions scaled from drawings, then;
- .3 Location of utility outlets indicated on architectural detail drawings takes precedence over positions or mounting heights located on mechanical or electrical Drawings.

.10 Later dated documents shall govern over earlier documents of the same type.

.2 In the event of conflict between documents, the decision of the Consultant shall be final.

1.6 SPECIFICATION GRAMMAR

.1 Specifications are written in the imperative (command) mode, in an abbreviated form.

.2 Imperative language of the technical sections is always directed to the Contractor identified as a primary constructor, as sole executor of the Contract, unless specifically noted otherwise.
- .1 This form of imperative (command) mode statement requires the primary constructor to perform such action or Work.
- .2 Perform all requirements of the Contract Documents whether stated imperatively or otherwise.

.3 Division of the Work among subcontractors, suppliers, or others is solely the prime constructor's responsibility. The Consultant(s) and specification authors assume no responsibility to function or act as an arbiter to establish subcontract scope or limits between sections or divisions of Work.

END OF SECTION

Section 01 21 00
Allowances

Part 1 General

1.1 SECTION INCLUDES

.1 Cash allowances.
.2 Inspection and testing allowances.

1.2 RELATED REQUIREMENTS

.1 Section 01 29 00 - Payment Procedures.
.2 Section 01 35 69 - Sustainability Design Requirements.
.3 Section 01 25 00 - Substitution Procedures.
.4 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.

1.4 INSPECTING AND TESTING ALLOWANCES

.1 Costs Included in Inspecting and Testing Allowances: Cost of engaging an inspecting or testing agency; execution of inspecting and tests; and reporting results.

.2 Costs Not Included in the Inspecting and Testing Allowance But Included in the Contract Price:
  .1 Costs of incidental labour and facilities required to assist inspecting or testing agency.
  .2 Costs of testing services used by Contractor separate from Contract Document requirements.
  .3 Costs of retesting upon failure of previous tests as determined by Consultant.

.3 Payment Procedures:
  .1 Submit one (1) copy of the inspecting or testing firm's invoice with next application for payment.
  .2 Pay invoice on approval by Consultant.

.4 The total amount of the cash allowance shall be $5,000 and will cover the following:
  .1 Independent Inspection and Testing services.

END OF SECTION

Section 01 25 00
Substitution procedures

Part 1 General

1.1 SECTION INCLUDES

.1 Substitutions.

1.2 RELATED REQUIREMENTS

.1 Section 01 21 00 - Allowances.
.2 Section 01 23 00 - Alternates.
.3 Section 01 29 00 - Payment Procedures.
.4 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 within fifteen (15) days after date of Owner-Contractor Agreement.
.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 Contractor:
  .1 Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
  .2 Will provide the same warranty for the Substitution as for the specified Product.
  .3 Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
  .4 Waives claims for additional costs or time extension which may subsequently become apparent.
.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 three (3) copies of request for Substitution for consideration. Limit each request to one (1) proposed Substitution.
  .2 Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
  .3 The Consultant will notify Contractor in writing of decision to accept or reject request.

END OF SECTION

Section 01 29 00
Payment procedures

Part 1 General

1.1 SECTION INCLUDES

.1 Applications for progress payments.
.2 Substantial performance procedures.
.3 Release of hold-back procedures.
.4 Price adjustments.

1.2 RELATED REQUIREMENTS

.1 Refer to CCDC 2-2008 for specific requirements.
.2 The Corporation of the City of Burlington Amendments to CCDC2 - 2008

1.3 RELATED REQUIREMENTS

.1 Section 01 25 00 - Substitution Procedures.

1.4 APPLICATIONS FOR PROGRESS PAYMENT

.1 Refer to The Corporation of the City of Burlington Amendments to CCDC2 - 2008

1.5 PROGRESS PAYMENT

.1 Refer The Corporation of the City of Burlington Amendments to CCDC2 - 2008

1.6 PROGRESSIVE RELEASE OF HOLD-BACK

.1 Refer The Corporation of the City of Burlington Amendments to CCDC2 - 2008.

1.7 SUBSTANTIAL PERFORMANCE OF THE WORK

.1 Refer The Corporation of the City of Burlington Amendments to CCDC2 - 2008.

1.8 PAYMENT OF HOLD-BACK ON SUBSTANTIAL PERFORMANCE OF THE WORK

.1 Refer The Corporation of the City of Burlington Amendments to CCDC2 - 2008.

1.9 FINAL PAYMENT

.1 Refer The Corporation of the City of Burlington Amendments to CCDC2 - 2008.

END OF SECTION

Section 01 31 00
Project management and coordination

Part 1 General

1.1 SECTION INCLUDES

.1 Coordination Work with other contractors and work by Owner under administration of Consultant.
.2 Scheduled progress meetings.

1.2 RELATED REQUIREMENTS

.1 Section 01 12 00 - Multiple Contract Summary.
.2 Section 01 35 69 - Sustainable Design Requirements.
.3 Section 01 32 00 - Construction Progress Documentation.
.4 Section 01 33 00 - Submittal Procedures.
.5 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 COORDINATION

.1 Perform coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities and construction Work, with progress of Work of other contractors, under instructions of Consultant.

1.4 PROJECT MEETINGS

.1 Schedule and administer bi-weekly project meetings throughout progress of Work as determined by Consultant.
.2 Schedule and administer pre-installation meetings when specified in sections and when required to coordinate related or affected Work.
.3 Prepare agenda for meetings.
.4 Distribute written notice of each meeting four (4) days in advance of meeting date to Consultant and Owner.
.5 Preside at meetings.
.6 Record minutes. Include significant proceedings and decisions. Identify action by parties.
.7 Reproduce and distribute copies of minutes within three (3) days after each meeting and transmit to meeting participants, affected parties not in attendance.

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

.4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences as specified in Section 01 51 00.
.5 Delivery schedule of specified equipment as specified in Section 01 32 00.
.6 Site safety as specified in Section 01 35 29.
.7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.
.8 Owner-furnished Products.
.9 Record drawings as specified in Section 01 78 23.
.10 Maintenance material and data as specified in Section 01 78 23.
.11 Take-over procedures, acceptance, and warranties as specified Section 01 78 23.
.12 Monthly progress claims, administrative procedures, photographs, and holdbacks.
.13 Appointment of inspection and testing agencies or firms as specified in Section 01 43 00.
.14 Insurances and transcript of policies.

.6 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.
.7 Comply with instructions of Consultant for use of temporary utilities and construction facilities.

1.6 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.

1.7 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 as directed by Consultant.

1.8 CONSTRUCTION PROGRESS MEETINGS

.1 Contractor, major subcontractors involved in Work Consultant and Owner are to be in attendance.
.2 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within 4 days after meeting.
.3 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.

1.9 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.

1.10 COORDINATION DRAWINGS

.1 Provide information required by Consultant for preparation of coordination Drawings.
.2 Review and approve revised Drawings for submittal to Consultant.

1.11 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 and for access to Owner-occupied areas.
.4 Notify Consultant of instructions for completion of items of Work determined in Consultant's final inspection.

END OF SECTION

Section 01 32 00
Construction progress documentation

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 REQUIREMENTS

.1 Section 01 33 00 - Submittal Procedures.
.2 Section 01 35 69 - Sustainable Design Requirements.
.3 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 Submittal schedule for LEED credits on products and equipment.
  .5 Product Delivery Schedule.
  .6 Cash Allowance Schedule for acquiring Products only or Products and Installation, or Installation only.
  .7 Shutdown or closure activity.
.2 Schedule Format.
  .1 Prepare schedule in form of a horizontal GANTT bar chart.
.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 Submit one (1) opaque reproduction, plus two (2) copies to be retained by Consultant.
  .4 Consultant will review schedule and return review copy within ten (10) days after receipt.
  .5 Resubmit finalized schedule within seven (7) days after return of review copy.
  .6 Submit revised progress schedule with each application for payment.
  .7 Distribute copies of revised schedule to:
    .1 Job site office.
    .2 Subcontractors.
    .3 Other concerned parties.
  .8 Instruct recipients to report to Contractor within ten (10) days, any problems anticipated by timetable shown in schedule.

1.4 CONSTRUCTION PROGRESS 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 chart with separate line for each major 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 Indicate projected percentage of completion of each item as of first day of month.
.10 Indicate progress of each activity to date of submission schedule.
.11 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.
.12 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 CRITICAL PATH SCHEDULING

.1 Include complete sequence of construction activities.
.2 Show projected percentage of completion of each item as of first day of month.
.3 Indicate progress of each activity to date of submission schedule.
.4 Show 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.
.5 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.

1.6 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 reviewed submittals will be required from Consultant.

END OF SECTION

Section 01 33 00
Submittal procedures

Part 1 General

1.1 SECTION INCLUDES

.1 Shop Drawings and product data.
.2 Samples.
.3 Certificates and transcripts.

1.2 RELATED REQUIREMENTS

.1 Section 01 32 00 - Construction Progress Documentation.
.2 Section 01 35 69 - Sustainable Design Requirements.
.3 Section 01 78 00 - Closeout Submittals.
.4 Other sections requesting submittals.
.5 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 ADMINISTRATIVE

.1 Submit to Consultant submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
.2 Work affected by submittal shall not proceed until review is complete.
.3 Present Shop Drawings, product data, samples and mock-ups in SI (metric) units.
.4 Where items or information is not 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 duplicate 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.
.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-UPS

.1 Erect mock-ups to Section 01 45 00.

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.
.3 Submit LEED credit criteria associated with specified products in accordance with LEED requirements.

END OF SECTION

Section 01 35 29
Health, safety, and emergency response procedures

Part 1 General

1.1 SECTION INCLUDES

.1 Safety requirements and adherence.

1.2 RELATED REQUIREMENTS

.1 Section 01 31 00 - Project Management and Coordination.
.2 Section 01 33 00 - Submittal Procedures.
.3 Section 01 35 69 - Sustainable Design Requirements.
.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 REFERENCE STANDARDS

.1 Province of Ontario: Occupational Health and Safety Act, Regulation and Code R.S.A - Amended 1995, including requirements for a "Prime Contractor" as defined by the Act.

1.4 RESPONSIBILITY

.1 The "Prime Contractor" according 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, territorial and local statutes, regulations, and ordinances, and with site-specific 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 Province having jurisdiction. Advise Consultant verbally and in writing.

1.5 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.
.3 Perform Work in accordance with Section 01 41 00 - Regulatory Requirements and this section.

1.6 POSTING OF DOCUMENTS

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

1.7 CORRECTION OF NON-COMPLIANCE

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

1.8 HAZARDOUS WORK

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

.2 Use powder actuated devices only after receipt of written permission from Owner.

1.9 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.

1.10 FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction 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.

END OF SECTION

Section 01 45 00
Quality control

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 REQUIREMENTS

.1 Section 01 21 00 - Allowances.
.2 Section 01 35 69 - Sustainable Design Requirements.
.3 Section 01 43 00 - Quality Assurance.
.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 REFERENCE STANDARDS

.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.

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.

1.6 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.

1.7 PROCEDURES

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

1.8 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.

END OF SECTION

Section 01 51 00
Temporary utilities

Part 1 General

1.1 SECTION INCLUDES

.1 Temporary utilities.
.2 Salvaging products for reuse.

1.2 RELATED REQUIREMENTS

.1 Section 01 35 69 - Sustainable Design Requirements.
.2 Section 01 52 00 - Construction Facilities.
.3 Section 01 53 00 - Temporary Construction.

1.3 WATER SUPPLY

.1 Owner will 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 Owner will pay for utility charges at prevailing rates.

1.4 TEMPORARY POWER AND LIGHT

.1 Owner will provide a source for, and pay the costs of temporary power during construction for temporary lighting and operating of power tools, to a maximum supply of 120 volt, 30 amps.
.2 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

Section 01 61 00
Common product requirements

Part 1 General

1.1 SECTION INCLUDES

.1 Product quality, availability, storage, handling, protection, and transportation.
.2 Product substitution procedures.
.3 Manufacturer's instructions.
.4 Quality of Work, coordination and fastenings.
.5 Existing facilities.

