1 Consultants

The following are the consultants who have prepared these Contract Documents:

Prime Consultant (Architect):

Mitchell Jensen Architects Inc
7 John Street, Unit 3,
Huntsville, ON
P1H 1H2

Phone: (705) 788-0650
FAX: (705) 788-3257

Structural Consultant:

Lea Engineering
425 University Avenue, Suite 400
Toronto, ON
M5G 1T6

Phone: (416) 572-1784

Mechanical & Electrical Consultant:

HL Engineering
14721 Woodbine Avenue
Stouffville, ON
L4A 2G7

Phone: (905) 713-0003

END OF SECTION

1 Seals and Signatures

.1 The following seals and signatures are provided as required by Section 2.3.1 of the Ontario Building Code and apply to the areas of expertise for which each consultant was commissioned and further apply to those drawings and specification sections which bear their name.

ARCHITECTURAL
SPECIFICATIONS (A)
Mitchell Jensen Architects
Jason Lowe, B.Arch., OAA, AAA, AIBC - Architect

END OF SECTION

1. List of Documents

.1 Review the documents received and ensure that all documents are complete.
.2 The following is a list of all documents issued for Tender.
.3 DRAWINGS (Ensure, site selected for submission contain all drawings as listed the following) :

.1 Archie Stouffer Elementary School
- A1 Matrix, Legend, Notes, Key Plan, Mounting Standards, Schedule & Signage
- A2 Demolition Plan and Proposed Plan
- A3 Reflected Ceiling Plan & Elevations
- M-01 Mechanical Drawing List, Legend, Schedule, Detail, Specification and Key Plan.
- M-02 Mechanical Plans
- M-03 Mechanical Specification
- E-01 Legend and Details -Electrical
- E-02 Floor Plans – Electrical
- E-03 Specifications – Electrical

.2 Bobcayeon Public School
- A1 Matrix, Legend, Notes, Key Plan, Mounting Standards, Schedule & Signage
- A2 Demolition Plan, Proposed Plan, Reflected Ceiling Plan & Elevations
- M-01 Mechanical Drawing List, Legend, Schedule, Detail, Specification and Key Plan.
- M-02 Mechanical Plans
- M-03 Mechanical Specification
- E-01 Legend and Details -Electrical
- E-02 Floor Plans – Electrical
- E-03 Specifications – Electrical

.3 Dunsford District Public School
- A1 Matrix, Legend, Notes, Key Plan, Mounting Standards, Schedule & Signage
- A2 Demolition Plan, Proposed Plan, Reflected Ceiling Plan, Elevations & Details
- M-01 Mechanical Drawing List, Legend, Schedule, Detail, Specification and Key Plan.
- M-02 HVAC Plans
- M-03 Plumbing and Drainage Plans
- M-04 Mechanical Specification
- E-01 Legend and Details -Electrical
- E-02 Floor Plans – Electrical
- E-03 Specifications – Electrical

.4 Leslie Frost Public School
- A1 Matrix, Legend, Notes, Key Plan, Mounting Standards, Schedule & Signage
- A2 Demolition Plan, Proposed Plan, Reflected Ceiling Plan & Elevations
- M-01 Mechanical Drawing List, Legend, Schedule, Detail, Specification and Key Plan.
- M-02 Mechanical Plans
- M-03 Mechanical Specification
- E-01 Legend and Details -Electrical
- E-02 Floor Plans – Electrical
- E-03 Specifications – Electrical

.5 LCVI
- A1 Matrix, Legend, Notes, Key Plan, Schedule & Signage
- A2 Demolition Plan, Proposed Plan, Reflected Ceiling Plan & Elevations

A3	Elevations, Sections & Details
M-01	Mechanical Drawing List, Legend, Schedule, Detail, Specification and Key Plan.
M-02	Mechanical Plans
M-03	Mechanical Specification
E-01	Legend and Details -Electrical
E-02	Floor Plans – Electrical
E-03	Specifications – Electrical

.4 PROJECT MANUAL:

Division 00		No. Pages
00020	Consultants	1
00025	Professional Signatures and Seals	1
00050	List of Documents	3

Division 01 - General Requirements

01011	Summary of Work	2
01031	Alteration Procedures	4
01045	Cutting and Patching	2
01210	Allowances	2
01300	Submittals	4
01400	Quality Control	3
01601	Material and Equipment	4
01700	Contract Closeout	5
01721	Project Record Documents	4

Division 02 – Site Work
This Division Not Used

Division 03 – Concrete
This Division Not Used

Division 04 – Masonry

04050	Masonry Procedures	4
04100	Mortar & Grout for Masonry	2
04220	Concrete Unit Masonry	2

Division 05 – Metals

05500	Metal Fabrications	3
	Structural Details	10

Division 06 - Wood and Plastic

06100	Rough Carpentry	4
06200	Finish Carpentry	3
06400	Architectural Woodwork	5

Division 07 - Thermal and Moisture Protection

07840	Fire Stopping and Smoke Seals	3
07900	Sealants	4

Division 08 – Doors and Windows

08100 Steel Doors, Frames & Screens 4
08710 Finish Hardware 10
Finish Hardware Schedule 5

Division 09 – Finishes

09250 Gypsum Board 4
09310 Ceramic Tile, Porcelain Tile and Glass Tile 3
09510 Suspended Acoustical Ceilings 2
09660 Resilient Flooring 5
09900 Painting 6
09960 Intumescent Paint 3

Division 10 - Specialties

10170 High Density Polyethylene Toilet Partitions 3
10800 Toilet & Bath Accessories 4

Division 11 - Equipment

This Division Not Used

Division 12 - Furnishing

This Division Not Used

Division 13 - Special Construction

This Division Not Used

Division 14 - Conveying Systems

This Division Not Used

END OF SECTION

1.0 REQUIREMENTS INCLUDED

.1 General description of the Work.
.2 Specification References.
.3 Timing of the Work.

2.0 RELATED REQUIREMENTS

.1 Supplementary General Conditions.

3.0 WORK COVERED BY CONTRACT

.1 Work of this contract generally comprises the construction of alterations to the existing building to accommodate a new universal washroom; refer drawings and specifications for a full description.
.2 In its entirety the scope of work required to complete this project, as defined by the Contract Documents, is referred to as the "Work" of this contract, or the "Project".
.3 The location of the Work – Various; refer to drawings and specifications.
.4 The Owner is the “Trillium Lakelands District School Board”.

4.0 TIMING OF WORK

.1 Time is of the essence in this contract.
.2 Once activity has commenced at the Site, perform the Work continuously toward completion. Periods of inactivity on site will not be permitted without prior consent of the Owner.
.3 Commence the Work immediately following the acceptance of the tender by the Owner.

5.0 SPECIFICATION REFERENCES

.1 Where in the specification "General Requirements" is referred to, this shall be interpreted as meaning requirements contained in Division 1 inclusive.

6.0 CONTRACTOR'S USE OF THE PREMISES

.1 The Contractor will be responsible to provide and delineate detours for traffic to, from and in the vicinity of the site as required.
.2 Coordinate the Work and all activities on site with the Owner's representative to ensure the safety of residents and staff and visitors to minimize disruption and/or inconvenience.
.3 The Contractor will be responsible to provide and delineate detours for traffic to, from and in the vicinity of the site as required.
.4 Assume full responsibility for the protection and safekeeping of products under this Contract.
.5 Obtain and pay for the additional storage or work areas needed for operations under this Contract.
.6 Areas within the existing building may require work to be undertaken outside of normal working hours. The Contractor shall bear premium costs associated with this work. The Owner will cooperate to avoid or minimize the extent of such premium time.

.7 Preserve safe egress from the building at all times during the execution of the Work and do not impede required exits at any time.

.8 Construct temporary dust and sound proof hoarding between existing building and new addition. Construct from gypsum wallboard installed on both sides of metal studs. Fill stud spaces with batt insulation. Hoarding must be secure and safe to all occupants at all times. If doors are incorporated into the hoarding, they shall be lockable and shall remain locked at all times.

.9 Supply and install temporary signage required to demarcate temporary exit paths as later directed by Consultant and to the satisfaction of the local building and fire departments.

.10 Existing Utilities

- .1 The Contractor shall take every precaution to prevent or minimize disruption to utilities/services including gas, hydro, bell, cable television, water, sanitary and storm services.
- .2 Accidental disruptions must be attended to immediately. Provisions and procedures for such instances should be put in place in anticipation of them occurring and is especially for the hydro, bell and water services to the building.
- .3 Planned disruptions shall be coordinated with the Owner, the Consultant and the respective utility service provider. These disruptions will be scheduled to best suit the Owner's operations and may need to be carried out during the evening hours. A minimum of 1 weeks notice is required for approval by the Owner.

.11 Road Closing

- .1 No existing Provincial Highway or Municipal streets shall be occupied or closed without permission of the governing authority. The Contractor shall notify the Consultant in writing of proposed road closing at least 96 hours in advance of such action, and shall not detour nor restrict traffic until he has received the governing authority's written approval. All traffic restriction shall comply with Municipal and Ministry of Transportation of Ontario Regulations, whichever govern. All work which restricts or detours traffic shall be carried out systematically and expeditiously so as to minimize the inconvenience to vehicular and pedestrian traffic.
- .2 Any road closure shall be carried out systematically following the sequence of the underground utility installation and the direction of the Consultant.
- .3 The Contractor will be responsible for the setting up of and maintenance of signage of all traffic routes for local vehicular and pedestrian traffic within the Contract limits.

7.0 SEQUENCING FOR PHASING/SCHEDULING

.1 This work shall be completed in a single phase. Time is of the essence. See also Division 0 documents.

END OF SECTION

1.0 QUALITY ASSURANCE

.1 Conform to Ontario Building Code, Ontario Occupational Health and Safety Act and all other Standards and Regulations noted.
.2 All work performed and materials used shall be of the same standard of quality as that of the existing finished building as a minimum.
.3 Any welding shall be performed by Welders certified in accordance with CSA W47, and shall conform to CSA W59.

2.0 SECURITY

.1 Make provision to maintain building security in a manner acceptable to the Owner during construction and after normal working hours.

3.0 ACCESS

.1 Contractor's access to the work and storage space shall be as agreed between the Owner and Contractor.

4.0 SCHEDULING

.1 The Contractor shall schedule his work and the sequence of operations in cooperation with the Owner and Consultant. Work shall proceed in strict accordance with the agreed upon and approved schedule.
.2 Utility and service outages shall be kept to a minimum and will be permitted only with written permission of the Owner. Make outage requests at least 48 hours before date of proposed outage. State in request hours of outage.
.3 The building and facilities shall remain open throughout the course of construction and access to the building shall be maintained for the safe use by staff, students and public. Co-ordinate scheduling of work and sequencing of areas to be used for construction with the Owner before work begins.

5.0 ENVIRONMENTAL REQUIREMENTS

.1 Suppress all dust and dirt. Prevent the occurrence of unsanitary conditions, flooding or leaking.
.2 Do not allow dirt, debris or discarded materials to accumulate on site. Remove promptly each day.
.3 Obtain written confirmation from Owner that services to be abandoned, removed or cut have been properly and safely shut off, capped or sealed.
.4 If asbestos or silica type insulation or fireproofing are encountered during alteration work cease work in the specific area at once and notify the Consultant immediately. Await Consultant's written instructions before proceeding.
.5 Take extreme care when removing asbestos or silica board fireproofing. Comply strictly with health and safety regulations. Bag material and dispose of in accordance with regulations. Enforce use of breathing masks during cleaning operations.

6.0 DEMOLITION

.1 Cutting, removing and demolition shall be performed so as not to cut or remove more than is necessary or to damage adjacent work.
.2 Do not let piled material endanger structure or persons at any time or create unsanitary conditions.
.3 Where demolition work involves cutting into any part of the building structure, materials or finishes which are to be extended, added to or joined to new work, the cutting shall be performed by trades whose work is encountered.
.4 Construction, furnishings and articles of a private or historic nature which are encountered during demolition shall be turned over to the Owner, or they shall be disposed of as the Owner directs for the specific item.
.5 Cut out and remove all those assemblies, materials or items indicated as being removed, abandoned or discarded on the drawings and promptly removed from the site if not wanted by Owner.

7.0 ALTERATIONS, CUTTING AND PROTECTION

.1 Extent
  .1 Cutting and removal work shall be performed so as not to cut or remove more than is necessary and so as not to damage adjacent work.
.2 Responsibility and Assignment to Trades
  .1 Contractor shall assign the work of moving, removal, cutting, patching and repair to trades under his supervision so as to cause the least damage to each type of work encountered, and so as to return the building as much as possible to the appearance of new work.
  .2 Patching of finish materials shall be assigned to mechanics skilled in the work of the finish trade involved.
.3 Protection
  .1 Protect remaining finishes, equipment and adjacent work from damage caused by cutting, moving, removal and patching operations. Protect surfaces which will remain a part of the finished work.
.4 Debris
  .1 Remove debris promptly from the site each day. Removed material, except that listed or marked by the Consultant for retention, becomes the property of the Contractor. Load removed material directly on trucks for removal from site. Dispose of removed material legally. Do not burn on site. Do not allow debris to enter sewers.
  .2 Do not let piled material endanger structure.
  .3 Suppress dust. Prevent the occurrence of unsanitary conditions, dirt or debris on the site and neighbouring property.
  .4 Any salvaged items left over after completion of the Work shall be delivered to a place of storage designated by the Owner, or they shall be disposed of by the Contractor as directed by Owner.

8.0 PATCHING, EXTENDING AND MATCHING

.1 Skill
- .1 Patch and extend existing work using skilled mechanics who are capable of matching the existing quality or workmanship. The quality of patched or extended work shall not be less than that specified in the Sections of the product and execution Specifications which follow these General Requirements.

.2 Patching
- .1 In areas where any portion of an existing finished surface is damaged, lifted, stained or otherwise made or found to be imperfect, patch or replace the imperfect portion of the surface with matching material.
- .2 Do not incorporate salvaged or used material in new construction, except where small quantities of finish material which are difficult to match or duplicate are approved for patching or extending purposes by the Consultant.
- .3 Provide adequate support or substrate for patching of finishes.
- .4 If the imperfect surface was painted or coated, repaint or recoat the patched portion in such a way that uniform colour and texture over the entire surface results.
- .5 If the surrounding surface cannot be matched, repaint or recoat the entire surface.

.3 Quality
- .1 In the Sections of the Specifications which follow these General Requirements, no concerted attempt has been made to describe each of the various existing products that must be used to patch, match, extend or replace existing work. Obtain all such products in time to complete the Work on Schedule. Such products shall be provided in quality which is in no way inferior to the existing products.
- .2 The quality of the products that exist in the building, as apparent during prebid site visits, shall serve as the minimum Specification requirement for strength, appearance and other characteristics.