1.2 RELATED REQUIREMENTS

.1 Section 01 42 00 - References: Other terms used in the Project Manual.
.2 Section 01 35 69 - Sustainable Design Requirements.
.3 Section 01 25 00 - Substitution Procedures.
.4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 TERMINOLOGY

.1 New: Produced from new materials.
.2 Re-newed: Produced or rejuvenated from an existing material to like-new condition to serve a new or existing service.
.3 Defective: A condition determined exclusively by the Owner.

1.4 PRODUCT QUALITY

.1 Products, materials, equipment, parts or assemblies (referred to as Products) incorporated in Work: New, not damaged or defective, of best quality (compatible with specification requirements) for purpose intended. If requested, provide evidence as to type, source and quality of Products provided.
.2 Defective Products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.
.3 Should any dispute arise as to quality or fitness of Products, decision rests strictly with Consultant.
.4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
.5 Permanent labels, trademarks and nameplates on Products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.5 AVAILABILITY

.1 Immediately upon signing Contract, review Product delivery requirements and anticipate foreseeable supply delays for any items.
.2 If delays in supply of Products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
.3 In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves

right to substitute more readily available Products of similar character, at no increase in Contract Price or Contract Time.

1.6 STORAGE AND PROTECTION

.1 Store and protect Products in accordance with manufacturers' written instructions.
.2 Store with seals and labels intact and legible.
.3 Store sensitive Products in weather tight, climate controlled, enclosures in an environment favourable to Product.
.4 Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.
.5 Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
.6 Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

1.7 TRANSPORTATION AND HANDLING

.1 Transport and handle Products in accordance with manufacturer's written instructions.
.2 Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
.3 Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.8 PRODUCT CHANGES

.1 Change in Product/Products: Submit request for substitution or alternative in accordance with Section 01 25 00.

1.9 EXISTING UTILITIES

.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to building occupants.
.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

1.10 MANUFACTURER'S WRITTEN INSTRUCTIONS

.1 Unless otherwise indicated in specifications, install or erect Products to manufacturer's written instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
.2 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.
.3 Improper installation or erection of Products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

1.11 QUALITY OF WORK

.1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.
.2 Do not employ anyone unskilled in their required duties. Consultant reserves right to require dismissal from site any workers deemed incompetent or careless.

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

1.12 COORDINATION

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

1.13 CONCEALMENT

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

1.14 REMEDIAL WORK

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

1.15 LOCATION OF FIXTURES

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

1.16 FASTENINGS

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
.2 Prevent electrolytic action between dissimilar metals and materials.
.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
.5 Keep exposed fastenings to a minimum, space evenly and install neatly.
.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.17 FASTENINGS - EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use Type 304 or 316 stainless steel for exterior areas.
.3 Bolts may not project more than one diameter beyond nuts.
.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.18 PROTECTION OF WORK IN PROGRESS

.1 Prevent overloading of any part of the Project.

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

END OF SECTION

Section 01 71 00
Examination and preparation

Part 1 General

1.1 SECTION INCLUDES

.1 Field engineering survey services to measure and stake site.
.2 Recording of subsurface conditions found.
.3 Survey services to determine measurement inverts for the Work.
.4 Requirements and limitations for cutting and patching the Work.

1.2 RELATED REQUIREMENTS

.1 Section 01 35 69 - Sustainable Design Requirements.
.2 Section 01 25 00 - Substitution Procedures.
.3 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 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 set out in Section 01 29 00.

1.4 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.

1.5 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.

1.6 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 2 m of structures. Cap or seal lines at cut-off points as directed by Consultant.

1.7 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.

END OF SECTION

Section 01 73 00
Execution

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 REQUIREMENTS

.1 Section 01 71 00 - Examination and Preparation.
.2 Section 01 35 69 - Sustainable Design Requirements.
.3 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 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.

.13 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material, for full thickness of the constructed element.

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

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

END OF SECTION

Section 01 73 29
Cutting and patching

Part 1 General

1.1 SECTION INCLUDES

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

1.2 RELATED REQUIREMENTS

.1 Section 01 11 00 - Summary of Work: Work by Owner.
.2 Section 01 12 00 - Multiple Contract Summary: Work by Owner or by third party contractors.
.3 Section 01 25 00 - Substitution Procedures: Product options and substitutions.
.4 Section 01 32 00 - Construction Progress Documentation: Submittals and scheduling.
.5 Section 01 35 69 - Sustainable Design Requirements.
.6 Section 01 61 00 - Common Product Requirements.
.7 Section 07 84 00 - Firestopping.
.8 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.
.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 air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
.7 At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire resistant material to Section 07 84 00, to full thickness of the penetrated element.
.8 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

Section 01 74 10
Cleaning

Part 1 General

1.1 SECTION INCLUDES

.1 Progressive cleaning.
.2 Cleaning prior to acceptance.

1.2 RELATED REQUIREMENTS

.1 Section 01 35 69 - Sustainable Design Requirements.
.2 Section 01 74 19 - Construction Waste Managing and Disposal.
.3 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, including that caused by Owner or other Contractors.
.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 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
.4 Containers:
  .1 Provide on-site steel framed, hinged lid containers for collection of waste materials and debris.
  .2 Provide and use clearly marked, separate bins for recycling.
  .3 Refer to Section 01 74 19.
.5 Remove waste material and debris from site and deposit in waste container at end of each working day.
.6 Dispose of waste materials and debris off site.
.7 Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
.8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
.9 Provide adequate ventilation during use of volatile or noxious substances. Use of enclosure ventilation systems is not permitted for this purpose.
.10 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
.11 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 products and debris including that caused by Owner or other Contractors.
.5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.
.6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
.7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
.8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors.
.9 Clean lighting reflectors, lenses, and other lighting surfaces.
.10 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
.11 Clean and polish surface finishes, as recommended by manufacturer.
.12 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
.13 Remove dirt and other disfiguration from exterior surfaces.
.14 Clean equipment and fixtures to a sanitary condition; clean filters of mechanical equipment.
.15 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

3.3 FINAL PRODUCT CLEANING

.1 Execute final cleaning prior to final project assessment. Refer to Section 01 74 10.
.2 Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
.3 Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
.4 Remove waste and surplus materials, rubbish, and construction facilities from the site.

END OF SECTION

Section 01 74 19
Construction waste management and disposal

Part 1 General

1.1 SECTION INCLUDES

.1 Waste goals.
.2 Waste management plan.
.3 Third party responsibilities.
.4 Waste management plan implementation.
.5 Disposal of waste.
.6 Forms for documenting program.

1.2 RELATED REQUIREMENTS

.1 Section 01 33 00 - Submittal Procedures.
.2 Section 01 35 69 - Sustainable Design Requirements.
.3 Section 01 74 10 - Cleaning.
.4 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.

.2 Prepare and submit the following submittals prior to project start-up:
- .1 Submit two (2) copies of completed Waste Audit.
- .2 Submit two (2) copies of completed Waste Reduction Work Plan.

1.5 OWNER WASTE MANAGEMENT GOALS

.1 Owner has established this Project is to generate the least amount of waste possible. This requires that construction processes ensure as little waste as possible, either due to error, poor planning, breakage, mishandling, contamination, or other factors.

.2 Owner recognizes that waste in any project is inevitable, but indicates that as much of the waste materials as economically feasible. Reused, salvage, or recycle as required.

.3 Minimize waste disposal to landfills.

1.6 STORAGE, HANDLING AND PROTECTION

.1 Store, materials to be reused, recycled and salvaged in locations as directed by Consultant.

.2 Unless specified otherwise, materials for removal 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.

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.

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

Section 01 78 00
Closeout submittals

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 REQUIREMENTS

.1 Section 01 33 00 - Submittal Procedures.
.2 Section 01 35 69 - Sustainable Design Requirements.
.3 Section 01 45 00 - Quality Control.
.4 Section 01 79 00 - Demonstration and Training.
.5 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 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 Work is complete and ready for Final Inspection.
.4 Final Inspection: When items noted above are completed, request final inspection of Work by Consultant, and Owner. If Work is deemed incomplete by Consultant, complete outstanding items and request reinspection.
.5 Declaration of Substantial Performance: When 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.
.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 2019 format on DVD.

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.

1.7 RECORD (AS-BUILT) DOCUMENTS AND SAMPLES

.1 In addition to requirements in General Conditions, maintain at the site for 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 apart from documents used for construction. Provide files, racks, and secure storage.

.3 Label as-built documents and file in accordance with section number listings in List of Contents of 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.

1.8 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.

.2 Employ a competent computer draftsperson to indicate changes on the electronic set of record drawings. Provide updated Record Drawings in Autocad.

.3 Submit completed record documents to Owner on a DVD, accompanied by three (3) hard copy sets.

1.9 WARRANTIES AND BONDS

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

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

.3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (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

Section 02 41 19
Selective demolition

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.
.5 Identification of utilities.
.6 Refer to items as indicated.

1.2 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 6 mm 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.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Sequencing: Sequence work to requirements of Section 01 11 00.
.2 Scheduling: Schedule work to requirements of Section 01 31 00.
  .1 Schedule Work to precede new construction.
  .2 Describe demolition removal procedures and schedule.

1.4 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.
.2 Record Documentation: Accurately record actual locations of capped utilities.

1.5 REGULATORY REQUIREMENTS

.1 Conform to applicable code for demolition work, dust control, products requiring electrical disconnection.
.2 Obtain required permits from authorities.
.3 Do not close or obstruct egress width to any building or site exit.

.4 Do not disable or disrupt building fire or life safety systems without three (3) days prior written notice to Owner.
.5 Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

1.6 SITE CONDITIONS

.1 Conduct demolition to minimize interference with adjacent and occupied 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.
.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 including signage for exit or building egress.

3.2 DEMOLITION

.1 Disconnect cap 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.

END OF SECTION

Section 03 54 00
Cast underlayment

Part 1 General

1.1 SECTION INCLUDES

.1 Liquid applied cementitious self-leveling floor underlayment.

1.2 REFERENCE STANDARDS

.1 ASTM C472-99(2009) - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete.
.2 CSA-A23.1-14/A23.2-14 - Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.

1.3 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Product Data: Provide physical characteristics, product limitations.

1.4 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Manufacturer's Instructions: Indicate mix instructions.
.3 Certificate: Certify that Products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.6 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 certification requirements.
.2 Applicator Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.7 MOCK-UPS

.1 Section 01 43 00: Requirements for mock-up.
.2 Locate where directed by Consultant.
.3 Approved mock-up may remain as part of the Work.

1.8 SITE CONDITIONS

.1 Do not install underlayment until floor penetrations and peripheral work are complete.
.2 Maintain minimum ambient temperatures of 10 degrees C, 24 hours before, during and 72 hours after installation of underlayment.
.3 During the curing process, ventilate spaces to remove excess moisture.

Part 2 Products

2.1 MANUFACTURERS

.1 Maxxon Corporation; Product : 'Level-Right WearTop' Cementitious Underlayment (exposed locations)
.2 Maxxon Corporation; Product: 'Level-Right' - Cementitious Underlayment (finished locations).
.3 Substitutions: Refer to Section 01 25 00.

2.2 DESCRIPTION

.1 Regulatory Requirements:
  .1 Conform to applicable code for combustibility or flame spread requirements.
  .2 Provide certificate of compliance from authority having jurisdiction indicating approval of underlayment materials in the required fire rated assembly.

2.3 MATERIALS

.1 Underlayment: Cementitious based mix.
.2 Water: Potable and not detrimental to underlayment mix materials.
.3 Primer: Manufacturer's recommended type.
.4 Joint and Crack Filler: Latex based.
.5 Mesh Reinforcement: Galvanized diamond metal lath, 1.84 kg/sq m.