.4 Transitions
- .1 Where new work abuts or finishes flush with existing work, make the transition as smooth and workmanlike as possible. Patched work shall match existing adjacent work in texture and appearance so as to make the patch or transition invisible to the eye at a distance of one metre.
- .2 In cases of extreme change of level (50 mm or more), obtain instructions from the Consultant as to method of making transition. Either stepping, bulkheading, encasement, ramping, sloping or change of transition line shall be employed, or a combination of these, as directed in each case by the Consultant.

.5 Matching
- .1 Restore existing work that is damaged during construction to a condition equal to its condition at the time of the start of the Work.

.6 Overall Requirement That the Work be Complete
- .1 Where a product or type of construction occurs in the existing building, and is not specified as a part of the new work, provide such products or types of construction as needed to patch, extend or match the existing work.
- .2 These specifications will generally not describe existing products or standards of execution, nor will they enumerate products which are not a part of the new construction. The existing product is its own specification.
- .3 The presence of any product or type of construction in the old work shall cause its patching, extending or matching to be performed, as necessary to make the work complete and consistent, to identical standards of quality.

9.0 REPAIR

.1 Replace work damaged in the course of alterations, except at areas approved by the Consultant for repair.
.2 Where full removal of extensive amounts of almost-suitable work would be needed to replace damaged portions, then filling, spackling, straightening and similar repair techniques, followed by full painting or other finishing, will be permitted.
.3 If the repaired work is not brought up to the standard for new work, the Consultant will direct that it be cut out and replaced with new work at no additional cost to the Owner.

10.0 CLEANING

.1 Each Successive Trade
  .1 As the trade finishes its work on each part of the alterations work and related new work, it shall clean up its work area and make work surfaces ready for the work of the succeeding trades.
  .2 Spillage, overspray, collections of dust or debris, damage to Owner-occupied spaces shall be cleaned or remedied immediately by the responsible trade.
.2 Each Area as It is Completed
  .1 As soon as work in each area of the alterations is complete, clean up all surfaces, remove equipment, salvage and debris and return in condition suitable for use by the Owner as quickly as possible.
.3 Prior to final acceptance, review final cleaning with Owner's representative and the Consultant.

END OF SECTION

1.0 REQUIREMENTS INCLUDED

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

2.0 RELATED REQUIREMENTS

.1 Section 01011 - Summary of Work.
.2 Section 01601 - Material and Equipment.
.3 Individual Sections: cutting and patching incidental to work of the section. Advance notification to other sections required.

3.0 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 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.

4.0 GENERAL

.1 Execute cutting, fitting, and patching including excavation and fill, to complete the Work.
.2 Fit the several parts together, to integrate with other work.
.3 Uncover work to install ill-timed work.
.4 Remove and replace defective and non-conforming work.
.5 Remove samples of installed work for testing.
.6 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical work.

5.0 INSPECTION

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
.2 After uncovering, inspect conditions affecting performance of work.
.3 Beginning of cutting or patching means acceptance of existing conditions

6.0 PREPARATION

.1 Provide supports to assure structural integrity of surroundings; 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.

7.0 PERFORMANCE

.1 Execute work by methods to avoid damage to other work, and which will provide proper surfaces to receive patching and finishing.
.2 Use material to match existing.
.3 For a change in material submit request for substitution under provisions of Section 01601.
.4 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and exposed surfaces.
.5 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed without prior approval.
.6 Restore work with new products in accordance with requirements of Contract Documents.
.7 Fit work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
.8 At penetration of fire-rated wall, ceiling, or floor construction, completely seal voids with fire-rated material, full thickness of the construction element.
.9 Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

END OF SECTION

1.0 REQUIREMENTS

.1 Cash allowances.

2.0 GENERAL

.1 Comply with GC 4.1 CASH ALLOWANCES and GC 4.2 CONTINGENCIES.

.2 Cash allowances are designated for additional work and services deemed to be necessary by Owner, from time to time, throughout the execution of the Work. Where a cash allowance refers to an item or category of work already included in Contract Documents, it shall be assumed to cover work or services in addition to that indicated, unless specifically indicated otherwise.

.3 Contractor may be required from time to time to assist in tendering of certain items of work covered by allowance, as directed by Consultant.

3.0 AUTHORIZATION

.1 Expenditures from allowances included in the Contract must be authorized in writing by the Consultant in the form of a Site Instruction.

.2 Work covered by allowances shall be performed for such amounts and by such persons as directed by the Consultant.

4.0 CASH ALLOWANCES

.1 Include the following sums for the cash allowance to be expended as authorized by the Consultant.

.1	Archie Stouffer Elementary School:	$12,000 (twelve thousand dollars)
.2	Bobcayeon Public School:	$4,000 (four thousand dollars)
.3	Dunsford District Public School:	$10,000 (ten thousand dollars)
.4	Leslie Frost Public School:	$7,000 (seven thousand dollars)
.5	Lindsay Collegiate & Vocational Institute:	$10,000 (ten thousand dollars)

.2 Include the following sums for the telecom systems cash allowance to be expended as authorized by the Consultant.

.1	Archie Stouffer Elementary School:	$2,000 (two thousand dollars)
.2	Bobcayeon Public School:	$2,000 (two thousand dollars)

.3	Dunsford District Public School:	$2,000 (two thousand dollars)
.4	Leslie Frost Public School:	$2,000 (two thousand dollars)
.5	Lindsay Collegiate & Vocational Institute:	$2,000 (two thousand dollars)

.3 Include the following sums for the drainage cash allowance to be expended as authorized by the Consultant. This allowance is to include the inspection of all drains being affected by construction. Drain lines are to be inspected along entire pipe until a connection to a main line is made. The inspection is to be done by camera and a video of the camera inspection is to be submitted by USB along with a written report. Two inspections are to take place, the first inspection is to be done prior to demolition and the second is to be done after construction is complete.

.1	Archie Stouffer Elementary School:	$3,000 (three thousand dollars)
.2	Bobcayeon Public School:	$3,000 (three thousand dollars)
.3	Dunsford District Public School:	$3,000 (three thousand dollars)
.4	Leslie Frost Public School:	$3,000 (three thousand dollars)
.5	Lindsay Collegiate & Vocational Institute:	$3,000 (three thousand dollars)

END OF SECTION

1.0 REQUIREMENTS INCLUDED

.1 Contract Security
.2 Certificates and transcripts
.3 Contract Cost Breakdown
.4 Permit, Licenses and Fees
.5 Shop drawings, product data and samples
.6 Operating and maintenance manuals
.7 Record drawings

2.0 RELATED REQUIREMENTS

.1 Section 01400: Submission of test and mix design
.2 Section 01700: Submission of contract closeout documents

3.0 CONTRACT SECURITY

.1 Contractor shall acquire at his expense the following bonds:
  .1 50% Performance Bond
  .2 50% Labour and Materials Bond
.2 Submit required Bonds prior to commencing work on site.
.3 Bonds shall be issued by a surety company acceptable to the Consultant and kept in force until expiration of the Contract.

4.0 CERTIFICATES AND TRANSCRIPTS

.1 Prior to commencing work on site, and with each application for progress payment submit Clearance Certificate from Workplace Safety & Insurance Board.
.2 Prior to commencing work on site, in accordance with GC 11.1, submit:
  .1 Certificate of General Liability Insurance.
  .2 Certificate of "All Risk" Property and Boiler Insurance.
.3 Re-submit insurance certificates prior to expiration dates of certificates submitted.

5.0 CONTRACT COST BREAKDOWN

.1 Refer to GC 5.2.
.2 Submit a breakdown of the Contract Price into items related to components of the Work. Items must be small enough to permit analysis of percentage of completion.
.3 Submit breakdown a minimum of two weeks prior to first application for payment, for approval of the Consultant.

6.0 PERMITS, LICENCES, FEES

.1 The owner shall obtain and pay for cost of the building permit.
.2 Where permits, licenses and inspection fees are required by authorities having jurisdiction for specific trade functions, they shall be obtained by particular subtrade responsible for that work.

7.0 CLOSE OUT DOCUMENTATION LIST

.1 Within 30 days of the award of the Contract, the Contractor shall submit two lists covering all documentation and material required by the specification to be provided at Project Close Out.
.2 The first list shall include all material required at Substantial Performance in order to allow the Owner to properly operate the premises. These shall include but not be limited to:
  .1 Operating Instructions
  .2 Maintenance Manuals
  .3 Spare Parts
  .4 Certificates of Authorities Having Jurisdiction
  .5 Certificates of Independent Inspection Agencies
.3 The second list shall include all material required before issuance of the Final Payment Certificated. These shall include but not be limited to:
  .1 Maintenance Manuals
  .2 Spare Parts
  .3 Warranties
  .4 Record Drawings
.4 The Consultant will review and comment on these lists as provided. Such review shall not however, relieve the Contractor of the requirement for submission of all documentation required by the specification.
.5 Upon acceptance by the Consultant, the Contractor shall commence the collection of the required documentation.

8.0 ADMINISTRATIVE

.1 Submit to Consultant submittals listed throughout specification, for review. Submit with reasonable promptness and in an orderly sequence so as to not cause delay in the Work. Failure to submit in ample time is not considered sufficient reasons for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
.2 Work affected by the submittal shall not proceed until review is complete.
.3 Review submittals prior to submission to the Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with the requirements of the Word and the Contract Documents. Submittals not stamped, signed, dated and identified as to the specific project will be returned without being examined and shall be considered rejected.
.4 Verify field measurements and affected adjacent Work are coordinated.
.5 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant review of submittals.
.6 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.
.7 Keep one reviewed copy of each submission on site.

9.0 SHOP DRAWINGS AND PRODUCT DATA

.1 Refer to GC 3.10, and in particular 3.10.5 shop drawings not reviewed and so-stamped by the Contractor will be returned "not reviewed".

.2 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of the Work.

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

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

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

.6 Submit a Contractor reviewed/stamped digital copy of shop drawings for each requirement requested in specification Sections and as the Consultant may reasonably request.

.7 Submit a Contractor reviewed/stamped digital copy of product data sheets or brochures for requirements requested in specification Sections and as the Consultant may reasonably request where shop drawings will not be prepared due to standardized manufacture of product.

.8 If upon review by the Consultant, no errors or omissions are discovered or if only minor corrections are made, the document will be returned digitally and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected digital shop drawings, through the same procedure indicated above, shall be performed before fabrication and installation of Work may proceed.

.9 Dimensions on shop drawings must be in the same system used on the contract documents or shop drawings will be returned "not reviewed".

.10 Reproductions of Consultant's drawings are not acceptable shop drawings.

10.0 SAMPLES

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

.2 Deliver samples prepaid to Consultant's business address.

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

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

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

11.0 OPERATING MAINTENANCE MANUALS

.1 Two weeks prior to Substantial Performance of each stage of the Work, submit to the Consultant, copies of operating and maintenance manuals in accordance with Section 01721.

.2 Manuals to contain operational information on equipment, cleaning and lubrication schedules, filters, overhaul and adjustment schedules and similar maintenance information. Instructions in this manual shall be in simple language so as to guide the Owner in the proper operation maintenance of building components.

.3 Bind contents in a three-ring, hard covered, plastic jacketed binder. Organize contents into applicable categories of work, parallel to specifications Sections.

.4 In addition to information specified, include the following:

- .1 Title sheet, labeled "Operating and Maintenance instructions", containing project name and date.
- .2 List of names, addresses and phone number of subcontractors and suppliers who can effect repair of maintenance on equipment.
- .3 List of contents.
- .4 Final reviewed/approved shop drawings and product data of equipment.
- .5 Record drawings of mechanical and electrical installation.
- .6 Full description of building systems and operation.

.5 Submit mechanical and electrical manuals directly to the mechanical and electrical Engineers for review and approval. When approved, manuals will be submitted to the Architect by the mechanical and electrical Engineers.

12.0 RECORD DRAWINGS

.1 Complete and submit Project Record Drawings in accordance with Section 01721.

.2 Submit mechanical and electrical manuals directly to the mechanical and electrical Engineers for review and approval. When approved, "as built drawings" will be submitted to the Architect by the mechanical and electrical Engineers.

END OF SECTION

1.0 REQUIREMENTS INCLUDED

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

2.0 RELATED REQUIREMENTS

.1 Section 01300: Submission of samples to confirm product quality.
.2 Section 01601: Material and workmanship quality, reference standards.

3.0 INSPECTION

.1 Refer to GC 2.3.
.2 The Owner and the Consultant shall have access to the Work. If parts of the Work are in preparation at locations other than the Place of the Work, access shall be given to such work whenever it is in progress.
.3 Co-operate to provide reasonable facilities for such access.
.4 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Consultant or testing agencies. Such notification shall be not less than 2 working days.
.5 If the 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 the inspections or tests satisfactorily completed and make good such Work.
.6 The Consultant may order any part of the Work to be examined if such work is suspected to be not in accordance with the Contract Documents, correct such work and pay the cost of examination and correction. If such Work is found in accordance with the Contract Documents, the Owner will pay the cost of examination and replacement.

4.0 INDEPENDENT INSPECTION AGENCIES

.1 Independent Inspection/Testing Agencies will be appointed by the Consultant for the purpose of inspecting and/or testing portions of Work.
.2 Costs shall be paid from cash allowance as set out in Section 01210, Allowances.
.3 Provide equipment required for executing inspection and testing by the appointed agencies.
.4 Employment of inspection/testing agencies does not relax the responsibility to perform Work in accordance with the Control Documents.
.5 If defects are revealed during inspection and/or testing, the appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defects and irregularities as advised by Consultant at no cost to the Owner. Pay costs for retesting and re-inspection.

5.0 PROCEDURES

.1 Notify the appropriate agency and Consultant in advance of the requirement for tests, in order that attendance arrangements can be made. Such notification shall be not less than 2 working days.
.2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in the Work.
.3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

6.0 REJECTED WORK

.1 Refer to GC2.4.
.2 Remove defective Work, whether the result of poor workmanship, use of defective products or damage and whether incorporated in the Work or not, which as been rejected by the Consultant as failing to conform to the Contract Documents. Replace or re-execute in accordance with the Contract Documents.
.3 Make good other Contractor's work damaged by such removals or replacements promptly.
.4 If in the opinion of the Consultant it is not expedient to correct defective Work or Work not performed in accordance with the Contract Documents, the Owner may deduct from the Contract Price the difference in value between the Work performed and that called for by the Contract Documents, the amount of which shall be determined by the Consultant.

7.0 REPORTS

.1 Independent Inspection Agencies shall be instructed to submit 4 copies of inspection and test reports promptly and directly to the Consultant, and 2 copies to the Contractor.
.2 Provide copies to Subcontractor of work being inspected/tested and/or manufactured/fabricator of material being inspected/tested.