2.4 MIXING

.1 Site mix materials in accordance with manufacturer's written instructions.
.2 Mix to achieve following characteristics:
  .1 Density: 115 lb/cu ft minimum dry density.
  .2 Compressive Strength: CSA-A23.1/A23.2, minimum 17.2 MPa.
  .3 Fire Hazard Classification: Flame Spread/Smoke Developed rating of 0/0.
.3 Mix to self-leveling consistency.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.
.2 Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum bi-products, or other compounds detrimental to underlayment material bond to substrate.

3.2 PREPARATION

.1 Remove substrate surface irregularities. Fill voids and deck joints with filler. Finish smooth.
.2 Vacuum clean surfaces.
.3 Prime substrate to manufacturer's written instructions. Allow to dry.
.4 Close floor openings.

3.3 APPLICATION

.1 Install underlayment and mesh reinforcement to manufacturer's instructions.
.2 Place to thickness as required on site condition and to provide indicated slopes.
.3 Place before partition installation.

3.4 CURING

.1 Air cure to manufacturer's written instructions.

3.5 APPLICATION TOLERANCE

.1 Section 01 73 00: Tolerances.
.2 Top Surface: Level to 3 mm in 3 m.
.3 Install underlayment to tolerances listed in CSA-A23.1/A23.2.

3.6 FIELD QUALITY CONTROL

.1 Placed Material: Inspecting for conformance to specification requirements.

3.7 PROTECTION

.1 Section 01 78 23: Protecting installed work.
.2 Do not permit traffic over unprotected floor underlayment surfaces.

END OF SECTION

Section 05 50 00
Metal fabrications

Part 1 General

1.1 SECTION INCLUDES

.1 Shop fabricated miscellaneous metal items.

1.2 REFERENCE STANDARDS

.1 AAMA 2603-15 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels..

.2 AAMA 2604-10 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels

.3 AAMA 2605-11 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

.4 ASTM A53/A53M-12 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

.5 ASTM A153/A153M-16a - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

.6 ASTM A307-12 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.

.7 ASTM A500/A500M-10a - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

.8 ASTM A501-07 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.

.9 ASTM B177/B177M-11 - Standard Guide for Engineering Chromium Electroplating.

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

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

.12 ASTM B210M-12 - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes.

.13 ASTM B210-12 - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes.

.14 ASTM B211M-12e1 - Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod, and Wire.

.15 ASTM B211-12e1 - Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod, and Wire.

.16 ASTM B221M-13 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

.17 ASTM B221-14 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

.18 CSA-G40.20-13/G40.21-13 - General Requirements for Rolled or Welded Structural Quality Steel/ Structural Quality Steel.

.19 CSA-W47.1-09 (R2014) - Certification of Companies for Fusion Welding of Steel.

.20 CSA-W47.2-11 (R2015) - Certification of Companies for Fusion Welding of Aluminum.

.21 CSA-W48-06 (R2011) - Filler Metals and Allied Materials for Metal Arc Welding.
.22 CSA-W55.3-08 - Certification of Companies for Resistance Welding of Steel and Aluminum.
.23 CSA-W59-13 - Welded Steel Construction (Metal Arc Welding).
.24 CSA-W59.2-M1991 (R2008) - Welded Aluminum Construction.
.25 MPI (Master Painters Institute) – Architectural Painting Specifications Manual and Maintenance Repainting Manual.
.26 SSPC (The Society for Protective Coatings) - Steel Structures Painting Manual.

1.3 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Shop Drawings:
  .1 Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
  .2 Indicate welded connections using standard welding symbols. Indicate net weld lengths.

1.4 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.

1.5 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.6 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 14000 certification requirements.
.2 Prepare Shop Drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed at the place where the Project is located.

Part 2 Products

2.1 MATERIALS - STEEL

.1 Steel Sections and Plates: CSA-G40.20/G40.21, Grade 350W.
.2 Steel Pipe: ASTM A53/A53M, Grade A, Schedule 40, standard weight, galvanized finish.
.3 Steel Tubing: ASTM A500/A500M, Grade B, galvanized finish.
.4 Fasteners: Conforming to ASTM A307, Grade A, in areas not exposed to view, use unfinished bolts with hexagon heads and nuts. In areas exposed to view, use bolts, nuts, washers, rivets, lock washers, anchor bolts, machine screws and machine bolts Z275 zinc coated in accordance with ASTM A653/A653M. Supply bolts of lengths required to suit thickness of material being joined, but not projecting more than 6 mm beyond nut, without the use of washers. .
.5 Bolts, Nuts, and Washers: ASTM A307, galvanized to ASTM A153/A153M for galvanized components.
.6 Welding Materials: Type required for materials being welded.
.7 Welding Filler Material: CSA-W48.
.8 Shop and Touch-Up Primer: SPCC-Paint 15.
.9 Primer: As specified in Section 09 91 00.
.10 Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic zinc-rich primer.

2.2 FABRICATION

.1 Fit and shop assemble items in largest practical sections, for delivery to site.
.2 Fabricate items with joints tightly fitted and secured.
.3 Continuously seal joined members by continuous welds.
.4 Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
.5 Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
.6 Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.3 FABRICATION TOLERANCES

.1 Squareness: 3 mm maximum difference in diagonal measurements.
.2 Maximum Offset Between Faces: 1.6 mm.
.3 Maximum Misalignment of Adjacent Members: 1.6 mm.
.4 Maximum Bow: 3 mm in 1.2 m.
.5 Maximum Deviation From Plane: 1.6 mm in 1.2 m.

2.4 FINISHES - STEEL

.1 Prepare surfaces to be primed in accordance with SPCC SP 2.
.2 Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
.3 Do not prime surfaces in direct contact with concrete or where field welding is required.
.4 Prime paint items with one (1) coat.
.5 Structural Steel Members: Galvanize after fabrication appropriate grade for type and size of steel material indicated, with zinc coating thickness ASTM A123/A123M.
.6 Non-structural Items: Galvanized after fabrication to appropriate grade for type and size of steel material indicated, with zinc coating thickness ASTM A123/A123M.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.
.2 Verify that field conditions are acceptable and are ready to receive work.
.3 Verify dimensions, tolerances, and method of attachment with other work.

3.2 PREPARATION

.1 Clean and strip primed steel items to bare metal where site welding is required.

3.3 INSTALLATION

.1 Install items plumb and level, accurately fitted, free from distortion or defects.
.2 Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
.3 Field weld components indicated on Shop Drawings.
.4 Perform field welding to CSA requirements.
.5 Obtain approval prior to site cutting or making adjustments not scheduled.
.6 After erection, prime welds, abrasions, and surfaces not galvanized, except surfaces to be in contact with concrete.

3.4 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.
.2 Maximum Variation From Plumb: 6 mm per story, non-cumulative.

.3 Maximum Offset From True Alignment: 6 mm.
.4 Maximum Out-of-Position: 6 mm.

END OF SECTION

Section 06 41 00
Architectural wood casework

Part 1 General

1.1 SECTION INCLUDES

.1 Cabinet units.
.2 Bookcases.
.3 Countertops.
.4 Cabinet hardware.

1.2 REFERENCE STANDARDS

.1 ANSI A135.4-2012 - Basic Hardboard Standard.
.2 ASTM A153/A153M-16a - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
.3 ASTM C503/C503M-15 - Standard Specification for Marble Dimension Stone.
.4 ASTM C615/C615M-11 - Standard Specification for Granite Dimension Stone.
.5 ASTM C629/C629M-15 - Standard Specification for Slate Dimension Stone.
.6 AWMAC - Architectural Woodwork Manufacturers Association.
.7 BHMA A156.9-2015 - Cabinet Hardware.
.8 CAN/CSA-O80 Series-15 - Wood Preservation.
.9 CAN/ULC-S102-10 - Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
.10 NEMA LD 3-2005 - High Pressure Decorative Laminates (HPDL).
.11 NPA A208.1-2009 - Particleboard.
.12 NPA A208.2-2009 - Medium Density Fibreboard (MDF) for Interior Applications.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Section 01 31 00: Project management and coordination procedures.
.2 Pre-installation Meetings: Convene one (1) week before starting work of this section.

1.4 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Product Data:
  .1 Provide data for hardware accessories.
  .2 Provide data on fire retardant treatment materials and application instructions.
.3 Shop Drawings: Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes.
.4 Samples:
  .1 Submit two (2) samples, 30 inch in size, illustrating casework finish.
  .2 Submit two (2) samples, 30 inch in size, illustrating countertop finish.
  .3 Submit two (2) samples of hinges and drawer pulls, illustrating hardware finish.

1.5 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Installation Data: Provide application instructions.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.7 QUALITY ASSURANCE

.1 Perform fabrication and installation to , Custom grade.
.2 Guarantee and Inspection Service (GIS):
  .1 Manufacture and install wood doors to current AWMAC standards, subject to site inspection by appointed AWMAC Certified Inspector.
    .1 Submit Shop Drawings to AWMAC Chapter office for review before work commences.
    .2 Replace, rework and/or refinish non-compliant Work to approval of AWMAC, at no additional cost to Owner.
  .2 AWMAC Guarantee Certificate: Provide a two (2) year Guarantee Certificate to cover replacement, rework and/or refinishing of deficient Work due to faulty workmanship or defective materials supplied and/or installed by woodwork contractor during AWMAC period following date of issuance.
.3 Manufacturers Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five (5) years documented experience and a member in good standing with AWMAC.
.4 Installers Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the fabricator.

1.8 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.
.2 Deliver materials after area of operation is fully enclosed; plaster and concrete work dry and area broom clean.
.3 Protect units from moisture damage as specified in AWS.

1.9 SITE CONDITIONS

.1 Ambient Conditions:
  .1 Maintain indoor temperature and humidity during and after installation within range recommended by for location of the project.

Part 2 Products

2.1 LUMBER MATERIALS

.1 Lumber: Maximum moisture content of Hardwood, lumber grades as required for 6% grade specified.

2.2 SHEET MATERIALS

.1 Wood Sheet Materials: Panel grades as required for grade specified.
  .1 Medium Density Fibreboard (MDF): NPA A208.2; composed of wood fibres, made with binders containing no urea-formaldehyde resin, moisture resistant; of grade to suit application; sanded faces.

2.3 PLASTIC LAMINATE MATERIALS

.1 Acceptable Manufacturers:
  .1 Abet Laminati (Standard Finish) -Refer to Apendix A - Finish Schedule.
.2 Substitutions: Refer to Section 01 25 00.
.3 High Pressure Decorative Laminate (HPDL): NEMA LD 3, Class 1 flame spread rated, minimum 0.7 mm thick.

.4 Laminate Backing Sheet (BKL): NEMA LD 3, 0.5 mm thick, Class 1 flame spread rated, undecorated, colour to match face laminate.
.5 Thermofused Decorative Overlay (Melamine or LPDL): NEMA LD 3, low pressure, melamine-impregnated decorative paper thermally fused to MDF core.

2.4 EDGEBANDS

.1 Plastic Edge Trim (PVC): Extruded flat shaped; ridged finish; self locking serrated tongue; of width to match component thickness.
  .1 Thickness: 3 mm.
  .2 Colour: to later selection by Owner.

2.5 ACCESSORIES

.1 Adhesive: Type recommended by laminate manufacturer to suit application.
.2 Fasteners: plain or steel type , of size and type to suit application.

2.6 HARDWARE

.1 Hardware: Meeting the requirements of AWS for grade specified.
  .1 Finish - Exposed Hardware: Manufacturer's standard finish.
  .2 Finish - Semi-Exposed Hardware: Manufacturer's standard finish.
.2 Pull: Hafele # 124.02.920
.3 Slides: Full Extension - "Accuride"
.4 Hinges: RICH. #71T558180 (BLUM 120 DEGREE)
.5 Shelf Support - PINS
.6 Cabinet Locks: Keyed cylinder, two (2) keys per lock, master keyed.
.7 Catches: Magnetic.
.8 Drawer Slides: Galvanized steel construction, ball bearings separating tracks, full extension type.

2.7 PLASTIC LAMINATE CASEWORK

.1 Casework Construction: Meeting , Custom grade.
  .1 Type: Frameless, flush overlay cabinet and door interface.
.2 Exposed Surfaces:
  .1 Drawers and Drawer Fronts: HPDL, woodgrain colour range, with textured finish.
  .2 Interior surfaces: Melamine, colour and pattern to match exposed surfaces.
  .3 Edges: HPDL.
.3 Semi-exposed Surfaces:
  .1 Surfaces (other than drawer bodies): HPDL, colour White.
  .2 Adjustable Shelves: HPDL.
  .3 Edges: HPDL.
  .4 Drawer Sides and Backs: Solid hardwood.
  .5 Drawer Bottoms: Tempered hardboard.

2.8 SOLID SURFACE COUNTERTOPS

.1 Solid Surface Surfacing:
  .1 Edge Treatment: bullnose edge.
  .2 Product: as per Appendix A - Finish Schedule, manufactured by Appendix A - Finish Schedule.

2.9 KITCHEN COUNTERTOP

.1 Kitchen : Stainless Steel Counter Top 22 GA.

2.10 FABRICATION

.1 Shop prepare and identify components for matching during site assembly.
.2 Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.
.3 When necessary to cut and fit on site, provide materials with ample allowance for site cutting and scribing.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.
.2 Verify that field measurements are as indicated.
.3 Verify adequacy of backing and support framing.
.4 Verify mechanical, electrical, plumbing, HVAC and other building components, affecting work in this Section are in place and ready.

3.2 INSTALLATION

.1 Install Work to , grade as indicated.
.2 Set and secure casework in place; rigid, plumb, and level.
.3 Use fixture attachments in concealed locations for wall mounted components.
.4 Use concealed joint fasteners to align and secure adjoining cabinet units.
.5 Carefully scribe casework abutting other components, with maximum gaps of 1 mm. Do not use additional overlay trim for this purpose.
.6 Secure casework to floor using appropriate angles and anchorages.
.7 Countersink mechanical fasteners used at exposed and semi-exposed surfaces, excluding installation attachment screws and those securing casework end to end.
.8 Cut equipment cutouts shown on plans using templates provided.

3.3 PREPARATION FOR SITE FINISHING

.1 Prime paint surfaces in contact with cementitious materials.
.2 Sand work smooth and set exposed nails.
.3 Apply wood filler in exposed screw / nail indentations.
.4 On items to receive transparent finishes, use wood filler which matches surrounding surfaces and of types recommended for applied finishes.

3.4 ADJUSTING

.1 Test installed work for rigidity and ability to support loads.
.2 Adjust hardware to function smoothly and correctly.
.3 Fill and retouch nicks, chips and scratches; replace unrepairable damaged items.

3.5 CLEANING

.1 Section 01 74 10: Cleaning installed work.
.2 Clean casework, counters, glass, hardware, fittings, and fixtures of dust, pencil and ink marks and broom clean the area of operation.

END OF SECTION

Section 07 92 00
Joint sealants

Part 1 General

1.1 SECTION INCLUDES

.1 Preparing substrate surfaces.
.2 Sealant and joint backing.
.3 Structural sealant for glazing assemblies.

1.2 REFERENCE STANDARDS

.1 ASTM C834-10 - Standard Specification for Latex Sealants.
.2 ASTM C919-12 - Standard Practice for Use of Sealants in Acoustical Applications.
.3 ASTM C920-14a - Standard Specification for Elastomeric Joint Sealants.
.4 ASTM C1184-13 - Standard Specification for Structural Silicone Sealants.
.5 ASTM C1193-16 - Standard Guide for Use of Joint Sealants.
.6 ASTM C1311-10 - Standard Specification for Solvent Release Sealants.
.7 ASTM C1330-02(2007) - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.
.8 ASTM C1401-09a - Standard Guide for Structural Sealant Glazing.
.9 ASTM C1481-12 - Standard Guide for Use of Joint Sealants with Exterior Insulation and Finish Systems (EIFS).
.10 ASTM E330/E330M-14 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

1.3 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 all sections referencing this section.

1.4 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations and colour availability.
.3 Samples: Submit two (2) samples, 6 inch in size illustrating sealant colours for selection.

1.5 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Installation Data: Manufacturer's special installation requirements.
  .1 Indicate special procedures, surface preparation, perimeter conditions requiring special attention.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

1.7 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 certification requirements.
.2 Perform sealant application work to ASTM C1193.

.3 Perform acoustical sealant application work to ASTM C919.
.4 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
.5 Applicator Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.8 SITE CONDITIONS

.1 Ambient Conditions:
  .1 Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

Part 2 Products

2.1 PERFORMANCE / DESIGN CRITERIA

.1 Sealant Design: Design structural sealant to withstand specified loads without breakage, loss, failure of seals, product deterioration, and other defects.
.2 Design installed sealant to withstand:
  .1 Loads: Design and size 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.
    .2 As measured in accordance with ASTM E330/E330M.
  .2 Movement from ambient temperature range of 49 degrees C.
  .3 Movement and deflection of structural support framing.

2.2 SEALANTS - MATERIALS

.1 Sealant Type A: ASTM C920, Type S, Grade NS, Class 25; One-part, non-sag type, silicone sealant, in standard colours selected.
  .1 Manufacturers: ‘DC CWS’ by Dow Corning Inc., ‘Sikasil 305CN' by Sika., ‘Tremsil 400' by Tremco
.2 Sealant Type B: ASTM C920, Type S, Grade NS; One-part mildew-resistant silicone, in standard colours selected.
  .1 Manufacturers:‘786 Mildew Resistant Silicone Sealant’ by Dow Corning Inc., ‘Sikasil GP Mildew Resistant' by Sika., ‘Tremsil 200 Silicone Sealant’ by Tremco Ltd.
.3 Sealant Type C: ASTM C834; Pure acrylic siliconized sealant; in standard white colour (paintable).
  .1 Manufacturers: ‘Tremflex 834 Silconized Sealant’ by Tremco Ltd.
.4 Acoustical sealant Type D:
  .1 Non-rated assemblies: ASTM C834; Acrylic, mould resistant sealant, paintable. ‘Smoke and Acoustic Sealant CP506' by Hilti or approved alternative
  .2 Fire-rated assemblies: ASTM E84; Acrylic based firestop sealant, colour: red or white as selected by Consultant. ‘Flexible Firestop Sealant CP606' by Hilti or approved alternative
.5 Primers, bond breakers and cleaning agents: As recommended by material manufacturers for various substrates, primers to prevent staining of adjacent surfaces encountered on project.
.6 Joint backing: ASTM C1330; Round, solid section, closed cell, skinned surface, soft polyethylene foam gasket stock, compatible with primer and sealant materials, 30 to 50%

oversized, Shore A hardness of 20, tensile strength 140 to 200 kPa. Bond breaker type surface.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.
.2 Verify that substrate surfaces are clean, dry, and free of frost and ready to receive work.

3.2 PREPARATION

.1 Remove loose materials and foreign matter which might impair adhesion of sealant.
.2 Clean and prime joints to sealant manufacturer's written instructions.
.3 Perform preparation to ASTM C1193 for solvent release and latex base sealants.
.4 Perform preparation to sealant manufacturer's written instructions.
.5 Protect elements surrounding the work of this section from damage or disfiguration.

3.3 INSTALLATION

.1 Perform installation in accordance with ASTM C1193 for solvent release and latex base sealants.
.2 Install sealant to sealant manufacturer's written instructions.
.3 Measure joint dimensions and size materials to achieve 2:1 width/depth ratios.
.4 Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.
.5 Install bond breaker where joint backing is not used.
.6 Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
.7 Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
.8 Tool joints concave.

3.4 FIELD QUALITY CONTROL

.1 Joint Sealants: Perform adhesion tests to manufacturer's written instructions and ASTM C1193, Method C - Field-Applied Sealant Joint Hand Pull Flap.
    .1 Perform test seven (7) days after installation at a rate of one test every 300 m of installed sealant.

3.5 MANUFACTURER'S SERVICES

.1 Section 01 78 00: Prepare and start components.
.2 Monitor and report installation procedures and unacceptable conditions.

3.6 CLEANING

.1 Section 01 74 10: Cleaning installed work.
.2 Clean adjacent soiled surfaces.

3.7 PROTECTION

.1 Section 01 78 23: Protecting installed work.
.2 Remove masking tape and excess sealant.
.3 Protect sealants until cured, remove temporary glass supports.

3.8 SCHEDULE OF LOCATIONS

.1 Sealant Type A:
    .1 Interior control joints, except in floors .
    .2 Door frames, louvre frames, blank-off panels, interior and exterior side.
    .3 Protrusions through walls and floors, except where fire rated seals are required.

.4 Seal thresholds.

.2 Sealant Type B:
- .1 Control joints in tiled areas.
- .2 Between vanity and tile.
- .3 Between vanity and mechanical fixtures/fittings.
- .4 Between access panels and tile.
- .5 Between tiles and adjacent materials.

.3 Sealant Type C:
- .1 Junction between drywall and masonry.

.4 Sealant Type D:
- .1 Acoustical sealing of partitions.
- .2 Acoustical sealing of corridors.
- .3 Acoustical sealing of party walls.

END OF SECTION

Section 08 51 13
Aluminum Windows

Part 1 General

1.1 SECTION INCLUDES

.1 Aluminum windows.
.2 Glazing and infill panels.
.3 Operating hardware.
.4 Insect screens.
.5 Sealants.

1.2 RELATED REQUIREMENTS

.1 Section 05 50 00 - Metal Fabrications: Steel lintels.
.2 Section 06 10 00 - Rough Carpentry: Wood framed openings; perimeter shims.
.3 Section 07 26 00 - Vapour Retarders: Perimeter vapour seal between window frame and adjacent construction.
.4 Section 07 27 00 - Air Barriers: Perimeter air seal between window frame and adjacent construction.
.5 Section 07 92 00 - Joint Sealants: Perimeter sealant and back-up materials.
.6 Section 08 41 13 - Aluminum Framed Entrances and Storefronts: Operable sash within glazing system.
.7 Section 08 80 00 – Glass and Glazing.
.8 Section 08 44 13 - Glazed Aluminum Curtain Walls: Operable sash within glazing system.
.9 Section 08 45 00 - Translucent Panel Wall and Roof Assemblies: Operable sash within glazing system.

1.3 REFERENCE STANDARDS

.1 DAF-45OL Designation system for aluminum finishes
.2 AAMA CW10-15 Care and handling of architectural aluminum from shop to site
.3 AAMA CW11-85 Curtain wall manual no. 11 - design windloads for buildings and boundary layer wind tunnel testing
.4 AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS - North American fenestration standard/Specification for windows, doors, and skylights
.5 AAMA 611-20 Voluntary specification for anodized architectural aluminum
.6 AAMA 1503-09 Voluntary Test Method For Thermal Transmittance And Condensation Resistance Of Windows, Doors And Glazed Wall Sections
.7 AAMA 2603-22 Voluntary specification, performance requirements and test procedures for pigmented organic coatings on aluminum extrusions and panels (with coil coating appendix)
.8 AAMA 2605-22 Voluntary specification, performance requirements and test procedures for superior performing organic coatings on aluminum extrusions and panels (with coil coating appendix)
.9 ASTM A123/A123M-17 Standard specification for zinc (hot-dip galvanized) coatings on iron and steel products

.10 ASTM B209/B209M-21a Standard specification for aluminum and aluminum-alloy sheet and plate
.11 ASTM B221M-21 Standard specification for aluminum and aluminum-alloy extruded bars, rods, wire, profiles, and tubes (metric)
.12 ASTM B221-21 Standard specification for aluminum and aluminum-alloy extruded bars, rods, wire, profiles, and tubes
.13 ASTM E283/E283M-19 Standard test method for determining rate of air leakage through exterior windows, skylights, curtain walls, and doors under specified pressure differences across the specimen
.14 ASTM E330/E330M-14 Standard test method for structural performance of exterior windows, doors, skylights and curtain walls by uniform static air pressure difference
.15 ASTM E331-00(2016) Standard test method for water penetration of exterior windows, skylights, doors, and curtain walls by uniform static air pressure difference
.16 ASTM F588-17 Standard test methods for measuring the forced entry resistance of window assemblies, excluding glazing impact
.17 CSA A440.2:22/A440.3:22 Fenestration energy performance/user guide to CSA A440.2:22, fenestration energy performance
.18 CSA A440.4:19 Window, door, and skylight installation
.19 Maintenance repainting specification manual
.20 Specifications for insect screens for windows, sliding doors, and swinging doors
.21 SSPC 16-01 Steel structures painting manual. Volume 1: good painting practice

1.4 ADMINISTRATIVE REQUIREMENTS

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

1.5 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Product Data: Provide component dimensions, anchorage and fasteners, glass, internal drainage details and other relevant information.
.3 Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work and installation requirements.
.4 Samples:
  .1 Submit two (2) samples 12 inches in size illustrating window frame section screen and frame, factory finished aluminum surfaces, glass.
  .2 Submit two (2) samples of operating hardware.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Manufacturer's Certificate: Certify that Products meet or exceed performance criteria tests.