8.0 TESTS AND MIX DESIGNS

.1 Furnish test results and mix designs as may be requested.
.2 The cost of tests and mix designs beyond those called for in the Contract Documents or beyond those required by the Law of the Place of Work shall be appraised by the Consultant and may be authorized as recoverable.

9.0 MOCK-UPS

.1 Prepare mock-ups for Work specifically requested in the specifications. Include for Work of all Sections required to provide mock-ups.
.2 Construct in locations acceptable to the Consultant.
.3 Prepare mock-ups for Consultant review with reasonable promptness and in an orderly sequence, so as not to cause any delay in the Work.
.4 Failure to prepare mock-ups in ample time is not considered sufficient reasons for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.5 If requested, the Consultant will assist in preparing a schedule fixing the dates for preparation.
.6 Remove or incorporate mock-ups at conclusion of Work or when acceptable to Consultant.

10.0 MILL TESTS

.1 Submit mill test certificates as required of the specification Sections or may be requested.

11.0 EQUIPMENT/SYSTEMS

.1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.
.2 Refer to Divisions 15 & 16 for definitive requirements.

END OF SECTION

1.0 REQUIREMENTS INCLUDED

.1 Reference standards.
.2 Product quality, availability, storage, handling, protection, transportation.
.3 Manufacturer's instructions.
.4 Workmanship, co-ordination, cutting, fastenings.
.5 Existing facilities.

2.0 RELATED REQUIREMENTS

.1 Section 01400: Quality control and inspection of Work.

3.0 REFERENCE STANDARDS

.1 Within the text of the specifications, reference may be made to the following standards:

AWMAC	-	Architectural Woodwork Manufacturers Association of Canada
ACI	-	American Concrete Institute
AISC	-	American Institute of Steel Construction
ANSI	-	American National Standards Institute
ASTM	-	American Society of Testing and Materials
CEC	-	Canadian Electrical Code including Ontario Supplement (published by CSA)
EEMAC	-	Electrical and Electronic Manufacturers Association of Canada
CGSB	-	Canadian General Standards Board
CISC	-	Canadian Institute of Steel Construction
CLA	-	Canadian Lumberman's Association
CPCA	-	Canadian Painting Contractors' Association
CPCI	-	Canadian Prestressed Concrete Institute
CRCA	-	Canadian Roofing Construction Association
CSA	-	Canadian Standards Association
FM	-	Factory Mutual Engineering Corporation
IEEE	-	Institute of Electrical and Electronic Engineers
IPCEA	-	Insulated Power Cable Engineers Association
NAAMM	-	National Association of Architectural Metal Manufacturers
OBC	-	Ontario Building Code
NEMA	-	National Electrical Manufacturers Association
OPSD	-	Ontario Provincial Standards for Roads & Municipal Services
TTMAC	-	Terrazzo, Tile and Marble Association of Canada
ULC	-	Underwriters' Laboratories of Canada

Conform to these standards, in whole or in part, as specifically requested in the specifications.

.2 If there is question as to whether any product or system is in conformance with applicable standards, the Consultant reserves the right to have such products or systems tested to prove or disprove conformance.
.3 The cost for such testing will be borne by the Owner in the event of conformance with Contract Documents or by the Contractor in the event of non-conformance.

.4 Conform to latest date and issue of reference standards effect on date of submission of bids except where a specific date or issue is specifically noted.

4.0 PRODUCTS AND MATERIALS

.1 Quality
- .1 Refer to GC3.8.
- .2 Products, materials, equipment and articles (referred to as Products throughout the specifications) incorporated in the Work shall be new, not damaged or defective, and of the best quality (compatible with specifications) for the purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .3 Defective Products, whenever identified prior to the completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is a precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.
- .4 Should any dispute arise as to the quality or fitness of Products, the decision rests strictly with the Consultant based upon the requirements of the Contract Documents.
- .5 Unless otherwise indicated in the specifications, maintain uniformity of manufacture for any particular or like item throughout the building.
- .6 Permanent labels, trademarks and nameplates on Products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

.2 Availability
- .1 Immediately upon signing Contract, review Product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of Products are foreseeable, notify the Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In the event of failure to notify the Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, the Consultant reserves the right to substitute more readily available products of similar character, at no increase in Contract Price.

.3 Storage, Handling and Protection
- .1 Handle and store Products in a manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instruction when applicable.
- .2 Store packaged or bundled Products in original and undamaged condition with manufacturer's seals and labels intact. Do not remove from packaging or bundling until required in the Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in a heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged Products at own expense and to the satisfaction of the Consultant.

.4 Transportation
.1 Pay costs of transportation of Products required in the performance of Work.

5.0 MANUFACTURER'S INSTRUCTIONS

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

6.0 WORKMANSHIP

.1 General
.1 Workmanship shall be the best quality, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the Consultant if required Work is such as to make it impractical to produce required results.
.2 Do not employ any unfit person or anyone unskilled in their required duties. The Consultant reserves the right to require the dismissal from the site, workers deemed incompetent, careless, insubordinate or otherwise objectionable.
.3 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with the Consultant, whose decision is final.
.2 Co-ordination
.1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
.2 Be responsible for co-ordination and placement of openings, sleeves and accessories.
.3 Concealment
.1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
.2 Before installation, inform the Consultant if there is a contradictory situation. Install as directed by Consultant.
.4 Cutting and Remedial Work
.1 Refer to GC3.12 and Section 01045 Cutting and Patching.
.2 Perform cutting and remedial work required to make the parts of the Work come together. Co-ordinate the Work to ensure this requirement is maintained.
.3 Should work performed outside this contract necessitate cutting and/or remedial work to be performed, the cost of such work will be valued by the Consultant as provided in GC12, Valuation and Certification of Changes in the Work.
.4 Perform cutting and remedial work by specialists familiar with the materials affected. Perform in a manner to neither damage nor endanger any portion of Work.
.5 Location of Fixtures
.1 Consider the location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
.2 Inform the Consultant of a conflicting installation. Install as directed.

.6 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 the affected specification Section.
- .4 Space anchors within their 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. Request direction of Consultant in the placing of exposed fastenings.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

.7 Protection or Work in Progress
- .1 Adequately protect Work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by the Consultant, at no increase in Contract Price.
- .2 Prevent overloading of any part of the building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated without written approval of Consultant.

.8 Existing Utilities
- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with a minimum of disturbance to Work, and/or building occupants and pedestrian and vehicular traffic.
- .2 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in a manner approved by authority having jurisdiction and stake or otherwise record location of capped service.

END OF SECTION

1.0 REQUIREMENTS INCLUDED

.1 Final cleaning.
.2 Systems demonstration.
.3 Document submission.
.4 Project commissioning.
.5 Inspection and takeover procedures.

2.0 RELATED REQUIREMENTS

.1 Section 01300: Submission of record drawings.
.2 Section 01300: Operating/maintenance manuals.
.3 General Conditions of the Contract: Fiscal provision, legal submittals, and other administrative requirements.

3.0 FINAL CLEANING

.1 Refer to GC3.13.
.2 When the Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for the performance of the remaining Work.
.3 Remove waste products and debris other than that caused by the owner, other contractors or their employees, and leave the Work clean and suitable for occupancy by Owner.
.4 When the Work is Totally Performed, remove surplus products, tools, construction machinery and equipment. Remove waste products and debris other than that caused by the Owner or other Contractors.
.5 Remove waste materials and debris from the site at regularly scheduled times or dispose of as directed by the Consultant. Do not burn waste materials on site, unless approved by the Consultant and authorities having jurisdiction.
.6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
.7 Leave the work broom clean before the inspection process commences.
.8 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, baked enamel, plastic laminate, mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
.9 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors and casework.
.10 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
.11 Wax, seal, shampoo or prepare floor finishes, as recommended by the manufacturer.
.12 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
.13 Broom clean and wash exterior walks, steps and surfaces.
.14 Remove dirt and other disfigurations from exterior surfaces.
.15 Clean and sweep roofs, gutters, areaways, sunken wells.
.16 Sweep and wash clean site paved areas.
.17 Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment.
.18 Clean roofs, gutters, downspouts, and drainage systems.

4.0 SYSTEMS DEMONSTRATION

.1 Prior to final inspection, demonstrate operation of each system to Owner.
.2 Instruct personnel in operation, adjustment, and maintenance of equipment and systems, using provided operation and maintenance data as the basis for instruction.

5.0 DOCUMENTS

.1 Collect reviewed submittals (Section 01300) and assemble documents executed by Subcontractors, suppliers, and manufacturers.
.2 Submit material prior to final Application for Payment. For equipment put into use with Owner's permission during construction, submit within 10 days after start-up. For items of Work delayed materially beyond date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.
.3 Provide warranties and bonds fully executed and notarized.
.4 Execute transition of Performance and labour and Materials Payment Bond to warranty period requirements.
.5 Submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and monies remaining due.
.6 Consultant will issue a final change order reflecting approved adjustments to Contract Sum not previously made.

6.0 PROJECT COMMISSIONING

.1 Expedite and complete deficiencies and defects identified by the Consultant.
.2 Review maintenance manual contents (operating, maintenance instructions, record "as-built" drawings, spare parts, materials) for completeness.
.3 Submit required documentation such as statutory declarations, Clearance Certificates issued by Workplace Safety & Insurance Board, warranties, certificates of approval or acceptance from regulating bodies.
.4 Attend 'end-of-work' testing and break-in or start-up demonstrations.
.5 Review inspection and testing reports to verify conformance to the intent of the documents and that changes, repairs or replacements have been completed.
.6 Meet with other consultants, structural, mechanical, electrical, elevator, refrigeration to co-ordinate completion, testing approvals.
.8 Review condition of equipment (heating system, elevators), which have been used in the course of the work to ensure turning over at completion in "as new condition" with warrantees, dated and certified from time of Substantial Performance of the Work.
.9 Arrange and co-ordinate instruction of Owner's staff in care, maintenance and operation of building systems and finishes by suppliers or Subcontractors.
.10 When partial occupancy of uncompleted project is required by the Owner, co-ordinate Owner's uses, requirements, access, with Contractor's requirements to complete project.
.11 Co-ordinate Owner's moving-in of staff, furnishings, equipment with building accessibility, traffic, and Contractor's and Subcontractor's cleaning-up and completion activities all to suit Owner's work schedule and not disrupt Owner's operations.
.12 Provide on-going review, inspection and attendance to building call-back, maintenance and repair problems during the Warranty periods.

7.0 NOTICE OF COMPLETION

.1 The Owner, must make commitments to government agencies regarding availability of accommodations and provisions for staff.
.2 The Contractor shall provide to the Owner through the Consultant, formal 6 weeks notice of anticipated date of certification of Substantial Performance together with a commitment to achieve Total Performance within 10 weeks of the date of said notice.
.3 The Owner will arrange for occupancy of the building only following Total Performance of the Work. If the Contractor fails to achieve Total Performance within 10 weeks of the date of notification of the Substantial Performance 7.2 above, the Contractor shall pay to the Owner all liquidated damages incurred by the Owner resulting from this failure. The Owner shall be entitled to deduct the cost of such damages from any monies owing to the Contractor.

8.0 SUBSTANTIAL PERFORMANCE PROCEDURES

.1 Project takeover procedures will generally follow the "OAA/OGCA Take-Over Procedures", Document 100, except as augmented herein.
.2 Refer to General Conditions Article GC5.4 to 5.9.
.3 Prior to making application for certification of Substantial Performance, the Contractor shall undertake a formal inspection of the Work. Following this inspection, the Contractor shall produce a complete list of all uncompleted or unsatisfactory work. This list shall identify uncompleted or unsatisfactory work by room number for all interior spaces and by exterior location. This list shall be distributed to the appropriate sub-contractors for immediate action. This list will also be submitted to the Consultant on paper, and in digital format using Microsoft Word software.
.4 Make written application to the Consultant for Substantial Performance at least 3 weeks prior to the anticipated date of Certification of Substantial Performance. Such application shall include:
    .1 A statement that the Contract is substantially performed.
    .2 A statement that the balance of the work is in progress and the date upon which completion is scheduled. Where the balance of the Work, or a portion thereof, cannot be performed forthwith, and the Contractor wishes to propose a deferral of some component of the Work, the application must include an explanation of the proposed deferral and completion dates for all components to be deferred.
    .3 An itemized invoice for payment which substantiates the application for Substantial Performance.
    .4 A statement of the cost value of
        .1 Work yet to be completed including unsatisfactory work
        .2 Work which, if agreed by the Owner, will not be completed expeditiously.
.5 The application for Substantial Performance will not be considered or acted upon by the Consultant until such time as the Consultant has been provided with the following:
    .1 A complete deficiency list prepared by the General Contractor and circulated for action to sub-contractors as specified above.
    .2 Project Documentation to be provided at Substantial Performance see Section 01300, item 7.0.
.6 An Inspection for Substantial Performance will be conducted within 10 days of Application for Substantial Performance and satisfaction of the requirements of .5 above.

.7 The Inspection for Substantial Performance must include representatives of:
  .1 The Consultant
  .2 The Sub-Consultants as deemed necessary by Consultant
  .3 The Owner

.8 At the Inspection for Substantial Performance, the Consultant will compile a list of deficiencies and defects. The Consultant reserves the right to refuse to complete an Inspection for Substantial Performance and a deficiency list, if in the Consultant's opinion the incomplete or unsatisfactory work far exceeds that required to achieve Substantial Performance.

.9 If, in the judgment of the Consultant, the requirements of the Construction Lien Act for Substantial Performance have been achieved, the Consultant will issue a Certificate of Substantial Performance within 7 days of the inspection.

.10 If, in the judgment of the Consultant, the requirements of the Construction Lien Act for Substantial Performance have not been achieved, the Consultant shall notify the Contractor and the Contractor shall expedite the correction of incomplete or unsatisfactory work required to achieve Substantial Performance, and, within two weeks of initial inspection, make written application for re-inspection for Substantial Performance.

.11 The Consultant, shall provide only one re-inspection for Substantial Performance within his fee for Basic Services. Inspections beyond this, required to achieve Substantial Performance, will be charged to the Owner as Additional Services as per the terms of the Client Architect Agreement. The Owner shall be entitled to deduct from any money owing to the Contractor the cost of such additional inspections.

.12 Upon issuance of the Certificate of Substantial Performance, the Contractor will, in accordance with the Construction Lien Act, promptly publish the Certificate of Substantial Performance and provide the Consultant with proof of its publication.

.13 Upon publication of the Certificate of Substantial Performance, the Contractor shall submit to the Consultant an invoice for the value of holdback monies to be released at the expiration of the 45 day lien period. This submission must include a Statutory Declaration and a Clearance Certificate issued by the Workplace Safety & Insurance Board.