1.7 CLOSEOUT SUBMITTALS

.1 Operation and Maintenance Data: Supply maintenance data for windows for incorporation into manual specified in Section 01 78 00 - Closeout Submittals
.2 Section 01 78 00: Submission procedures.

1.8 QUALITY ASSURANCE

.1 Comply with AAMA/WDMA/CSA 101/I.S.2/A440.

.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 and approved by the manufacturer.

1.9 DELIVERY, STORAGE, AND HANDLING

.1 Section 01 61 00: Transport, handle, store, and protect products.
.2 Protect factory finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.

1.10 SITE CONDITIONS

.1 Ambient Conditions:
  .1 Do not install sealants when ambient temperature is less than 5 degrees C.
  .2 Maintain this minimum temperature during and after installation of sealants.

1.11 WARRANTY

.1 Section 01 78 00: Warranties.
.2 Correct defective Work within a five (5) year period after Date of Substantial Completion.
.3 Provide five (5) year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same.
.4 Warranty: Include coverage for degradation of colour finish.

Part 2 Products

2.1 MANUFACTURERS

.1 Alumicor Limited, 290 Humberline Drive, Toronto, Ontario or other acceptable manufactures
.2 Substitutions: Refer to Section 01 25 00.

2.2 DESCRIPTION

.1 Thermally broken, aluminum framed, [hopper] [awning] [casement] windows with [double] glazed insulating glass units and concealed tamperproof fasteners. Refer to architectural drawings for type of window operation.

2.3 PERFORMANCE / DESIGN CRITERIA

.1 Design aluminum components to CAN/CSA S157
.2 Window Classification: To CAN/CSA A440.
  .1 Air tightness: [A3].
  .2 Water tightness: [B7].
  .3 Wind load resistance: [C5].
  .4 Condensation resistance: Temperature Index, [I58].
  .5 Forced Entry: [F10]

2.4 MATERIALS

.1 Main Frame: Extruded aluminum: To ASTM B221, 6063 alloy with [T5] [T6] temper, anodizing quality and 1.6mm (.062 inches) minimum thickness
.2 Insulating glass units: To [CAN/CGSB-12.8], [double] glazed, hermetically sealed, argon filled insulating glass units with low conductance [black] stainless steel warm edge spacer.

.1 Outer lite: [6] mm ([0.25] inches) clear float glass with low-E coating on surface two.

.3 Inner lite: [6] mm ([0.25] inches) clear float glass

.3 Thermal Break: PVC porthole extrusion

.4 Acceptable Material: Alumicor Ltd., UniVent 1350 series or equivalent.

2.5 HARDWARE

.1 Hinges: Equip each SHOO and SHOI operable window with [1] pair of butt hinges in accordance with manufacturer's written recommendations

.2 Operators; Equip each SHOO window unit with crank operated, single lever type roto-operator.

.3 Locking: Equip each SHOO operable window with single lever, dual locking device with [painted] [plated] finish

.4 Hardware: Except as noted, comply with the the requirements of BHMA A156.18.

.5 Insect Screen Hardware: Fit frames with adjustable hardware.

2.6 FABRICATION

.1 .1 Fabricate windows to CAN/CSA A440/A440.1.

.1 Do glazing in accordance with Section [08 80 00 – Glazing].

.2 Fabricate aluminum assemblies of extruded sections to sizes and profiles indicated.

.3 Fabricate each window frame and sash using 2 extruded components joined by thermal break.

.4 Construct units square, plumb and free from distortion, waves, twists, buckles or other defects detrimental to performance or appearance.

.1 Brace frames to maintain squareness and rigidity during installation.

.5 Fabricate units square and true with tolerance of plus or minus 1.5 mm (0.06 inches) maximum for units with diagonal measurement of 1800 mm (6 feet) maximum and plus or minus 3 mm (0.125 inches) maximum for units with diagonal measurement greater than 1800 mm (6 feet).

.6 Accurately fit and secure joints and corners.

.1 Mitre joints in frames and sash and secure using integrally captured crimped corner keys.

.2 Ensure joints are flush, hairline, [and weatherproof].

.3 Seal joints in accordance with manufacturer's written recommendations

.7 Face dimensions detailed are maximum permissible sizes.

.8 Use only concealed tamperproof fasteners

.1 Where fasteners cannot be concealed, countersunk screws finished to match adjacent material may be used upon receipt of written approval from Consultant.

.9 Provide pressure equalized sill weep system to ensure water does not accumulate in sill area.

.10 Visible manufacturer's labels are not permitted.

2.7 FINISHES

.1 Exterior exposed aluminum surfaces: [AAMA 2605, 3-coat, thermal setting enamel consisting of primer, colour coat and clear coat] with [70] % minimum fluoropolymer resin and polvinyldiene fluoride (PVDF)], [0.03 mm (1.2 mil)] minimum total thickness coloured .
Acceptable material; PPG Industries Inc., Duranar XL. colour to be selected by Architect.

.2 Interior exposed aluminum surfaces: To [AAMA 2604, 2-coat, thermal setting enamel consisting of primer and topcoat with [70] % minimum fluoropolymer resin and polvinyldiene fluoride (PVDF)], [0.025 mm (1 mil)] minimum total thickness colour to be selected by Architect.
Acceptable material; PPG Industries Inc., [Duranar].

2.8 ACESSORIES

.1 .1 Gasketing: To [CCD-45] Silicone compatible EPDM gaskets keyed into extrusions.

.2 Setting Blocks: To [CCD-45] and [ASTM D2240], [neoprene] [EPDM] [silicone], [80 - 90] Shore A Durometer hardness.

.3 Spacers: To [CCD-45] and [ASTM D2240], [neoprene] [EPDM] [silicone], [50 - 60] Shore A Durometer hardness.

.4 Sealant: To [CAN/CGSB-19.13], Class 40, one-component, cold-applied, non-sagging silicone.
.1 Acceptable material: Dow Corning 795.

.5 Sealant Bond Breaker: Open cell foam backer rod sized to suit project requirements.

.6 Fasteners: Tamperproof, cadmium plated stainless steel [300] [or] [400] series to meet window requirements and as recommended by manufacturer.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.
.2 Verify wall openings and adjoining air and vapour seal materials are ready to receive work of this Section.

3.2 INSTALLATION

.1 Install window frames to manufacturer's written instructions.
.2 Install window assembly to CAN/CSA-A440.4.
.3 Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

.4 Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
.5 Install sill and sill end angles.
.6 Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
.7 Coordinate attachment and seal of perimeter air barrier and vapour retarder materials.
.8 Install operating hardware.
.9 Install glass and infill panels as specified in Section 08 80 00, to glazing method required to achieve performance criteria.
.10 Install perimeter sealant to method required to achieve performance criteria.

3.3 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.
.2 Material and Unit Size Tolerances: As specified in AAMA/WDMA/CSA 101/I.S.2/A440.

3.4 ADJUSTING

.1 Adjust hardware for smooth operation and secure weathertight closure.

3.5 CLEANING

.1 Section 01 74 10: Cleaning installed work.
.2 Remove protective material from factory finished aluminum surfaces.
.3 Wash surfaces by method recommended and acceptable to sealant and window manufacturer; rinse and wipe surfaces clean.
.4 Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant and window manufacturer.

3.6 SCHEDULES

.1 Other Elevations (Opening No. W3, W4 and W5): Light Bronze anodized finish; …… nominal size; clear glass.

END OF SECTION

Section 09 30 00
Tiling

Part 1 General

1.1 SECTION INCLUDES

.1 Ceramic tiling.
.2 Waterproofing membrane.
.3 Cementitious backer boards.
.4 Tile accessories.
.5 Mortar and Grout.
.6 Floor levelling.

1.2 RELATED REQUIREMENTS

.1 Section 07 92 00 - Joint Sealants: Mildew resistant sealant.
.2 Section 09 21 16 - Gypsum Board Assemblies: Gypsum board wall substrate.

1.3 REFERENCE STANDARDS

.1 ANSI A108/A118/A136-2017 - North American Standard Specifications for the 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 C171-16 - Standard Specification for Sheet Materials for Curing Concrete.
.5 ASTM C207-06(2011) - Standard Specification for Hydrated Lime for Masonry Purposes.
.6 ASTM C241/C241M-15e1 - Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic.
.7 ASTM C373-16 - Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products, Ceramic Tiles, and Glass Tiles.
.8 ASTM C503/C503M-15 - Standard Specification for Marble Dimension Stone.
.9 ASTM C568/C568M-15 - Standard Specification for Limestone Dimension Stone.
.10 ASTM C615/C615M-11 - Standard Specification for Granite Dimension Stone.
.11 ASTM C627-10 - Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester.
.12 ASTM C629/C629M-15 - Standard Specification for Slate Dimension Stone.
.13 ASTM C847-14a - Standard Specification for Metal Lath.
.14 ASTM C1353/C1353M-15a - Standard Test Method for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic Using a Rotary Platform, Double-Head Abraser.
.15 ASTM C1527/C1527M - 11 - Standard Specification for Travertine Dimension Stone.
.16 CAN/CGSB 51.34-M86 - Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
.17 CAN/CGSB 25.20-95 - Surface Sealer for Floors.
.18 CSA-A3000-13 - Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
.19 CSA-A123.3-05 (R2015) - Asphalt Saturated Organic Roofing Felt.
.20 DIN 51130 - 2014 - Testing of Floorcoverings, Determination of Slip Properties, Ramp Method.

.21 ISO 10545 Series - Ceramic Tiles, Standards for Testing.
.22 ISO 13006-2012 - Ceramic Tiles, Definitions, Classifications, Characteristics and Marking.
.23 TCNA Handbook for Ceramic, Glass, and Stone Tile Installation (2016).
.24 TTMAC - Specification Guide 09 30 00, Tile Installation Manual 2016-2017.

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 requirements for floor recesses, accounting for mortar bed, bond coat and tile thickness where finished tile surfaces are installed flush with adjacent floor finishes.

1.5 ACTION SUBMITTALS

.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 edging details.
.4 Samples for Initial Selection: Submit the following samples for initial selection:
  .1 Tile: Submit samples of actual tiles or sections of 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.
.5 Samples for Verification: Submit the following samples for final verification, including full range of colour and texture variations expected.
  .1 Tiles: Submit one (1) pieces of each tile specified.
  .2 Trims: Submit full size units of each type of trim and accessory in each colour required for installation; minimum 150 mm lengths.
  .3 Mount specified material including coloured grout on 19 mm thick plywood backer, 300 x 300 mm in size illustrating pattern, colour variations, and grout joint size variations. Include perimeter accessories, movement joints, and trims where applicable.