.14 The Consultant shall immediately issue a Certificate for the release of holdback dated one day following the expiration of the 45 day lien period. The Consultant will present this to the Owner with instructions to satisfy himself that no liens are registered and no notice of Lien filed against the title of the property, and only if such is the case, to pay holdback monies identified as due by the Certificate.

.15 The Contractor and sub-contractors shall continue to work to complete all work and repair all deficiencies and defects promptly.

9.0 FINAL INSPECTION PROCEDURES

.1 Project takeover procedures will generally follow the "OAA/OGCA Take-Over Procedures", Document 100, except as augmented herein.

.2 Upon completion of the Work and deficiencies and defects such that value of outstanding work does not exceed $1,000, verified by the Contractor's own inspection, the Contractor shall make written application to the Consultant for Final Inspection. Such application shall include:
  .1 A statement that the Contract is totally performed.
  .2 An itemized invoice for payment which substantiates the application for Total Performance, including a statement of the holdback monies for finishing work.

.3 The application for Final Inspection will not be considered or acted upon by the Consultant until such time as the Consultant has been provided all Project Documentation to be provided before issuance of Final Payment Certificate - see Section 01300, item 7.0.

.4 The Final Inspection must include representatives of:
  .1 The Consultant
  .2 The Sub-Consultants as deemed necessary by Consultant
  .3 The Owner

.5 At the Final Inspection, the Consultant will review the work indicated by the list of deficiencies and defects.

.6 If, in the judgment of the Consultant, the Work is satisfactorily completed, the Consultant will issue a Certificate for Payment for the value of the work, less 10% holdback. The date of this certificate shall be deemed the date of completion and the commencement of the 45 day lien period for finishing holdback.

.7 If, in the judgment of the Consultant, the Work is not satisfactorily completed, the Consultant shall notify the Contractor of outstanding deficiencies and the Contractor shall expedite the correction of incomplete or unsatisfactory work as soon as possible and make written application for re-inspection. No certificate of payment will be issued until Total Performance has been achieved.

.8 The Consultant, shall provide only one Final Inspection following Substantial Performance within his fee for Basic Services. Inspections beyond this, required to achieve a Final Payment Certificate, will be charged to the Owner as Additional Services as per the terms of the Client Architect Agreement. The Owner shall be entitled to deduct from any money owing to the Contractor the cost of such additional inspections.

.9 Upon issuance of this payment certificate, the Contractor shall submit to the Consultant an invoice for the value of finishing holdback monies to be released at the expiration of the 45 day lien period. This submission must include a Statutory Declaration and a Workers Compensation Board Certificate of Good Standing.

.10 The Consultant shall prepare a Certificate for the release of holdback dated one day following the expiration of the 45 day lien period. The Consultant will present this to the Owner with instructions to satisfy himself that no liens are registered and no notice of Lien filed against the title of the property, and only if such is the case, to pay holdback monies identified as due by the Certificate.

10.0 WARRANTY INSPECTION PROCEDURES

.1 Refer to requirements of GC 12.3.

.2 Near the end of the warranty period, an inspection meeting will be convened to be attended by representatives of:
  .1 The Consultant
  .2 The Sub-Consultants as deemed necessary by Consultant
  .3 The Owner

.3 The Consultant will prepare and issue to the Contractor a list of observed defects required to be corrected.

.4 The Contractor shall promptly correct all observed defects.

END OF SECTION

1.0 REQUIREMENTS INCLUDED

.1 Record documents, samples, specification.
.2 Equipment and systems.
.3 Product data, materials and finishes, and related information.
.4 Operation and maintenance data.
.5 Warranties and bonds.

2.0 RELATED REQUIREMENTS

.1 Section 01300 - Submittals: Shop drawings, samples, manufacturer's instructions, photographs.
.2 Section 01400 - Quality Control: Test and inspection reports.
.3 Individual Specifications Sections: Specific requirements for operation and maintenance data.

3.0 QUALITY ASSURANCE

.1 Instructions and data to be prepared by personnel experienced in maintenance and operation of described products.

4.0 FORMAT

.1 Organize data in the form of an instructional manual.
.2 Binders: commercial quality, 8 1/2 X 11 inch.
.3 When multiple binders are used, correlate data into related consistent groupings.
.4 Cover: Identify each binder with type or printed title "Project Record Documents"; list title of Project, 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 Test: Manufacturer's printed data, or typewritten data on 20 pound paper.
.8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

5.0 CONTENTS, EACH VOLUME

.1 Table of Contents: provide title of project; names, addresses, and telephone numbers of Consultant and Contractor with name of responsible parties; schedule of products and systems, indexed to contents of the volume.
.2 For Each Product or System: list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
.3 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
.4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.5 Type Text: as required to supplement product data. Provide logical sequence of instructions for each procedures, incorporating manufacturer's instructions specified in Section 01400.

6.0 SUBMISSION

.1 Submit one copy of completed volumes in final form 15 days prior to final inspection.
.2 Copy will be returned after final inspection, with Consultant comments.
.3 Revise content of documents as required prior to final submittal.
.4 Submit two (2) copies of revised volumes of data in final form within ten days after final inspection.

7.0 RECORD OF DOCUMENTS AND SAMPLES

.1 Maintain at the site for Owner one record of:
  .1 Contract Drawings.
  .2 Specifications.
  .3 Addenda.
  .4 Site Instructions
  .5 Change Orders and other modifications to the Contract.
  .6 Reviewed shop drawings, product data, and samples.
  .7 Field test records.
  .8 Inspection certificates.
  .9 Manufacturer's certificates.
.2 Store Record Documents and Samples in Field Office apart from documents used for construction. Provide files, racks, and secure storage.
.3 Label and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
.4 Maintain Record Documents in a clean, dry and legible condition. Do not use Record Documents for construction purposes.
.5 Keep Record Documents and samples available for inspection by Consultant.

8.0 RECORDING AS-BUILT CONDITIONS

.1 After award of Contract the Consultant will provide a set of drawings for the purpose of maintaining record drawings. Accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by the Consultant.
.2 Record information concurrently with construction progress. Do not conceal work until required information is recorded.
.3 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
  .1 Measure depths of elements of foundation in relation to finish first floor datum.
  .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
  .4 Field changes of dimension and detail.
  .5 Changes made by change orders.

.6 Details not on original Contract Drawings.
.7 References to related shop drawings and modifications.

.4 Record the following:
.1 Manufacturer, trade name, and catalog number of each project actually installed, particularly optional items and substitute items.
.2 Changes made by Addenda and Change Orders.

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

9.0 EQUIPMENT AND SYSTEMS

.1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
.2 Panelboard Circuit Directories: provide electrical service characteristics, controls, and communications.
.3 Include installed colour coded wiring diagrams.
.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
.6 Provide servicing and lubrication schedule, and list of lubricants required.
.7 Include manufacturer's printed operation and maintenance instructions.
.8 Include sequence of operation by controls manufacturer.
.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
.10 Provide installed control diagrams by controls manufacturer.
.11 Provide Contractor's coordination drawings, with installed colour coded piping diagrams.
.12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
.13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
.14 Include test and balancing reports as specified in Section 01400.
.15 Additional Requirements: As specified in individual specification sections.

10.0 MATERIALS AND FINISHES

.1 Building Products, Applied Materials, and Finishes: include product data, with catalog number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.
.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommend schedule for cleaning and maintenance.
.4 Additional Requirements: as specified in individual specifications sections.

11.0 WARRANTIES AND BONDS

.1 Separate each warranty or bond with index tab sheets keyed to the List of Contents listing.
.2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
.3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work.
.4 Except for items put into use with 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 submittal.

END OF SECTION

1 General

1.1 RELATED WORK

.1 Section 04100 Mortar and Grout for Masonry
.2 Section 04220 Concrete Unit Masonry
.3 Section 05500 Metal Fabrications
.4 Section 07900 Sealants
.5 Section 08100 Steel Door Frames and Screens - supply of frames for building-in.
.6 Divisions 15 and 16 - Mechanical and Electrical items to be built into masonry.

1.2 REFERENCE STANDARD

.1 Do masonry work in accordance with CSA A371-94 and CSA S304.1-94, latest version, except where specified otherwise.

1.3 SOURCE QUALITY CONTROL

.1 Submit laboratory test reports certifying compliance of masonry units with specification requirements.
.2 For clay units, in addition to requirements set out in referenced CSA and ASTM Standards include data indicating initial rate of absorption for units proposed for use.
.3 Field control testing is required for all loadbearing masonry and for all reinforced masonry. At least 6 mortar cubes are to be tested for each 500 m² of wall, or portion thereof. At least 2 cylinder tests shall be made for each 20 cubic metres of grout or less. Test methods and results shall conform to CSA A179-94.

1.4 SAMPLES

.1 Submit information sheets for:
  .1 Each type of masonry unit specified.
  .2 Each type of masonry accessory specified.
  .3 Each type of masonry reinforcement and tie proposed for use.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver materials to job site in dry condition.
.2 Keep materials dry until use, except where wetting of bricks is specified.
.3 Store under waterproof cover on pallets or plank platforms held off ground by means of plank or timber skids.

1.6 COLD WEATHER REQUIREMENTS

.1 In accordance with CSA-A371 with following requirements:
  .1 Maintain temperature of mortar between 5°C and 50°C until used.

1.7 HOT WEATHER REQUIREMENTS

.1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.

1.8 PROTECTION

.1 Keep masonry dry using waterproof, non-staining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain, until masonry work is completed and protected by flashings or other permanent construction.
.2 Protect masonry and other work from marking and other damage. Protect completed work from mortar droppings. Use non-staining coverings.
.3 Provide temporary bracing of masonry work during and after erection until permanent lateral support is in place.

1.9 WARRANTY

.1 Contractor shall warranty all work of Division 4 for a period of 2 year against spalling, failure of seal, efflorescence, defective material and faulty workmanship.

2 Products

2.1 MATERIALS

.1 Masonry materials are specified in related Sections indicated in 1.1.

3 Execution

3.1 WORKMANSHIP

.1 Build masonry plumb, level, and true to line, with vertical joints in alignment.
.2 Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.

3.2 TOLERANCES

.1 Conform to CSA A371.

3.3 LAYING

.1 Keep exposed faces free from stains chips and cracks.
.2 Remove chipped, cracked, and otherwise damaged units in exposed masonry and replace with undamaged units.
.3 Buttering corners of units, throwing mortar droppings into joints, deep or excessive furrowing of bed joints, toothing, and step back masonry will not be permitted. Do not shift or tap units after mortar has taken initial set. Where adjustments must be made after mortar has started to set, remove mortar and replace with fresh supply.
.4 Brick with header displaying a different colour than the face of the brick shall not be used in corner construction.
.5 Mortar joints in composite walls need to line up so that wythes can be tied together at 400mm on centre vertically, that all collar joints be filled solidly with mortar or grout, and that the walls be built from units that have been well cured beforehand.

3.4 JOINTING

.1 Allow joints to set just enough to remove excess water (thumb print hard)
.2 Tooling:
  .1 Exterior architectural concrete block veneer: Use jointer to provide smooth, compressed, uniformly square, raked recessed joints where exposed.
  .2 Strike flush all joints concealed in walls and joints in walls to receive plaster, tile, insulation, or other applied material.
  .3 Where paint or similar thin finish coating is specified, tool to provide uniformly concave joint.
.3 Provide horizontal joints under shelf angles, etc. according to CSA-S304.1-94, Clause 6.4.1.3.

3.5 CUTTING

.1 Cut out neatly for electrical switches, outlet boxes, and other recessed or built-in objects.
.2 Make cuts straight, clean, and free from uneven edges.

3.6 BUILDING-IN

.1 Build in items required to be built into masonry.
.2 Prevent displacement of built-in items during construction. Check plumb, location and alignment frequently, as work progresses.
.3 Brace door jambs to maintain plumb. Fill spaces between interior jambs and masonry with mortar.

3.7 WETTING OF BRICKS

.1 Except in cold weather, wet clay bricks having an initial rate of absorption exceeding 1g/min/1000mm^2: wet to uniform degree of saturation, 3 to 24 hours before laying, and do not lay until surface dry.
.2 Wet tops of walls built of bricks qualifying for wetting, when recommencing work on such walls.

3.8 SUPPORT OF LOADS

.1 Use concrete with a minimum compressive strength of 20 MPa as specified in Section 03300 - Cast-in-Place Concrete, where concrete fill is used.
.2 Use grout to CSA A179-94 where grout is used in lieu of solid units.
.3 Install building paper below voids to be filled with concrete or grout; keep paper 25 mm back from faces of units

3.9 PROVISION FOR MOVEMENT

.1 Leave 3/4" (20 mm) space between top of non-load bearing walls and partitions and structural elements. Do not use wedges.

3.10 LOOSE STEEL LINTELS

.1 Install loose steel lintels. Centre over opening width.
.2 Provide 150mm long bearing each end of lintel unless indicated otherwise.

3.11 CONTROL JOINTS

.1 Provide continuous control joints.
.2 Provide control joints in masonry walls, veneers and partitions. See BIA Technical Note 18A and NCMA Tek Notes 3 and 53 for guidelines in locating joints at openings, etc. Spacing of vertical control joints should normally not exceed approximately 8 m when the walls are supported on foundation walls and approximately 4 m otherwise to allow for some differential movement of supports. Coordinate with joints in shelf angle supports. Coordinate joints in bearing walls and shear walls with structural engineer and do not locate close to beam/joist bearings.
.3 Allow for settlement of slab-on-grade. See geotechnical report. Provide vertical control joints in masonry partitions to allow for uneven settlement. Allow for control joint to close up as floor settles (do not fill with rigid material). Do not rigidly connect partitions to structure or other elements of the building which will not settle.

3.12 TESTING

.1 Inspection and testing will be carried out by Testing Laboratory designated by Owner and paid out of testing and inspection cash allowance specified in Section 01021 - Cash Allowance.
.2 Provide samples of mortar, grout and concrete masonry units for testing in accordance with quantities specified in CSA 5304.1-94.
.3 Coordinate sampling and testing procedures with inspection and testing agency.

3.13 PROVISIONS FOR OTHER TRADES

.1 Provide openings in masonry walls where required or indicated.
.2 Where masonry encloses conduit or piping, bring to proper level indicated and as directed. Do not cover any pipe or conduit chases or enclosures until advised that work has been inspected, tested and approved

END OF SECTION

1 General

1.1 REFERENCE STANDARD

.1 Do masonry mortar and grout work in accordance with CSA A179 latest version except where specified otherwise.