1.6 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Manufacturer's Certificate: Certify that Products meet or exceed the requirements of ISO 10545 Series.
.3 Installation Data:
  .1 Manufacturer's recommended and special installation requirements.
  .2 Written instructions for using adhesives and grouts.

1.7 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: 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.

1.8 MAINTENANCE MATERIAL SUBMITTALS

.1 Section 01 78 23: 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, stone quarry and distributor's name.
    .2 Material series name and stocking number.
    .3 Material description, including colour and pattern.

1.9 QUALITY ASSURANCE

.1 Conform to TTMAC Manual.
.2 Maintain one (1) copy of document on site.
.3 Quality Assurance Program: Provide specifications and material compatibility submissions to TTMAC as required for Verispec Program; include costs for Verispec Program as part of submitted Bid.
.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 and be a member in good standing with TTMAC at time of bidding.

1.10 MOCK-UPS

.1 Section 01 43 00: Provide mock-up of tile.
.2 Dry lay sample installation for each form of construction and finish required.
.3 Provide 400 mm mock-up for washroom, with cementitious board.
.4 Locate where directed by Consultant.
.5 Accepted mock-ups will form the standard of acceptance for the remainder of the Work.
.6 Approved mock-up may remain as part of the Work.

1.11 DELIVERY, STORAGE, AND HANDLING

.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.

1.12 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 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 As Per Plans; Product: As Per Plans.
  .2 Substitutions: Refer to Section 01 25 00.
.2 Mortar and Grout:
  .1 As Per Plans; Product: As Per Plans.
  .2 Substitutions: Refer to Section 01 25 00.

2.2 DESCRIPTION

.1 System Description:
  .1 Ceramic tile, installed on walls, including base and using thinset application method.

2.3 TRIMS AND EDGING

.1 Trims: Shapes and profiles to match colour and finish of adjoining field tile; coordinate with size and coursing of adjoining flat tile where applicable.
  .1 Wainscot caps.
  .2 Tapered transitions.
.2 Straight Edge and Transition Strips: Roll formed stainless steel edge strips, adequate shape; height as required to suit tile installation; with integral perforated anchoring leg.

2.4 BOND COAT

.1 Dry set cement mortar: to ANSI A108.1.
.2 Organic adhesive: to CGSB 71-GP-22M, Type 1.
.3 Latex Cement mortar: to ANSI A108.1, two-component universal dry-set mortar.
.4 Epoxy bond coat: non-toxic, non-flammable, non-hazardous during storage, mixing, application, and when cured. To produce shock and chemical resistant mortars having the following physical characteristics:
  .1 Compressive Strength: 246 kg/cm².
  .2 Bond Strength: 53 kg/cm².
  .3 Water Absorption: 4.0% Max.
  .4 Ozone Resistance, 200 hours @ 200 ppm: no loss of strength.
  .5 Smoke Contribution Factor: 0.
  .6 Flame Contribution Factor: 0.
  .7 Finished mortar and grout to be resistant to urine, dilute acid, dilute alkali, sugar, brine and food waste products, petroleum distillates, oil and aromatic solvents.

2.5 MORTAR AND ADHESIVES MATERIALS

.1 Cement: to CSA-A5, type 10.
.2 Sand: to ASTM C 144, passing 16 mesh.
.3 Water: potable and free of minerals and chemicals which are detrimental to mortar and grout mixes.

.4 Latex additive: formulated for use in cement mortar and thin set bond coat.

2.6 GROUT

.1 Colouring Pigments:
  .1 Pure mineral pigments, limeproof and nonfading, complying with ASTM C 979.
  .2 Colouring pigments to be added to grout by manufacturer.
  .3 Job coloured grout are not acceptable.
  .4 Use in Commercial Cement Grout, Dry-Set Grout, and Latex Cement Grout.
.2 Cement Grout: to ANSI A108.1.
  .1 Use one part white cement to one part white sand passing a number 30 screen.
.3 Commercial Cement Grout: to CTI A118.6.
.4 Dry-Set Grout: to CTI A118.6.
.5 Latex Cement Grout: to ANSI A108.1, fast curing, high early strength, polymer-modified, stain resistant, sanded mix for floors, unsanded mix for walls and floors with polished tiles commercial tile grout.

2.7 ACCESSORIES

.1 Reinforcing mesh: 50 x 50 x 1.6 x 1.6 mm galvanized steel wire mesh, welded fabric design, in flat sheets.
.2 Divider strips: Purpose made stainless steel, complete with anchors both sides spaced at 150 mm O.C.
.3 Metal lath: to ASTM C 847 galvanized finish, 10 mm rib at 2.17 kg/m².
.4 Transition Strips: purpose made metal extrusion; stainless steel type.
.5 Reducer Strips: purpose made metal extrusion; stainless steel type; maximum slope of 1:2.
.6 Prefabricated Movement Joints: purpose made, having a Shore A Hardness not less than 60 and elasticity of plus or minus 40 percent when used in accordance to TTMAC Detail 301EJ.
.7 Sealant: in accordance with Section 07 92 50
.8 Floor sealer and protective coating: to CAN/CGSB-25.20, Type 1 to tile and grout manufacturers recommendations.

2.8 MIXES

.1 Cement:
  .1 Scratch coat: 1 part cement, 1/5 to 1/2 parts hydrated lime to suit job conditions, 4 parts sand, 1 part water, and latex additive where required by TTMAC Detail. Adjust water volume depending on water content of sand.
  .2 Slurry bond coat: cement and water mixed to creamy paste. Latex additive may be included.
  .3 Mortar bed for floors: 1 part cement, 4 parts sand, 1 part water. Adjust water volume depending on water content of sand. Latex additive may be included to TTMAC Detail.
  .4 Mortar bed for walls and ceilings: 1 part cement, 1/5 to 1/2 parts hydrated lime to suit job conditions, 4 parts sand and 1 part water. Adjust water volume depending on water content of sand. Latex additive may be included to TTMAC Detail.
  .5 Levelling coat: 1 part cement, 4 parts sand, minimum 1/10 part latex additive, 1 part water Including latex additive.
  .6 Bond or setting coat: 1 part cement, 1/3 part hydrated lime, 1 part water.
  .7 Measure mortar ingredients by volume.

.2 Dry set mortar: mix to manufacturer's instructions.
.3 Mix bond and levelling coats, and grout to manufacturer's instructions.
.4 Adjust water volumes to suit water content of sand.

2.9 CLEANING COMPOUNDS

.1 Specifically designed for cleaning masonry and concrete and which will not prevent bond of subsequent tile setting materials including patching and leveling compounds and elastomeric waterproofing membrane and coat.
.2 Materials containing acid or caustic material are not acceptable.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 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 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 00, and are ready for application of levelling materials.
  .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 over metal studs to board manufacturer's written instructions. Tape joints and corners.

3.3 INSTALLATION

.1 Install tile to TTMAC Manual.
.2 Request tile pattern. 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 neatly. Align 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-third unit size unless indicated otherwise on Drawings.
.7 Form internal angles square and external angles square.
.8 Sound tile after setting. Replace hollow sounding units.
.9 Keep control joints 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 and manufacturer’s written instructions.
.12 Apply sealant to junction of tile and dissimilar materials and planes.

.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 6 mm and 13 mm, use sloped reducer strips.

3.4 INSTALLATION - ACCESSORIES

.1 Membranes:
  .1 Install membrane to ANSI A108/A118/A136 and manufacturer's written instructions; lap and seal watertight edges and ends.
.2 Metal Lath: Install metal lath to TTMAC Manual.
.3 Movement Joints: Install expansion joints where indicated on Drawings, to TTMAC Detail 301MJ-2012/2013; keep control and expansion joints free of setting and grouting materials.

3.5 FIELD QUALITY CONTROL

.1 Section 01 45 00: Field inspection.
.2 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.

3.6 CLEANING

.1 Section 01 74 10: Cleaning installed work.
.2 Clean tile and grout surfaces with manufacturer's recommended cleaning methods.

3.7 PROTECTION

.1 Section 01 78 23: Protecting installed work.
.2 Protect finished areas from traffic until setting materials have sufficiently cured to TTMAC requirements.
.3 Protect finished floor areas from foot and wheel traffic from floors for a minimum of seventy-two (72) hours after completion of grouting.

END OF SECTION

Section 09 65 70
Resilient Sheet Flooring

Part 1 General

1.1 SUMMARY

.1 A. Section Includes: This section includes labor, materials and other services necessary to complete resilient sheet flooring, slip resistant sheet vinyl safety flooring systems and accessories work. Conform with requirements of all Sections of Division 1, General Requirements, as it applies to the work of this Section.

1.2 RELATED SECTIONS

.1 03 54 00 Cast Underlayment

1.3 REFERENCES

.1 A. ASTM D 2047, Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
B. ASTM E 648/NFPA 253, Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
C. ASTM E662, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
D. ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
E. ASTM F 970, Standard Test Method for Static Load Limit.
F. ASTM F1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring.
G. ASTM F1303, Standard Specification for Sheet Vinyl Floor Covering with Backing.
H. ASTM F2170, Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
I. (RFCI) Resilient Floor Covering Institute
1. RFCI Standard Slab Moisture Test Method (Calcium Chloride Method) as a supplementary test method to ASTM F2170.
J. Underwriters Laboratories of Canada (ULC)
1. CAN/ULC-S102.2, Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies

1.4 SUBMITTALS

.1 Product Data: Submit manufacturer's current printed product literature, specifications, installation instructions, and field reports in accordance with Section 01 33 00 - Submittal Procedures.

.2 Shop Drawings: Submit shop drawings to indicate materials, details, and accessories in accordance with Section 01 33 00 - Submittal Procedures including but limited to the following:
1. Submit a cut diagram indicating seam locations and roll direction. Use mitered seam layouts for corners when changing directions 180 degrees (e.g. when running material down corridors which bisect at a right angle), unless approved otherwise.

.3 Samples: Submit duplicate 12" x 12" (300 mm x 300 mm) sample pieces of sheet material, 12" (300 mm) long [gulley edge] [cap strip] [joint cover strip] [cove former] in accordance with Section 01 33 00 - Submittal Procedures.

.4 Closeout Submittals: Submit the following:

.1 Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance

1.5 QUALITY ASSURANCE

.1 Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project

.2 Training: Installer who has attended and successfully completed an Altro flooring installation training clinic. Provide name of flooring company and installer to be approved by Owner.

.3 Regulatory Requirements: Provide slip resistant sheet vinyl safety flooring in compliance with the following:

1. Americans with Disabilities Act Architectural Guidelines (ADAAG).
2. Occupational Safety & Health Administration (OSHA).
3. Accessibility for Ontarians with Disabilities (AODA).

.4 Mock-ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods, including concrete substrate testing.

1. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
2. Incorporation: Mock-up may be incorporated into final construction upon Owner’s approval.

.5 Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer’s installation instructions, manufacturer’s warranty requirements, and installer qualifications.

1.6 SITE CONDITIONS

.1 Temperature Requirements: If storage temperature is below 65F (18C) or the floor temperature is below 50F (18C), the Altro safety flooring product must be moved to a warmer place and allowed to reach this temperature before unrolling or installation. For further information, refer to current Altro Installation Practices and Quick Facts.

.2 Maintain air temperature and structural base temperature at flooring installation area between 68F (20C) and 80F (26C) for 48 hours before, during and 24 hours after installation.

1.7 DELIVERY, STORAGE AND HANDLING

.1 Ordering: comply with manufacturer’s ordering instructions and lead time requirements to avoid construction delays.

.2 Deliver, store and handle resilient flooring materials in accordance with section 01610 - basic material requirements.

.3 Deliver materials in manufacturer’s original, unopened, undamaged containers with identification labels intact.

.4 Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by manufacturer.

.5 Store rolls in dry locations. Stand rolls on end. Protect and secure rolls from falling.

1.8 WASTE MANAGEMENT AND DISPOSAL

.1 A. Warranty period for altro aquarius shall be 10 years commencing on date of substantial completion. Refer to conditions of the contract for project warranty provisions.

1.9 WARRANTY

.1 Warranty period for altro aquarius shall be 10 years commencing on date of substantial completion. Refer to conditions of the contract for project warranty provisions.

Part 2 Products

2.1 SAFETY FLOORING

.1 Slip resistant sheet vinyl manufacturer: Aquarius by Altro.
  .1 Canada: 6221 Kennedy rd, unit 1, Mississauga, on, L5T 2S8
  toll free: 800.565.4658 tel: 905.564.1330 fax: 905.564.0750

.2 Acceptable material: Altro Aquarius (measurements and product weights given below are approximate): slip resistance .88/d 1.03/w, thickness: 0.08” (2 mm); roll width: 6' 7" (2 m); roll length: 66' (20 m); roll weight: 220 lb (100 kg). Refer to appendix “a” finish schedule for colours.

2.2 ACCESSORIES

.1 Vinyl welding rod: acceptable material: 1. Altro weld rod
.2 Cove former: acceptable material, sized to suit application: ‘Altro 900 1.5” cove former’
.3 Gulley edge: acceptable material, vinyl, sized to suit application:
  .1 Altro Gulley Edge GA 25RE to be used for the transition between the existing floor and the new Altro flooring.
  .2 Altro Gulley Edge GA 35/25 to be used to finish the edge along floor and trench drains.
.4 Subfloor Filler and Leveler: Use only gray Portland cement-based “moisture tolerant” underlayments, and patching compounds. Use for filling cracks, holes or leveling. White gypsum materials are not acceptable.
.5 Adhesives: Altrofix 30- 2 part polyurethane
.6 Transition Curb: Altro - Wetroom transition (Gradus WT™ series, or equivalent)

Part 3 Execution

3.1 EXAMINATION

.1 Compliance: Comply with manufacturer’s product data, including product technical bulletins, product catalog, installation instructions.
.2 Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer’s instructions.

3.2 PREPARATION

.1 Safety flooring shall be installed over subfloors conforming to ASTM F710 for concrete and other monolithic floors or ASTM F1482 for wood subfloors.
.2 Conduct moisture tests per ASTM F-2170 on all concrete slabs regardless of age or grade level. ASTM F-2170 Internal Relative Humidity (IRH) test results must not exceed 85%.
.3 Do not proceed with work until results of moisture condition tests are acceptable.
.4 When patching, a *moisture tolerant* patching compound must be used. Gypsum based products are not acceptable.

3.3 INSTALLATION

.1 Aquarius Installation: Install Altro safety flooring in accordance with the current posted Altro Installation Practices and Quick Facts Guide found at www.altrofloors.com. All Seams shall be heat welded with Altro Weldrod™ only. Failure to install Altro safety flooring in accordance with recommended procedures will void the Altro Limited Product Warranty.

.2 Coved Installation: Where Altro safety flooring is coved up wall surfaces and other abutments, installation shall be in accordance with Altro safety flooring Installation Practices using the following accessories:

.1 At standard wall finishes: Use Altro C5 vinyl cap strip to accommodate sheet vinyl to a height as indicated; adhere with contact tape.

.2 At ceramic tile, Altro Whiterock semi-rigid wall cladding or FRP paneling: Use Altro C8 Vinyl Cap Tile Strip or C4 cap, respectively

.3 When coving up the wall; at juncture of vertical and horizontal surfaces: Use Altro Vinyl Cove Former 901: install with contact tape.

.4 Top set cove base: Install in accordance with manufacturer's instructions.

3.4 PROTECTION

.1 A. Cover and protect finished installation from damage from other trades using a non-staining, temporary floor protection system, such as reusable textured plastic sheeting.

B. Aquarius should be covered and protected from all other trades during construction with a suitable non-staining protective covering without taping to the surface of the flooring.

3.5 CLEANING

.1 Cleaning: Remove temporary coverings and protection of adjacent work areas.

1. Repair or replace damaged installed products.
2. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance.
3. Current recommended maintenance procedures can be found on the Altro website at www.altrofloors.com, Technical, Floors, Maintenance Guides

END OF SECTION

Section 09 72 00
Hygienic Wall Covering

Part 1 General

1.1 SECTION INCLUDES

.1 This section includes labor, materials and other services necessary to complete vinyl wall coverings.

.2 Conform with requirements of all Sections of Division 1, General Requirements, as it applies to the work of this Section.

1.2 RELATED SECTIONS

.1 Not used.

1.3 REFERENCES

.1 General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

.2 American Society for Testing & Materials (ASTM):

1. AST ASTM E 84-05 Standard Test Method for Surface Burning Characteristics of Building Materials. CLASS A
2. ASTM D5420 Gardner Impact Exceeds 160 inch pounds

.3 Underwriters Laboratories of Canada (ULC)

1. CAN/ULC-S102, Surface Burning Characteristics

1.4 SYSTEM DESCRIPTION

.1 Performance Requirements: Provide hygienic Altro Whiterock wall covering which has been manufactured by Altro and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.

1.5 SUBMITTALS FOR REVIEW

.1 Product Data: Submit manufacturer’s current printed product literature, specifications, installation instructions, and field reports in accordance with Section 01 33 00 - Submittal Procedures.

.2 Shop Drawings: Submit shop drawings to indicate materials, details, and accessories in accordance with Section 01 33 00 - Submittal Procedures including but limited to the following:

1. Submit a layout diagram indicating the location of each panel and joining method.

.3 Samples: Submit duplicate sample pieces of Altro Whiterock material, as well as accessory pieces in accordance with Section 01 33 00 - Submittal Procedures.

.4 Quality Assurance Submittals: Submit the following:

1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
2. Manufacturer’s Instructions: Current published manufacturer’s installation and maintenance instructions.
3. Manufacturer’s Field Reports: Specified herein.

.5 Closeout Submittals: Submit the following:

1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.
2. Warranty: Warranty documents specified herein

1.6 QUALITY ASSURANCE

.1 Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

1. Training: Installer who has attended and successfully completed an Altro Whiterock installation training clinic. Provide name of the installer to be approved by Owner.

.2 Mock-ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Consultant's acceptance of finish color, texture and pattern, and workmanship standards.

1. Mock-Up Size: 600mmx600mm
2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval

.3 Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.

1.7 DELIVERY, STORAGE AND HANDLING

.1 Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

.2 Deliver, store and handle Altro Whiterock wall panels in accordance with Section 01610 - Basic Material Requirements.

.3 Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

.4 Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by manufacturer.

.5 Store panels in temperature controlled environments. Leave protective blue film on panel until ready to use.

1.8 WASTE MANAGEMENT AND DISPOSAL

.1 Deposit all packaging materials in appropriate container on site for recycling or reuse.

.2 Avoid using landfill waste disposal procedures when recycling facilities are available.

.3 Keep all discarded packaging away from children.

1.9 PROJECT CONDITION

.1 Temperature Requirements: If storage temperature is below 65F (18C), the Altro Whiterock wall panel must be moved to a warmer place and allowed to reach this temperature before installation. For further information, refer to current Installation Guide.

.2 Maintain air temperature and structural base temperature at installation area between 65F (18C) and 80F (26C) for 48 hours before, during and 24 hours after installation.

1.10 WARRANTY

.1 Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
.2 Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
.3 Warranty Period for Altro Whiterock shall be 20 years commencing on Date of Substantial Completion. Please see current Altro Whiterock Warranty online at www.altrofloors.com

1.11 EXTRA MATERIALS

.1 Provide extra materials of product and adhesives in accordance with Section 01 78 00 - Closeout Submittals.
.2 Provide one full panel of each color, pattern and type material required for project for maintenance use.
.3 Clearly identify each wall panel and each container of adhesive.
.4 Deliver to Consultant, upon completion of the work of this section and store where directed.

Part 2 Products

2.1 MANUFACTURERS

.1 A. Manufacturer: Altro
1. CANADA: 6221 Kennedy Road, Unit 1, Mississauga, ON L5T 2S8
Toll-free: 800.565.4658 Tel: 905.564.1330 Fax: 905.564.0750
E-mail: info@altrofloors.com Web Site: www.altrofloors.com.

2.2 HYGIENIC WALL COVERINGS

.1 A. Altro Whiterock is 100% pure vinyl, extruded, semi-rigid PVCu sheet. Altro Whiterock contains no plasticizers or fillers. Altro Whiterock is homogenous.
.2 A. Acceptable material: Altro Whiterock (measurements and product weights given below are approximate):

1. "Type 1" STANDARD WHITE W103/00: Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8' or 10' (2.5m or 3m); Weight 4'x8' Panel: 24 lbs (10.4 kg) Weight 4'x10' Panel: 29 lbs (12.7 kg).

2. "Type 2" Flint LRV-32 Thickness: 0.10" (2.5 mm); Panel Width: 4' (1.22m) Panel Height: Either 8' or 10' (2.5m or 3m); Weight 4'x8' Panel: 24 lbs (10.4 kg) Weight 4'x10' Panel: 29 lbs (12.7 kg).

2.3 ACCESSORIES

.1 Vinyl welding rod: Acceptable material:
1. Altro weld rod
.2 Joint Strips (vertical joints):
1. 2-Part Joint Strip – A831/25 White Length 98.5"
.3 Start and Edge Trim:
1. 2-Part Start and Edge Trim – A833/25 White Length 98.5"
.4 Acrylic Adhesive: For dry, climate controlled areas, use AltroFix W157, a one-part, water-based, acrylic adhesive as recommended by manufacturer.

.5 Polyurethane Adhesive: The default adhesive for most installations, suitable for wet area, non-climate controlled areas, and non-absorbent surfaces, use AltroFix W39, a two-part resin-based polyurethane adhesive as recommended by manufacturer.

.6 Caulking and Mastic Compounds and Tools:

1. Altro Mastic Sealant –A803 Clear 10.5 oz

2.4 SOURCE QUALITY

.1 Source Quality: Obtain wall products from a single manufacturer.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog, installation instructions and product label instructions for installation.

3.2 EXAMINATION

.1 Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

3.3 SUBSTRATE PREPARATION

.1 Walls should be smooth and level. High points must be removed and low points filled with filler intended for the substrate and environmental conditions.

.2 Wall tiles must be fixed firmly to the wall. As long as the tile edges do not protrude you do not have to skim grout joints.

.3 Surfaces must be permanently dry and free from all substances that may contribute to adhesive bond failure.

.4 Remove loose paint and conduct an adhesive bond test with paint.

.5 Exterior walls must be adequately damp-proofed and insulated.

.6 Dry wall substrates should be paint ready.

3.4 PREPARATION

.1 A. All surfaces must be free from dust and cleaned prior to Altro Whiterock installation. The working environment must also be dust free. Failure to comply with these conditions will reduce the bond strength between the adhesive and substrate, and may cause the Altro Whiterock panels to debond.

B. Very absorbent / porous substrates (particularly plaster finishes and unprimed sheetrock) must have a proprietary sealer e.g. PVA primer or similar, applied to the surface a minimum of 12 hours prior to the installation.

C. All electrical switches, power points etc., should be in a first fix / installation state. All electrical equipment should only be moved or altered by a qualified electrician.

D. All plumbing should have pipe-work removed to a first fix or installation state and "tails" left protruding from the substrate. Altro Whiterock panels can then be drilled and slid over the pipe tails. All holes should be drilled 1/8" (3mm) oversize to allow for expansion, then sealed with AltroMastic caulking. Plumbing should always be done by a qualified plumber.

E. Hot pipes and steam pipes should be insulated and a 1/8" to 1/4" (3-6mm) expansion gap should be created when installing panels around these pipes, then sealed with AltroMastic sealant.