2 Products

2.1 MATERIALS

.1 Mortar and grout conforming to CSA 179-M1976.
.2 Aggregate conforming to CSA A82/56-M1976, except that the maximum allowable percentage passing 600 um (No. 30) sieve shall be 80% and maximum passing 300 um (No. 50) sieve shall be 50%.
.3 Cement to be normal portland conforming to CAN/CSA - A5/A8/A362-93.
.4 Hydrated Lime to conform to ASTM C207; Type N.
.5 Proprietary mortar mixes will be permitted in lieu of 3 and 4 above from St. Lawrence Cement Company, Canada Cement, St. Mary's Cement or Lake Ontario Portland Cement Company; conforming to mix requirements specified.
.6 Colours where specified shall be dry, powderless inorganic pigments.
.7 Dirt resistant additives where specified shall be: aluminum tristearate, calcium stearate or ammonium stearate.
.8 Water: potable.

2.2 MATERIAL SOURCE

.1 Use same brands of materials and source of aggregate for entire project.

2.3 MORTAR TYPES

.1 Mortar for bedding steel bearing plates, lintels, for laying bearing courses under concentrated loads and for laying masonry below grade shall be type "S" cement mortar.
.2 Mortar for load bearing masonry units shall be type "S" cement mortar.
.3 Except as provided above, for laying of brick or stone veneer facing only of cavity walls whether back-up is load bearing or otherwise, and for all non-bearing interior concrete block masonry, use Type "N" masonry mortar, having a minimum compressive strength of 5.0 MPa, or proprietary type "N" masonry mortar as specified, mixed in accordance with manufacturers instructions.

2.4 MORTAR COLOUR

.1 Colour of mortar shall be as selected by Consultant.
.2 Use colouring admixture not exceeding 10% of cement content by mass, or integrally coloured masonry cement.

2.5 GROUT

.1 Grout where indicated to CSA A179 Table 3.

3.0 Execution

3.1 MIXING

.1 Prepare and mix mortar materials under strict supervision, and in small batches for immediate use only.
.2 Use and mix proprietary mortar in strict accordance with manufacturers instructions.
.3 Mix grout to semi-fluid consistency.
.4 Incorporate colour and admixtures into mixes in accordance with manufacturer's instructions.
.5 Use clean mixer for coloured mortar.
.6 Prehydrate pointing mortar by mixing ingredients dry, then mix again adding just enough water to produce damp unworkable mix that will retain its form when pressed into ball. Allow to stand for not less than 1 hour nor more than 2 hours then remix with sufficient water to produce mortar of proper consistency for pointing.
.7 Do not use retempered mortars.

END OF SE**CTION**

1 General

1.1 RELATED WORK

.1 Section 08100 Steel Doors, Frames and Screens

1.2 SUBMITTALS

.1 Submit cut sheet of architectural block units in accordance with Section 04050.

1.3 WARRANTY

.1 Contractor shall warranty all work of Division 4 for a period of 2 years against spalling, failure of seal, development of efflorescence, defective material and faulty workmanship.

2 Products

2.1 MATERIALS

.1 Mortar: type "S" cement mortar to CSA 179.
.2 Horizontal wire reinforcement for concrete unit masonry: ladder type horizontal joint reinforcement, hot dipped galvanized in conformance with CSA G30-3.
.3 Concrete Block: modular, conforming to CAN3-A165-M Series, M85, Concrete Masonry Units and as follows:
  .1 "lightweight" - H/20/D/M for all locations, unless noted otherwise.
.4 Provide special shapes and sizes as shown or specified such as halves, jambs, lintels, solids, corners, bullnoses, double bullnoses, semi-solids, etc.
.5 Where concrete block walls are required to act as fire separations or barriers, construction shall conform to Ontario Building Code with respect to equivalent thickness and type of concrete.
.6 Exposed block shall be uniform in colour, shade and texture, and made by one manufacturer.
.7 Packing Insulation: Loose, glass fibre insulation 16kg/m^3 density, or mineral wool. In fire rated locations use rated fire stop insulation material, firebarrier firestopping c/w compatible firestop caulking by Double A/D Distributors Ltd., (613) 841-7755.
.8 New masonry unit sizes to match the existing walls in which the new work is being done.

3 Execution

3.1 LAYING CONCRETE MASONRY UNITS

.1 Do masonry work in accordance with CSA A371-94 and CSA S304.1-94, latest version, except where specified otherwise.
.2 Bond: running or as otherwise indicated.
.3 Coursing height: 200 mm for one block and one joint.

.4 Laying
  .1 Build masonry plumb, level, and true to line, with vertical joints in alignment.
  .2 Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.
  .3 Keep exposed faces free from stains chips and cracks.
  .4 Remove chipped, cracked, and otherwise damaged units in exposed masonry and replace with undamaged units.
  .5 Buttering corners of units, throwing mortar droppings into joints, deep or excessive furrowing of bed joints, toothing, and step back masonry will not be permitted. Do not shift or tap units after mortar has taken initial set. Where adjustments must be made after mortar has started to set, remove mortar and replace with fresh supply.
  .6 Install continuous horizontal wire reinforcement in each wythe of concrete block, 400 mm maximum vertically on centre. Lap each splice 150 mm.
  .7 Jointing: Allow joints to set just enough to remove excess water (thumb print hard), then tool with concave jointer to provide smooth, compressed, uniformly concave joints for exposed masonry to receive paint or other finish coating is specified. Strike flush where not exposed.
  .8 Leave 3/4" (20 mm) space between top of non-load bearing walls and partitions and structural elements. Do not use wedges.
.5 Building-in
  .1 Build-in items required to be built into masonry. Coordinate with all other trades for built-in items.
  .2 Prevent displacement of built-in items during construction. Check plumb, location and alignment frequently, as work progresses.
  .3 Brace door jambs to maintain plumb. Fill spaces between interior jambs and masonry with mortar.
  .4 Install loose steel lintels. Centre over opening width. Provide 150mm long bearing each end of lintel unless indicated otherwise.
.6 Cut out neatly for electrical switches, outlet boxes, and other recessed or built-in objects. Make cuts straight, clean, and free from uneven edges.
.7 A high quality standard of finish is required on exposed blockwork to be painted. Many chips and defects in the block do not become readily apparent until the blockwork has been painted. If the blockwork is not acceptable to the Consultant after being painted, the Consultant will prescribe remedial action which will include one or more of the following:
  .1 Removal of the defective block.
  .2 Grinding and retooling of mortar joints.
  .3 Applying special texture coatings to hide defects.
  .4 Applying a trowelled acrylic stucco finish to the wall.
  .5 Any other repair and finishing as the Consultant deems necessary.
.8 Complete any remedial work prescribed by the Consultant.

3.2 CLEANING

.1 Allow mortar droppings on unglazed concrete masonry to partially dry then remove by means of trowel, followed by rubbing lightly with small piece of block and finally by brushing.

END OF SECTION

1 General

1.1 DESCRIPTION:

.1 Work Included: Supply and install all miscellaneous metal work indicated on drawings, and not included in the work of other Sections, unless specifically designated as supply only. Where such items are required to be built into other work, supply items to respective section with all anchors and accessories required for building in. Metal fabrication work required includes, but is not restricted to the following:
- .1 Lintels
- .2 Supports for new millwork
- .3 Supports for benches
- .4 Miscellaneous metal items shown on the drawings

.2 Related Work (attached following Section 05500):
- .1 Structural Details

1.2 REFERENCE STANDARDS

.1 Do welding work in accordance with CSA W59-1982 unless specified otherwise.

1.3 QUALIFICATION OF SUB-CONTRACTOR

.1 Work of this section shall be executed by a firm thoroughly conversant with laws, by-laws and regulations which govern and which is capable of workmanship of best grade of modern shop and field practice known to recognized manufacturers specialized in this work. Use workers skilled in the work of this Section.

1.4 SHOP DRAWINGS

.1 Visit site to confirm appropriate dimensions and site conditions prior to submission of shop drawings.
.2 Submit digital shop drawings to Consultant for review.
.3 Indicate materials, core thicknesses, finished, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.
.4 Shop drawings shall bear the seal and signature of the structural engineer, licensed in the Province of Ontario, responsible for the design.

2 Products

2.1 MATERIALS

.1 Steel sections and plates: to ASTM A36-66 and CAN3-G40.21-M81.
.2 Steel pipe: to ASTM A53-82 standard weight
.3 Welding materials: to CSA W59-1982.
.4 Bolts and anchor bolts: to ASTM A307-82a.
.5 Galvanizing: hot dipped galvanizing with zinc coating to CSA G164-M1981.
.6 Shop coat primer: to CGSB 1-GP-40M.
.7 Zinc primer: zinc rich, ready mix to CGSB 1- GP-181M+Amdt-Mar-78.
.8 Grout: non-shrink, non-metallic, flowable, 24h, MPa 15, pull-out strength 7.9 MPa.
.9 Metal Filler: polyester based, one of the following or approved equal:
  .1 M1255 Red Flexibond by J.A. Tumbler Industries Ltd.
  .2 Red Lighting by Marson Division, Swingline of Canada Ltd.
  .3 M45 by Dura Chemicals Ltd., Hamilton.
  .4 Easy File by Atwood Ltd., Oakville.

2.2 FABRICATION

.1 Fit and assemble work in shop where possible. Complete fabrication according to details and approved shop drawings. Where complete shop fabrication is not possible, make trial assembly in shop prior to transport to site.
.2 Do all welding in accordance with requirements of CSA W59 and CSA W55. File or grind welds smooth and flush where exposed to view and where specifically indicated on the drawings.
.3 Fit joints and intersecting members accurately. Make work in true planes with adequate fastenings. Connections between vertical and horizontal pipe members shall utilize "saddle" joints, connection, continuous welder, ground and sanded smooth.
.4 Supply all fastenings, anchors accessories required for fabrication and erection of work of this Section.
.5 Hot dip galvanized components where indicated on drawings. Make thread dimensions such that nuts and bolts will fit without rethreading or chasing threads.
.6 Make exposed metal fastenings and accessories of same material, texture, colour and finish as base metal on which they occur unless otherwise shown or specified. Keep exposed fastenings to an absolute minimum evenly spaced and neatly laid out. Make fastenings of permanent type unless otherwise indicated.

2.3 SHOP PRIMING

.1 Thoroughly clean all ferrous metals in accordance with CGSB 31-GP-401.
.2 Apply one shop coat of primer to metal items, with exception of stainless steel, aluminum, galvanized or concrete encased items. Work well into a crevices and interstices.
.3 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7 degrees C.
.4 Clean surfaces to be field welded; do not paint.

3 Execution

3.1 ERECTION

.1 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.
.2 Provide suitable means of anchorage acceptable to Consultant such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.
.3 Make field connections with high tensile bolts to CSA S16-1969 and CSA S1653-1981, or weld.
.4 Hand items over for required to be installed by other trades together with setting templates. If necessary to insure quality product, supervise installation.
.5 Touch-up rivets, field welds, bolts and burnt or scratched surfaces after completion of erection with primer.
.6 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.
.7 Insulate metals where necessary to prevent corrosion due to contact between dissimilar metals and between metals and masonry or concrete. Use bituminous paint, butyl tape, building paper or other approved means.

END OF SECTION

GENERAL NOTES:

1. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT. BREAKDOWN OF THE WORK BY TRADE IS THE RESPONSIBILITY OF THE CONTRACTOR. EXISTING CONDITIONS ARE ASSUMED. REPORT ANY INCONSISTENCIES TO THE CONSULTANT BEFORE PROCEEDING WITH THE WORK.
2. DO NOT SCALE THESE DRAWINGS.
3. CODES AND STANDARDS:
   - 3.1. COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE ONTARIO BUILDING CODE (OBC) IN FORCE AND ALL REGULATIONS AND STANDARDS THAT ARE IN EFFECT AT THE TIME OF THE CONSTRUCTION.
4. EXISTING STRUCTURE:
   - 4.1. EXISTING CONDITIONS ARE ASSUMED. REPORT ANY VARIATIONS TO THE CONSULTANT IMMEDIATELY BEFORE PROCEEDING WITH THE WORK.
   - 4.2. PROTECT EXISTING STRUCTURE EXPOSED TO TEMPORARY CONSTRUCTION LOADING AND ACTIVITIES. WORK REQUIRED TO CONNECT OR REWORK EXISTING STRUCTURE FOR THE NEW WORK IS WITHIN THIS CONTRACT.
   - 4.3. PROVIDE TEMPORARY SHORING AND BRACING REQUIRED WHERE NEEDED.
   - 4.4. MAKE GOOD ONCE STRUCTURAL WORK IS DONE AND REVIEWED.
5. CONCRETE:
   - 5.1. CONFORM TO CSA A23.1 “CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION”.
   - 5.2. CONCRETE MIX DESIGN - INTERIOR APPLICATIONS:
     - 5.2.1. CLASS OF EXPOSURE: N
     - 5.2.2. CEMENT: TYPE GU
     - 5.2.3. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS: 25 MPa.
     - 5.2.4. MAXIMUM WATER/CEMENTING MATERIAL RATIO: 0.45
     - 5.2.5. NOMINAL SIZE OF COARSE AGGREGATE: 20mm (3/4”).
     - 5.2.6. SLUMP AT TIME AND POINT OF DISCHARGE: 50mm (2”) TO 110mm (4 1/2”).
   - 5.3. REFERENCES:
     - 5.3.1. REINFORCEMENT: CAN/CSA G30.18 GRADE 400R OR 400W
     - 5.3.2. WELDED WIRE FABRIC: ASTM A185(FLAT SHEETS ONLY)
     - 5.3.3. BAR SUPPORTS, AND TIES: RISC MANUAL OF STANDARD PRACTICE
   - 5.4. WHERE CONCRETE IS CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, THE MINIMUM CONCRETE COVER TO REINFORCING BARS CLOSEST TO THE CONCRETE SURFACE SHALL BE 75mm (3”).
   - 5.5. FOR CLASS N CONCRETE, THE MINIMUM CONCRETE COVER TO REINFORCING BARS CLOSEST TO THE CONCRETE SURFACE SHALL BE 30mm (1 1/4”) FOR BEAMS AND COLUMNS, AND 20mm (3/4”) FOR SLABS AND WALLS. FOR CLASS F-1 AND F-2 CONCRETE, THE MINIMUM COVER SHALL BE 40mm (1 1/2”).
   - 5.6. INCREASE COVER WHERE REQUIRED TO MAINTAIN MINIMUM RATIO OF COVER TO NOMINAL BAR DIAMETER OF 1 FOR CLASS N, 1.5 FOR CLASSES FA AND F2, AND 2 FOR CLASSES C1 AND C3.
   - 5.7. HEAT CONCRETE AND DELIVER AT A TEMPERATURE BETWEEN +15°C AND +27°C, WHENEVER OUTDOOR TEMPERATURE IS LESS THAN +5°C.
   - 5.8. CONVEY CONCRETE FROM TRUCK TO FINAL LOCATION BY METHODS WHICH WILL PREVENT SEPARATION OR LOSS OF MATERIAL. MAXIMUM FREE FALL 1.5m (5'-0"). CONSOLIDATE CONCRETE WITH ELECTRICAL VIBRATORS.
6. STRUCTURAL MASONRY:
   - 6.1. CONFORM TO CSA-A371 “MASONRY CONSTRUCTION FOR BUILDINGS”.
   - 6.2. MATERIALS:
     - 6.2.1. HOLLOW BLOCK: CSA A165.1-H/15/X/X
     - 6.2.2. SOLID BLOCK: CSA A165.1-S/15/X/X
     - 6.2.3. ABOVE-GRADE MORTAR: CSA A179M - TYPE N
     - 6.2.4. GROUT FOR BLOCK CORES: CSA A179M - COARSE GROUT 1:3:2 - CEMENT:SAND:PEA STONE BY VOLUME WITH 200mm (8”) SLUMP
   - 6.3. LAY UNITS IN RUNNING BOND. ALL FACE SHELLS SHALL BE FULLY BEDDED. GROUT USING LOW LIFT GROUTING METHODS AND MAXIMUM 1500mm (5'-0") LIFTS. DO NOT USE MORTAR INSTEAD OF GROUT.
   - 6.4. PROVIDE CONTROL JOINTS AT 6m (20'-0") CENTRES MAXIMUM.
   - 6.5. UNLESS OTHERWISE NOTED ON THE DRAWINGS, PROVIDE 3.66mm (9 GAUGE) GALVANIZED STEEL LADDER-TYPE JOINT REINFORCING EVERY SECOND BLOCK COURSE. PROVIDE JOINT REINFORCING IN THE FIRST TWO COURSES ABOVE AND BELOW WALL OPENINGS, AND EXTEND 600mm (2'-0”) BEYOND EACH SIDE OF OPENING. USE HOT-DIPPED GALVANIZED MATERIAL FOR METAL TIES, GALVANIZED AFTER FABRICATION. USE PREFABRICATED CORNERS AND SPLICE LENGTHS OF 300mm (12”) MINIMUM.
   - 6.6. PROVIDE STANDARD LINTELS OVER ALL OPENINGS IN MASONRY WALLS AND PARTITIONS AS SHOWN ON TYPICAL DETAILS. CHECK ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENINGS REQUIRING STANDARD LINTELS WHICH ARE NOT NECESSARILY SHOWN ON THE STRUCTURAL DRAWINGS.

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TLDSB - WASHROOM RENOVATIONS

GENERAL NOTES

LICENSED PROFESSIONAL ENGINEER
2018-11-22
J.V.L.FORD
100042014
PROVINCE OF ONTARIO

Date: 2018-05-18	Scale: N.T.S.
Drawn by: I.C.	Checked by: J.F.
Project No.	19023
Drawing No.	SK-01

PLOTTED BY: ICANETE - PLOTTED DATE: 22/11/18 - PLOTTED SCALE: 1:1 READ DRAWING ACCORDINGLY.
FILE: O:\PROJECTS\19023 - TLDSB - 12 WASHROOM UPGRADES\DRAWINGS\STRUCTURAL_WORKING DRAWINGS\19023 - TLDSB - 12 WASHROOM UPGRADES - SKS.DWG

GENERAL NOTES (CONT'D:

7. STRUCTURAL STEEL:

7.1. CONFORM TO CAN/CSA S16 “LIMIT STATES DESIGN OF STEEL STRUCTURES”.

7.2. PROTECT COMBUSTIBLE MATERIALS AND FINISHES DURING WELDING OPERATIONS.

7.3. MATERIALS:

7.3.1. WIDE FLANGE SECTIONS: CAN/CSA G40.21, GRADE 350W

7.3.2. ANGLES: CAN/CSA G40.21, GRADE 350W

7.3.3. PLATES: CAN/CSA G40.21, GRADE 300W

7.3.4. STRUCTURAL STEEL BOLTS: ASTM A325M/A325 UNLESS NOTED

7.3.5. HIGH-STRENGTH BOLTS: ASTM A325M

7.4. REFERENCES:

7.4.1. FABRICATION: CAN/CSA S16

7.4.2. WELDING: CSA W59

7.4.3. PRIMER PAINT: CISC/CPMA 2-75

7.5. ALL STRUCTURAL STEEL CONNECTIONS MUST BE DESIGNED BY A PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR TO CONFORM TO CAN/CSA S16-01. USE HEADER ANGLES AND HIGH-STRENGTH BOLTS. DESIGN BEAM CONNECTIONS FOR AN END REACTION DUE TO THE UNIFORMLY DISTRIBUTED LOAD CAPACITY OF THE MEMBER UNLESS A GREATER REACTION IS NOTED ON THE DRAWINGS.

7.6. DO NOT SPLICE SECTIONS WITHOUT THE PRIOR ACCEPTANCE OF THE CONSULTANT AND THE SUBMISSION OF PERTINENT SHOP DRAWINGS. ACCEPTED SPLICES WILL BE REQUIRED TO DEVELOP THE SECTION. EACH SPLICE SHALL BE GIVEN A NON-DESTRUCTIVE TEST BY AN INDEPENDENT INSPECTION COMPANY ACCEPTABLE TO THE CONSULTANT. TESTING SHALL BE AT THE CONTRACTOR'S EXPENSE. EVALUATE RESULTS IN ACCORDANCE WITH CSA W59 AND REPORT TO THE CONSULTANT.

7.7. APPLY PRIMER PAINT TO ALL STEELWORK, EXCEPT WHERE ZINC-RICH PAINT IS CALLED FOR ON THE DRAWINGS. TOUCH-UP PAINT AFTER ERECTION. SURFACES RECEIVING ZINC-RICH PAINT SHALL FIRST RECEIVE COMMERCIAL BLAST CLEANING.

7.8. WELD OR BOLT TOGETHER MULTIPLE ANGLE LINTELS. PROVIDE A MINIMUM OF 150mm (6") BEARING.

7.9. PROVIDE ALL ERECTION BRACING REQUIRED TO KEEP THE STRUCTURE STABLE AND IN ALIGNMENT DURING CONSTRUCTION.

8. STRUCTURAL WOOD

8.1. ALL MATERIALS TO CONFORM TO CSA O86.1.

8.2. ALL LUMBER TO BE SPF NO. 2 OR BETTER, UNLESS OTHERWISE NOTED, GRADE MARKED TO CONFORM TO CSA O141 AND TO BE KILN DRIED. MOISTURE CONTENT NOT TO EXCEED 19%.

8.3. JOIST HANGERS, ANCHORS AND TIES: MANUFACTURED BY SIMPSON STRONG - TIE COMPANY OR BY SILVER TECO OR BY MGA CONNECTORS. PROVIDE JOIST HANGERS WITH CAPACITY TO SUPPORT FULL FACTORED SHEAR RESISTANCE OF SUPPORTED WOOD JOISTS. INSTALL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

8.4. USE JOISTS HANGERS WHERE JOISTS FRAME INTO SIDES OF SUPPORTS.

8.5. UNLESS NOTED OTHERWISE, NAILING FOR TIMBER FRAMING SHALL CONFORM TO PART 9 OF THE OBC.

8.6. NOTCHING AND DRILLING OF FRAMING MEMBERS: NOT PERMITTED.

9. REJECTED WORK:

9.1. 1.1. DO NOT DELIVER TO THE SITE MATERIALS, WHICH ARE KNOWN NOT TO MEET THE REQUIREMENTS OF THE SPECIFICATIONS. IF REJECTED AFTER DELIVERY, REMOVE IMMEDIATELY FROM SITE.

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TLDSB - WASHROOM RENOVATIONS

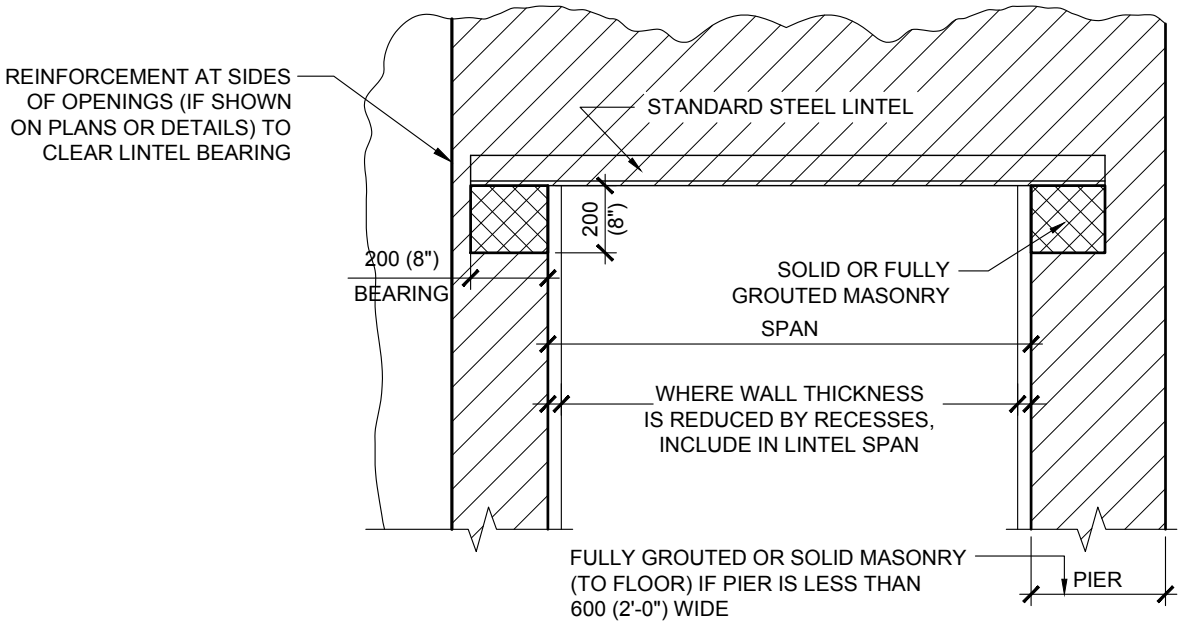
GENERAL NOTES

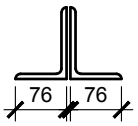
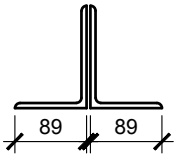
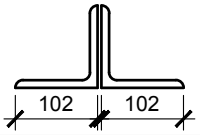
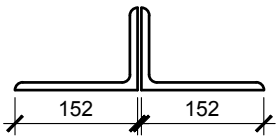
LICENSED PROFESSIONAL ENGINEER
2018-11-22
J.V.L.FORD
100042014
PROVINCE OF ONTARIO

Date: 2018-05-18	Scale: N.T.S.
Drawn by: I.C.	Checked by: J.F.
Project No.	19023
Drawing No.	SK-02

NOTES:

1. CONNECT BACK TO BACK DOUBLE ANGLES USING MIN. 16 (5/8")Ø BOLTS @ 450 (1'-6") MAX , OR BY WELDING @ TOP & BOTTOM USING 6mm (1/4") WELDS x 50 (2") LG. @ 450 (1'-6") MAX.
   LOCATE FIRST CONNECTION MAX. 75 (3") FROM END OF LINTEL.
2. PROVIDE SHORING AND BRACING AS REQUIRED.
3. GROUT MASONRY AT SUPPORTS PRIOR TO SAWCUTTING.
4. PROVIDE STEEL PACKING AS REQUIRED TO PROVIDE EVEN BEARING OF STEEL LINTELS.
5. STANDARD LINTELS ARE NOT NECESSARILY SHOWN ON STRUCTURAL DRAWINGS, REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENING LOCATIONS.
6. SEE PLANS FOR SPECIAL LINTELS.
7. STEEL LINTELS TO BE CSA G40.21, GRADE 350W
8. STRUCTURAL STEEL BOLTS TO BE ASTM A325/A325M



WALL THICKNESS	ANGLE SIZE (SPAN)	DETAIL
140 (6")	L127x76x13	
190 (8")	L152x89x13	
240 (10")	L178x102x13	
290 (12")	L203x152x19	

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TLDSB - WASHROOM RENOVATIONS

STANDARD DETAILS SD-01: TYPICAL STEEL LINTELS IN EXISTING NON-LOAD BEARING MASONRY WALLS

LICENSED PROFESSIONAL ENGINEER
2018-11-22
J.V.L.FORD
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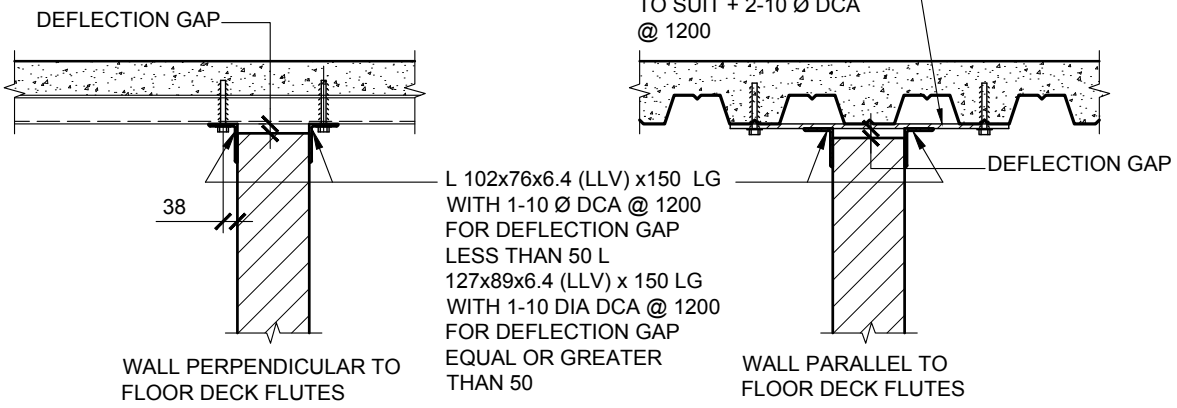
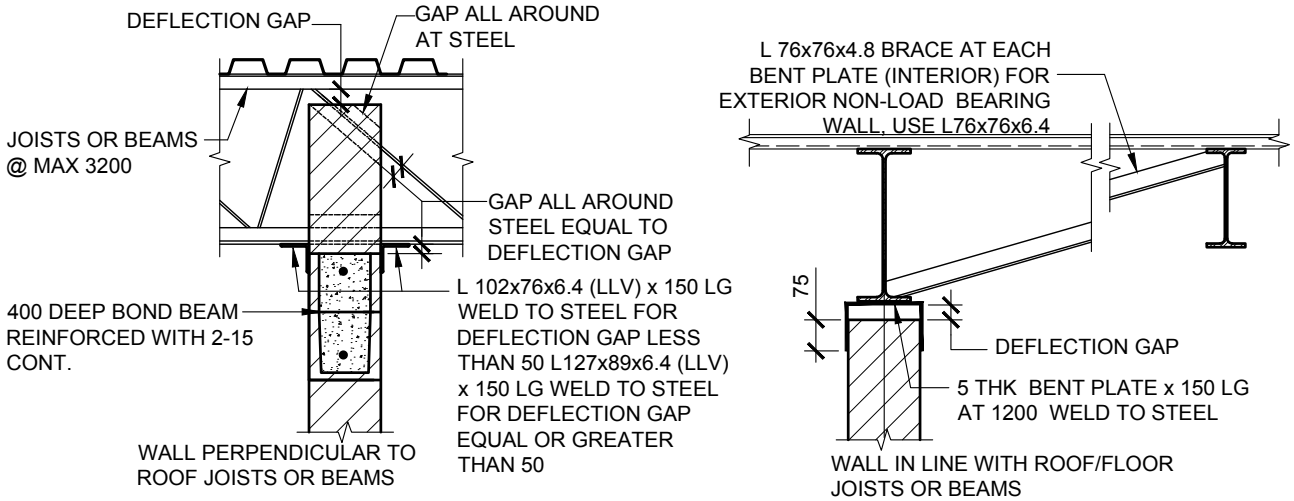
PROVINCE OF ONTARIO