F. All pipes, fixing bolts, etc. extending through the Altro Whiterock panels should have a minimum 1/8" (3mm) expansion gap and be sealed using AltroMastic sealant.

G. If fitting to door frames, these must be in place prior to installation of Altro Whiterock.

H. Prior to installation, it is advisable to complete any painting which comes in contact with Altro Whiterock, as sealant used at junctions is non-paintable.

I. Panels should be stored flat and be pre-conditioned a minimum of 24 hours in ambient temperatures similar to the prevailing operational conditions.

J. The panels must be stored on a level flat surface off the ground (risk of condensation on the panels if stored on damp surfaces). Storage on uneven surfaces could cause the panels to distort prior to installation.

K. First, check the room using a 6' (2 m) level to ensure all walls are flat, paying particular attention to the corners, window reveals, and door entrances. These need to be inspected to ensure they are free of any debris or irregularities, which could prevent the panels laying flat to the substrate after the adhesive has been applied and the panel installed.

3.5 INSTALLATION

.1 Hygienic Wall Installation: Install Altro Whiterock in accordance with the current Altro Whiterock Installation Guide. All joints should be joined by approved methods as detailed in the installation guide. Failure to install Altro Whiterock in accordance with recommended procedures will void the Altro Limited Product Warranty.

3.6 FIELD QUALITY REQUIREMENTS

.1 Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

1. Site Visits: [Specify number and duration of periodic site visits.].

3.7 CLEANING

.1

A. Altro Whiterock can be cleaned with a diluted soap/detergent solution, such as Altro 44 Cleaner.

B. When cleaning the Altro Whiterock surface, we recommend the temperature of water does not exceed 140° F (60° C).

C. Pressure cleaning with hot water may be used with the pressure nozzle a minimum of 2 feet (600mm) away from the surface.

D. To reduce the buildup of static, cleaning the panels with an anti-static solution is recommended.

E. Stubborn stains use AltroClean 44 cleaner or equivalent alkaline cleaner.

.2 Remove construction debris from project site and legally dispose of debris.

3.8 PROTECTION

.1 A. Do not install near open heat sources (ovens, etc). Stainless steel panels should be used in such areas.

END OF SECTION

Section 09 91 00
Painting

Part 1 General

1.1 SECTION INCLUDES

.1 Surface preparation.
.2 Painting.

1.2 REFERENCE STANDARDS

.1 MPI (Master Painters Institute) – Architectural Painting Specifications Manual and Maintenance Repainting Manual.

1.3 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.
  .2 Schedule painting operations to prevent disruption of occupants in and about building.

1.4 ACTION SUBMITTALS

.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 Retain reviewed samples on-site to demonstrate acceptable standard of quality for appropriate on-site surface.
.4 Submit manufacturer's installation and application instructions.
.5 Samples:
  .1 Submit two (2) samples, 12 inch in size illustrating range of colours and textures available for each surface finishing product scheduled.
  .2 Submit two (2) samples, 12 inch in size illustrating selected colours and textures for each colour selected.

1.5 INFORMATIONAL SUBMITTALS

.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.
.3 Schedule:
  .1 If requested, submit Work schedule for various stages of Work when painting occupied areas for Consultant’s review and Owner’s approval.
  .2 Submit schedule minimum of forty-eight (48) hours in advance of proposed operations.
  .3 Obtain written authorization from Consultant for changes in Work schedule.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: 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).

1.7 MAINTENANCE MATERIAL SUBMITTALS

.1 Section 01 78 23: 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.

1.8 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: Contractor: minimum of five (5) years proven satisfactory experience. Provide list of last three (3) comparable jobs including, job name and location, specifying authority, and project manager.
.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.

1.9 MOCK-UPS

.1 Section 01 43 00: Requirements for mock-up.
.2 If requested, provide 3 ft long by 4 ft wide field sample panel as specified, illustrating specified coating colour, gloss, texture, and workmanship.
.3 Locate where directed by Consultant.
.4 Approved mock-up will be the acceptable standard of finish quality and workmanship for all painting Work.
.5 Approved mock-up may remain as part of the Work.

1.10 DELIVERY, STORAGE, AND HANDLING

.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.

1.11 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 is provided on surfaces to be painted or decorated.

1.12 WASTE MANAGEMENT AND DISPOSAL

.1 Dispose of waste materials in accordance with 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.

1.13 WARRANTY

.1 At no cost to Owner, remedy any defects in the work of this Section due to faulty materials and/or workmanship appearing within two (2) years of Substantial Performance.

Part 2 Products

2.1 DESCRIPTION

.1 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.

2.2 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 required, use only materials having a minimum MPI "Environmentally Friendly" E2 rating based on VOC (EPA Method 24) content levels.
.4 Where indoor air quality (odour) is an issue, use only MPI listed materials having a minimum E3 rating.
.5 LEED: Where required to meet LEED (Leadership in Energy and Environmental Design) program requirements, use only MPI listed materials having an “L” rating designation.
.6 Where possible, all materials to be lead and mercury free with low VOC content.
.7 Provide all material for each system from a single manufacturer.
.8 Fire Hazard: Flame spread and smoke developed ratings in accordance with applicable code.
.9 Patching Materials: Latex filler.
.10 Fastener Head Cover Materials: Latex filler.

2.3 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.

2.4 FINISH AND COLOUR

.1 Finish: To MPI Premium Grade finish requirements.
.2 All visible surfaces in interior spaces and/or rooms shall be painted unless specifically indicated otherwise.
.3 Colours and Finishes: Refer to Finish Schedule at end of section.
  .1 Interior Colours: Based on 1 base colours and 1 accent colours with a maximum of one (1) deep or bright colour. No more than eight (8) colours will be selected for entire project and no more than three (3) colours will be selected in each area.

2.5 GLOSS/SHEEN RATINGS

.1 Paint gloss is defined as the sheen rating of applied paint with the following values:

.2

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	……

.3 Gloss level ratings of painted surfaces …….

2.6 MANUFACTURERS

.1 Paint Manufacturers:
- .1 Benjamin Moore & Co. Ltd..
- .2 ICI (Glidden Paints).
- .3 Sherwin-Williams Company.
- .4 Substitutions: Refer to Section 01 25 00.

2.7 INTERIOR PAINT SYSTEMS

.1 Concrete, Concrete Block, Restored Masonry:
- .1 One (1) coat of block filler.
- .2 Two (2) coats of latex, semi-gloss finish.

.2 Steel - Unprimed:
- .1 One (1) coat of alkyd primer.
- .2 Two (2) coats of alkyd enamel, semi-gloss finish.

.3 Steel - Primed:
- .1 Touch-up with alkyd primer.
- .2 Two (2) coats of alkyd enamel, semi-gloss finish.

.4 Steel - Galvanized:
- .1 One (1) coat galvanize primer.
- .2 Two (2) coats of alkyd enamel, semi-gloss finish.

.5 Plaster, Gypsum Board:
- .1 One (1) coat of latex primer sealer.
- .2 Two (2) coats of latex enamel, eggshell finish.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.

.2 Verify that substrate conditions and 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 or mask 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 Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
.10 Copper Surfaces Scheduled for a Paint Finish: Remove contamination by steam, high pressure water, or solvent washing. Apply vinyl etch primer immediately following cleaning.
.11 Copper Surfaces Scheduled for a Natural Oxidized Finish: Remove contamination by applying oxidizing solution of copper acetate and ammonium chloride in acetic acid. Rub on repeatedly for required effect. Once attained, rinse surfaces with clear water and allow to dry.
.12 Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
.13 Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
.14 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.

.15 Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

.16 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 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.

.17 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.

.18 Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.

.19 Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.

.20 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.

.21 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.

.22 Glue-Laminated Beams: Prior to finishing, wash surfaces with solvent, remove grease and dirt.

.23 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 Custom 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 1000 mm.

.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.

.12 Prime concealed surfaces of interior woodwork with primer paint.

.13 Prime concealed surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25% with mineral spirits.

3.4 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

.1 Refer to Section 23 05 53 and Section 26 05 53 for schedule of colour coding and identification banding of equipment, duct work, piping, and conduit.

.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 Boiler room, mechanical and electrical rooms.

.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 and convector and baseboard heating cabinets where visible behind louvers, grilles and diffusers for a minimum of 460 mm 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 red or band all fire protection piping and sprinkler lines in accordance with mechanical specification requirements. Keep sprinkler heads free of paint.

.10 Paint yellow or band all natural gas piping in accordance with mechanical specification requirements.

.11 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.

.12 Paint exterior steel electrical light standards. Do not paint outdoor transformers and substation equipment.

.13 Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings that were removed prior to finishing.

3.5 FIELD QUALITY CONTROL

.1 Acceptable Surfaces:
- .1 No visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm.
- .2 No visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm.
- .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 10: Cleaning installed work.

.2 Collect waste material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

END OF SECTION

Section 10 28 00
Toilet, bath, and laundry accessories

Part 1 General

1.1 SECTION INCLUDES

.1 Toilet, washroom accessories.
.2 Grab bars.
.3 Attachment hardware.

1.2 REFERENCE STANDARDS

.1 ASTM A123/A123M-17 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
.2 ASTM A167-99(2009) (Withdrawn) - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
.3 ASTM A269/A269-15a(R2019) - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
.4 ASTM A1018/A1018M-18 - Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
.5 ASTM B456-17 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
.6 CSA-B651-18 - Accessible Design for the Built Environment.
.7 NEMA LD 3-2005 - High Pressure Decorative Laminates (HPDL).

1.3 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.

1.4 ACTION SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.
.3 Samples: Submit two (2) samples of each component, illustrating colour and finish.

1.5 INFORMATIONAL SUBMITTALS

.1 Section 01 33 00: Submission procedures.
.2 Installation Data: Manufacturer's special installation requirements including special procedures.

1.6 CLOSEOUT SUBMITTALS

.1 Section 01 78 00: Submission procedures.

Part 2 Products

2.1 MANUFACTURERS

.1 ASI - American Specialties ; Product: 3500 series.

.2 Other acceptable manufacturers offering functionally and aesthetically equivalent products.
  .1 Bobrick; Product: …….
  .2 Frost; Product: …….
  .3 Watrous; Product: …….
.3 Substitutions: Refer to Section 01 25 00.

2.2 DESCRIPTION

.1 Regulatory Requirements:
  .1 Conform to City of Burlington Accessibility Guidelines for accessibility requirements for the handicapped.

2.3 MATERIALS

.1 Sheet Steel: ASTM A1008/A1008M.
.2 Stainless Steel Sheet: ASTM A167, Type 304.
.3 Tubing: ASTM A269, stainless steel.
.4 Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof.
.5 Expansion Shields: Fibre, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.4 FABRICATION

.1 Weld and grind joints of fabricated components, smooth.
.2 Form exposed surfaces from single sheet of stock, free of joints. Form surfaces flat without distortion. Maintain surfaces without scratches or dents.
.3 Shop assemble components and package complete with anchors and fittings.
.4 Provide steel anchor plates, adapters, and anchor components for installation.

2.5 KEYING

.1 Supply 2 keys for each accessory to Owner.
.2 Master key all accessories.

Part 3 Execution

3.1 EXAMINATION

.1 Section 01 71 00: Verify existing conditions before starting work.
.2 Verify that field measurements are as indicated.
.3 Verify that site conditions are ready to receive work and dimensions are as indicated on Shop Drawings and 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.
.2 Install plumb and level, securely and rigidly anchored to substrate.

3.4 SCHEDULES

.1 Grab Bars:
  .1 Manufacturer/Model:

.1 ASI 3500 Series 1-1/2" DIA - Exposed Mount Grab Bars. Grab bars (GB): 38 mm dia x 3 mm wall tubing of stainless steel, 76 mm diameter wall flanges, concealed screw attachment, flanges welded to tubular bar, provided with steel back plates and all accessories. Knurl bar at area of hand grips. Grab bar material and anchorage to withstand downward pull of 2.2 kN.

END OF SECTION

Specification created using NBS Chorus