Date: 2018-05-18	Scale: N.T.S.
Drawn by: I.C.	Checked by: J.F.
Project No.	19023
Drawing No.	SK-03



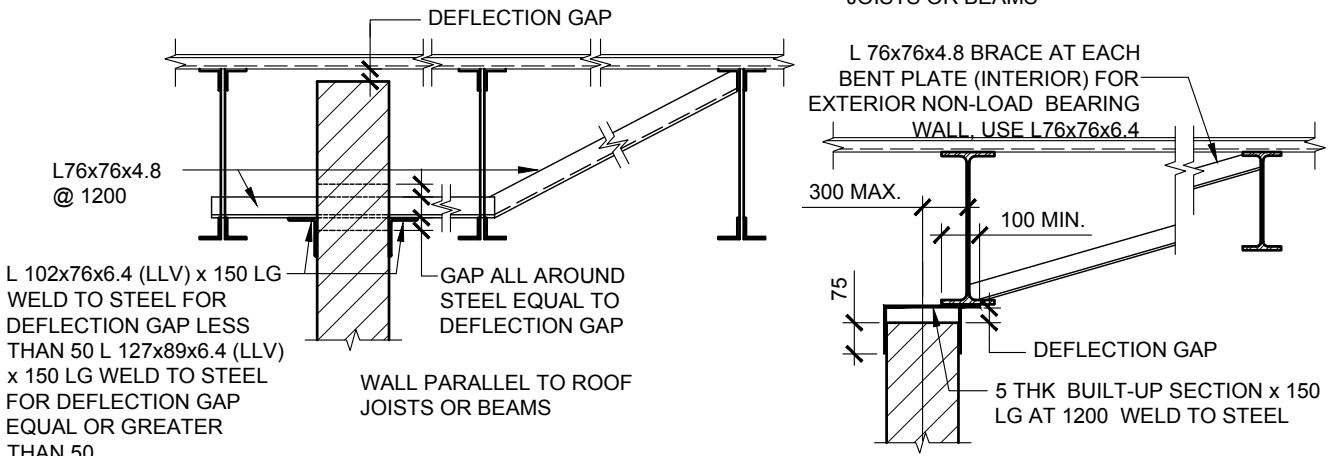
WALL PERPENDICULAR TO FLOOR DECK FLUTES

WALL PARALLEL TO FLOOR DECK FLUTES



WALL PERPENDICULAR TO ROOF JOISTS OR BEAMS

WALL IN LINE WITH ROOF/FLOOR JOISTS OR BEAMS



WALL PARALLEL TO ROOF JOISTS OR BEAMS

WALL OFFSET FROM ROOF/FLOOR JOISTS OR BEAMS

NOTES:

1. DCA TO BE HILTI KB-3 WITH 64 EMBEDMENT
2. PROVIDE 30mm DEFLECTION GAP TYPICAL U/N
3. MINIMUM WALL THICKNESS IS 140 FOR INTERIOR WALLS AND 190 FOR EXTERIOR WALLS. WALL HEIGHT SHALL NOT EXCEED 36 TIMES WALL THICKNESS FOR INTERIOR WALLS AND 20 TIMES WALL THICKNESS FOR EXTERIOR WALLS.
4. FOR EXTERIOR WALL LATERAL SUPPORT INCREASE 150 LG. ANGLE/BENT PLATE SHOWN IN THE DETAILS TO 250 LG. AND REPLACE 2-10 DIA DCA WITH 2-12 DIA DCA + INCREASE ALL BENT PLATES TO 6mm THK.
5. FOR CONCEALED LATERAL SUPPORT REFER TO ARCH SPEC AND DRAWINGS.

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TLDSB - WASHROOM RENOVATIONS

STANDARD DETAILS SD-02: TYPICAL LATERAL SUPPORT OF NON-LOAD BEARING NEW MASONRY WALLS

LICENSED PROFESSIONAL ENGINEER
2018-11-22
J.V.L.FORD
100042014
PROVINCE OF ONTARIO

Date: 2018-05-18	Scale: N.T.S.
Drawn by: I.C.	Checked by: J.F.
Project No. 19023	
Drawing No. SK-04	

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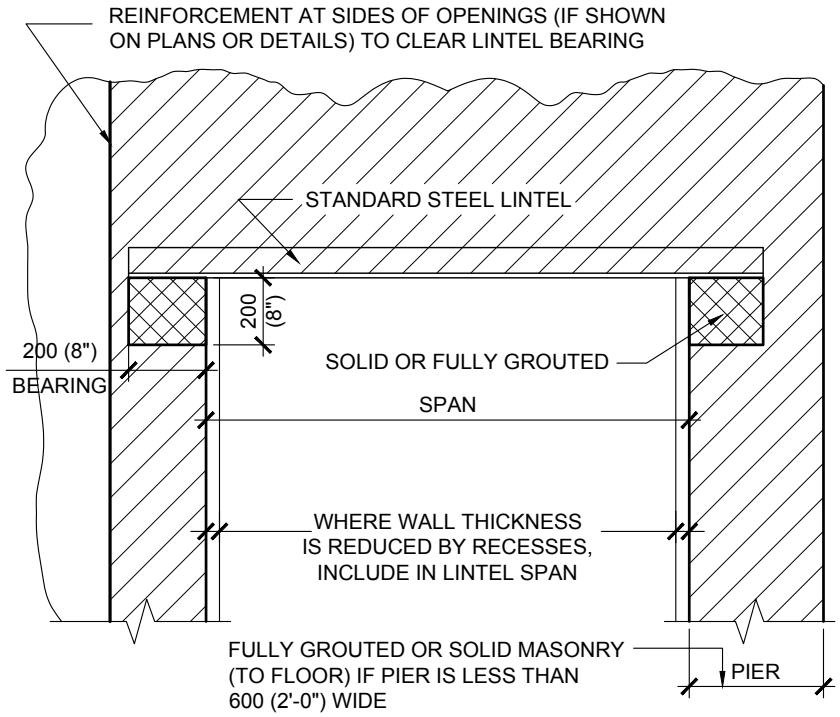

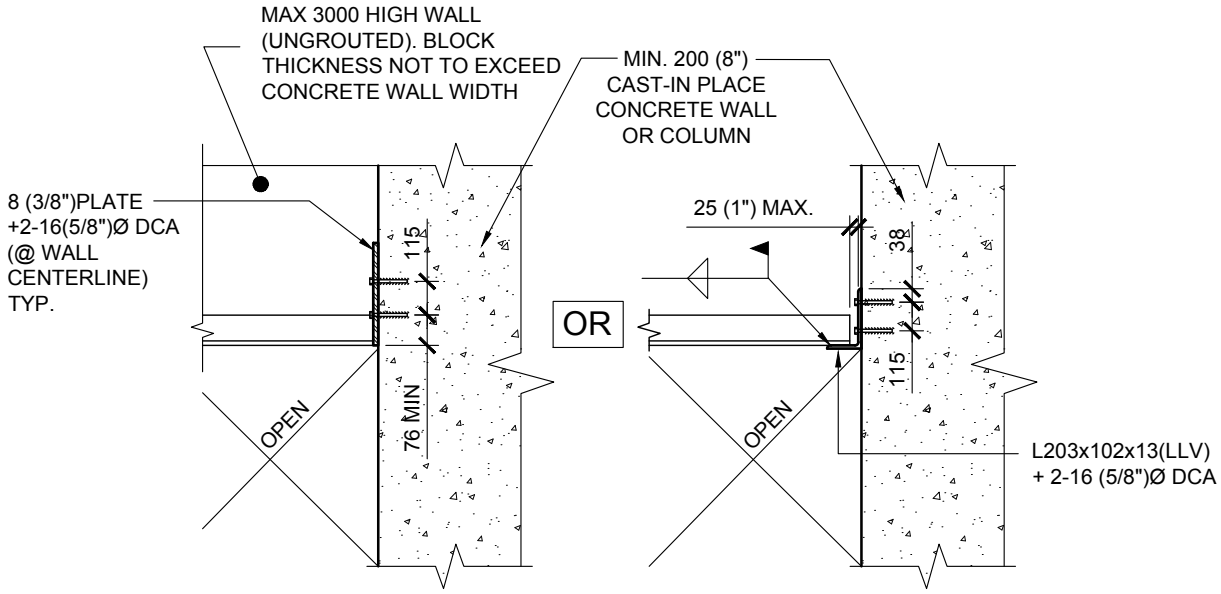

LINTEL SUPPORTED BY POURED CONCRETE WALL

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TLDSB - WASHROOM RENOVATIONS

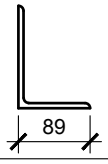
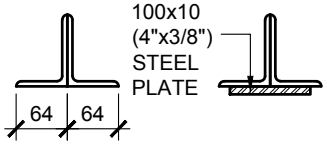
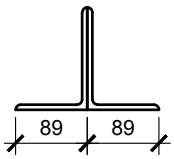
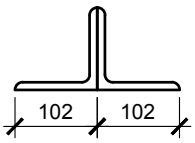
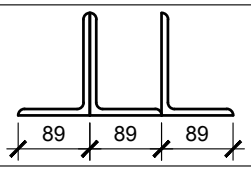
STANDARD DETAILS SD-03: TYPICAL STEEL LINTELS IN NEW NON-LOAD BEARING MASONRY WALL

LICENSED PROFESSIONAL ENGINEER
2018-11-22
J.V.L.FORD
100042014
PROVINCE OF ONTARIO

Date: 2018-05-18	Scale: N.T.S.
Drawn by: I.C.	Checked by: J.F.
Project No.	19023
Drawing No.	SK-05A

NOTES:

1. CONNECT BACK TO BACK DOUBLE ANGLES USING MIN. 16 (5/8")Ø BOLTS @ 450 (1'-6") MAX , OR BY WELDING @ TOP & BOTTOM USING 6mm (1/4") WELDS x 50 (2") LG. @ 450 (1'-6") MAX. LOCATE FIRST CONNECTION MAX. 75 (3") FROM END OF LINTEL.
2. PROVIDE STEEL PACKING AS REQUIRED TO ENSURE EVEN BEARING OF STEEL LINTELS.
3. STANDARD LINTELS ARE NOT NECESSARILY SHOWN ON STRUCTURAL DRAWINGS, REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENING LOCATIONS.
4. SEE PLANS FOR SPECIAL LINTELS.

WALL THICKNESS	SPAN	ANGLE SIZE	DETAIL
90 (4") VENEER	UP TO 1200 (4'-0")	89x89x6.4	
	1200 (4'-0") TO 1800 (6'-0")	127x89x6.4	
	1800 (6'-0") TO 2400 (8'-0")	127x89x6.4	
	2400 (8'-0") TO 3000 (10'-0")	152x89x9.5	
140 (6")	UP TO 1200 (4'-0")	2-64x64x6.4	
	1200 (4'-0") TO 1800 (6'-0")	2-89x64x6.4	
	1800 (6'-0") TO 2400 (8'-0")	2-89x64x7.9 w/ 100x10 PLATE	
	2400 (8'-0") TO 3000 (10'-0")	---	
190 (8")	UP TO 1200 (4'-0")	2-76x89x6.4	
	1200 (4'-0") TO 1800 (6'-0")	2-89x89x6.4	
	1800 (6'-0") TO 2400 (8'-0")	2-102x89x7.9	
	2400 (8'-0") TO 3000 (10'-0")	2-152x89x7.9	
240 (10")	UP TO 1200 (4'-0")	2-76x102x6.4	
	1200 (4'-0") TO 1800 (6'-0")	2-102x102x6.4	
	1800 (6'-0") TO 2400 (8'-0")	2-102x102x9.5	
	2400 (8'-0") TO 3000 (10'-0")	2-152x102x7.9	
290 (12")	UP TO 1200 (4'-0")	3-76x89x6.4	
	1200 (4'-0") TO 1800 (6'-0")	3-89x89x6.4	
	1800 (6'-0") TO 2400 (8'-0")	3-102x89x7.9	
	2400 (8'-0") TO 3000 (10'-0")	3-127x89x7.9	

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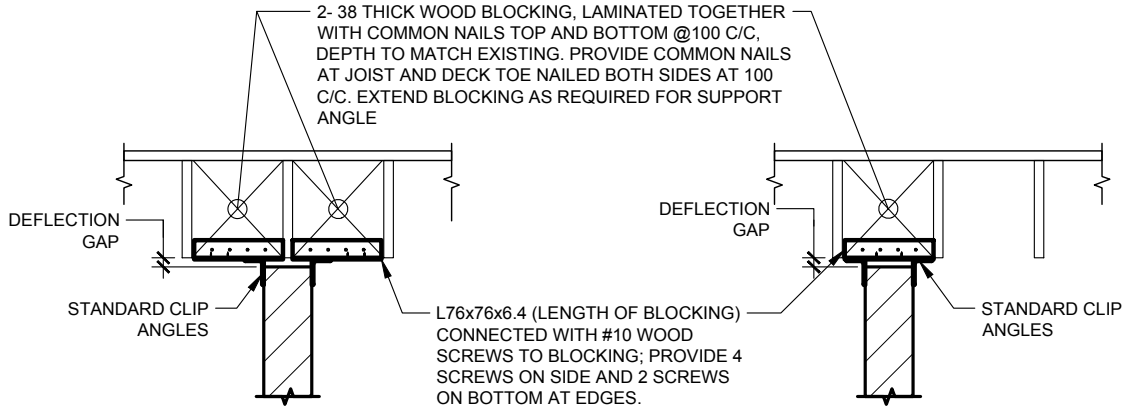
TLDSB - WASHROOM RENOVATIONS

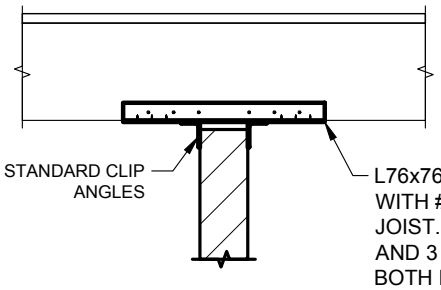
STANDARD DETAILS SD-03:
TYPICAL STEEL LINTELS
IN NEW NON-LOAD BEARING
MASONRY WALL

LICENSED PROFESSIONAL ENGINEER
2018-11-22
J.V.L.FORD
100042014
PROVINCE OF ONTARIO

Date: 2018-05-18	Scale: N.T.S.
Drawn by: I.C.	Checked by: J.F.
Project No.	**19023**
Drawing No.	**SK-05B**

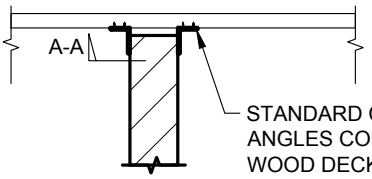


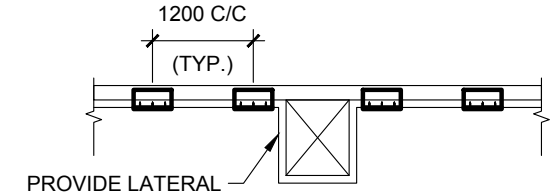
PARALLEL TO WOOD JOIST



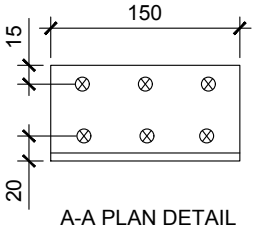
L76x76x6.4 x800 LG, CONNECTED WITH #10 WOOD SCREWS TO JOIST.PROVIDE 3 SCREWS ON SIDE AND 3 SCREWS ON BOTTOM FOR BOTH ENDS.

PERPENDICULAR TO WOOD JOIST





TIMBER FRAMING AND WOOD PLANG



A-A PLAN DETAIL

STANDARD CLIP ANGLE NOTES:

1. PROVIDE CLIP ANGLES AT 1200 C/C TYP. FOR DEFLECTION GAP LESS THAN 50 PROVIDE L102x76x6.4 (LLV) x 150 LG. FOR DEFLECTION GAP EQUAL OR GREATER THAN 50 PROVIDE L127x89x6.4 (LLV) x 150 LG. UNLESS NOTED OTHERWISE WELD CLIP TO SUPPORT ANGLE. DO NOT WELD NEAR WOOD STRUCTURE.
2. PROVIDE 300mm DEFLECTION GAP TYPICAL UNO.
3. MINIMUM WALL THICKNESS IS 140 FOR INTERIOR WALLS AND 190 FOR EXTERIOR WALLS. WALL HEIGHT SHALL NOT EXCEED 36 TIMES WALL THICKNESS FOR INTERIOR WALLS AND 20 TIMES WALL THICKNESS FOR EXTERIOR WALLS.
4. FOR EXTERIOR WALL LATERAL SUPPORT INCREASE 150 LG. ANGLE/BENT PLATE SHOWN IN THE DETAILS TO 250 LG.
5. FOR CONCEALED LATERAL SUPPORT REFER TO ARCH SPEC AND DRAWINGS.

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TLDSB - WASHROOM RENOVATIONS

STANDARD DETAILS SD-04:
TYPICAL STEEL LINTELS
IN NON-LOAD BEARING
MASONRY WALL AT WOOD STRUCTURE

LICENSED PROFESSIONAL ENGINEER
2018-11-22
J.V.L.FORD
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Date: 2018-05-18	Scale: N.T.S.
Drawn by: I.C.	Checked by: J.F.
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Drawing No. SK-06A	

PLOTTED BY: ICANETE - PLOTTED DATE: 22/11/18 - PLOTTED SCALE: 1:1 READ DRAWING ACCORDINGLY.
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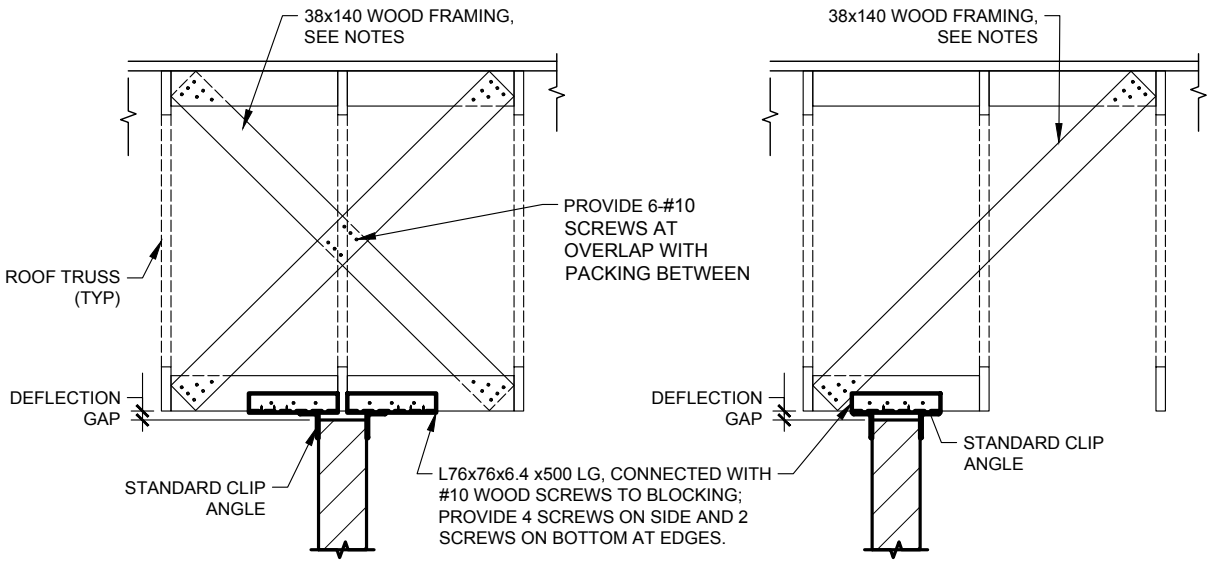
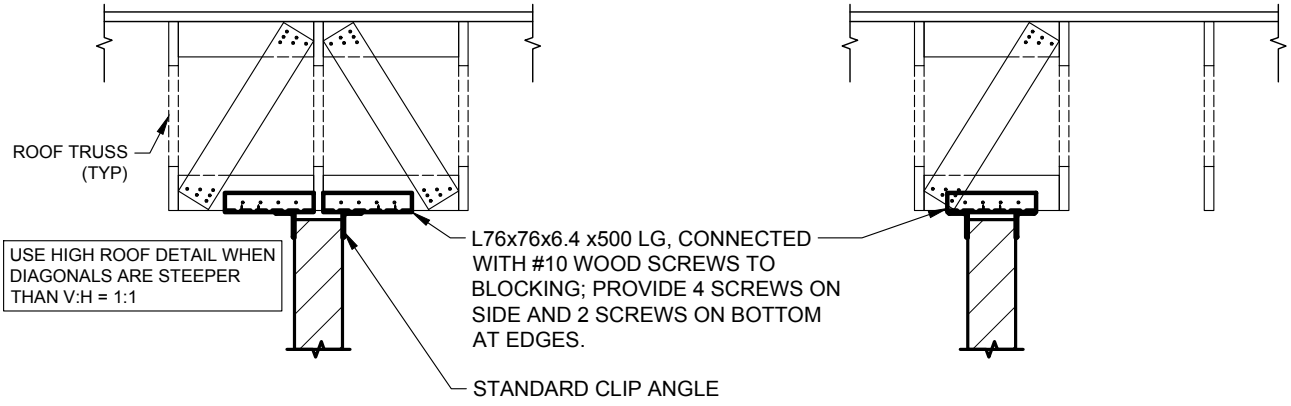


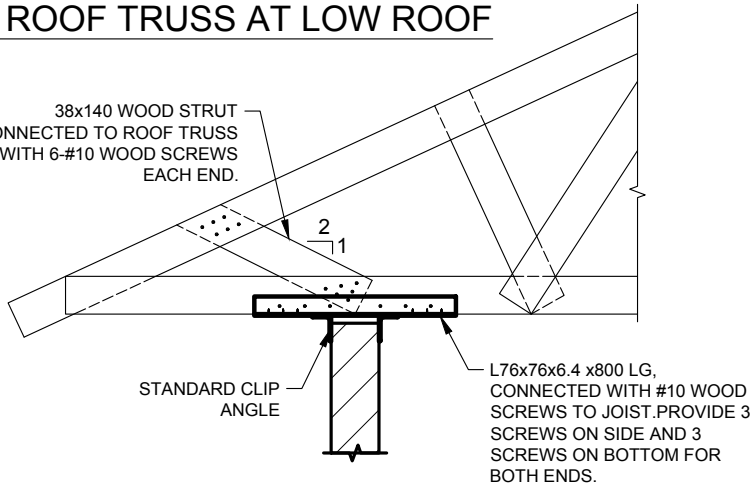
PARALLEL TO ROOF TRUSS AT HIGH ROOF



PARALLEL TO ROOF TRUSS AT LOW ROOF

TRUSS NOTES:

1. ALL WOOD FRAMING TO BE 38x140, UNLESS NOTED OTHERWISE.
2. AT ROOF DECK, PROVIDE COMMON NAILS TOE NAILED INTO DECK BOTH SIDES AT 100 C/C
3. PROVIDE JOIST HANGERS AT SIDES OF JOISTS INTO ROOF TRUSSES.
4. PROVIDE 6- #10 SCREWS AT EACH END OF DIAGONAL STRUTS. MINIMUM EDGE DISTANCE IS 25mm TYPICAL FOR SCREWS ON STRUTS.
5. REFER TO STANDARD CLIP NOTES.



PERPENDICULAR TO ROOF TRUSS

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TLDSB - WASHROOM RENOVATIONS

STANDARD DETAILS SD-04:
TYPICAL STEEL LINTELS
IN NON-LOAD BEARING
MASONRY WALL AT WOOD STRUCTURE

LICENSED PROFESSIONAL ENGINEER
2018-11-22
J.V.L.FORD
100042014
PROVINCE OF ONTARIO

Date: 2018-05-18	Scale: N.T.S.
Drawn by: I.C.	Checked by: J.F.
Project No. 19023	
Drawing No. SK-06B	

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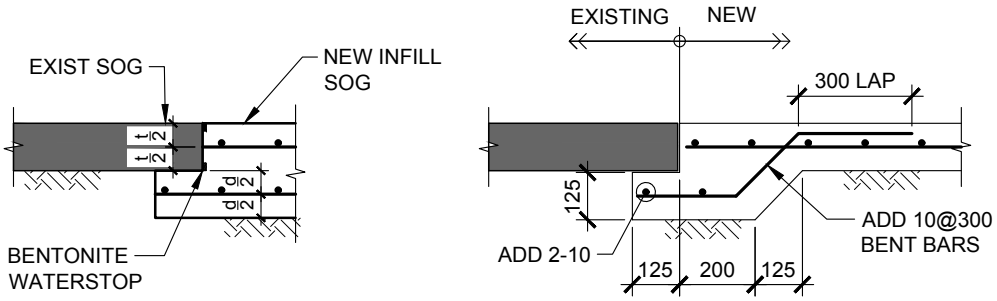
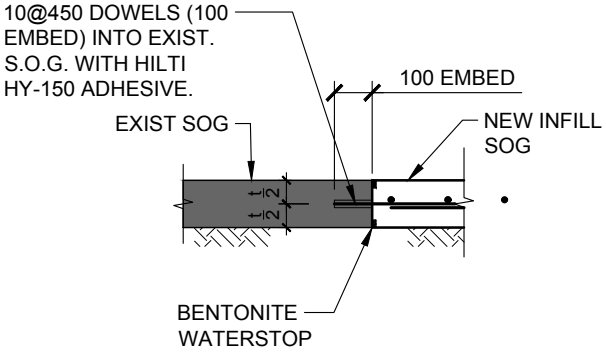


SOG INFILL WITH KEY



SOG INFILL WITH DRILLED DOWELS

DETAIL NOTES:

1. PROVIDE SOG INFILL TO MATCH EXISTING THICKNESS AND TOP OF FLOOR ELEVATION UNLESS NOTED ON PLAN
2. IF REQUIRED BY ARCHITECT PROVIDE CONTINUOUS BENTONITE WATER-STOP AT SOG JOINT AND/OR VAPOUR BARRIER BELOW SOG INFILL.
3. LOCATE ALL CONDUITS EMBEDDED IN CONCRETE CLEAR OF THE TOP ONE THIRD OF THE SLAB THICKNESS TO AVOID DAMAGE.
4. PROVIDE CONTINUOUS REGLETS AT BOTH JOINTS AGAINST THE EXISTING SLAB-ON-GRADE.
5. REINFORCE SOG REPAIR WITH 10@300 E.W. AND EDGE DETAIL PER ABOVE

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TLDSB - WASHROOM RENOVATIONS

STANDARD DETAILS SD-05: DETAIL FOR SLAB ON GRADE INFILL

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Project No.	19023
Drawing No.	SK-07

1 General

1.1 RELATED WORK

.1 Section 06200 Finish Carpentry

1.2 SOURCE QUALITY CONTROL

.1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
.2 Plywood identification: by grade mark in accordance with applicable CSA standards.

2 Products

2.1 LUMBER MATERIAL

.1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
  .1 CSA 0141-1970.
  .2 NLGA Standard Grading Rules for Canadian Lumber, latest edition.
  .3 All framing members including studs shall be Spruce-Pine-Fir No. 2 or better, unless otherwise noted on the Structural Drawings.
.2 Machine stress-rates lumber is acceptable for all purposes.
.3 Glued end-jointed (finger-joined) lumber is not acceptable and will be rejected.
.4 Framing and board lumber: in accordance with OBC 413/90 and as indicated.
.5 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:
  .1 Use S4S material.
  .2 Board sizes: S/P/F species, NLGA "standard" or better grade, grade marked S-Dry.
  .3 Dimension sizes: S/P/F species, NLGA "standard" or better grade, grade marked S-Dry.

2.2 PANEL MATERIALS

.1 Panels as noted on the drawings shall be of type, grade and thickness as indicated, in accordance with following standards:
  .1 Canadian softwood plywood (CSP): to CSA 0151.
.2 Except as specified otherwise panels shall be 1200 x 2400 mm size, square-edge, CSP exterior grade.

2.3 FASTENERS

.1 In accordance with Part 9 of OBC O.Reg. 413/90 as supplemented by following requirements except where specific type is indicated.

.2 Nails, spikes and staples to OBC O.Reg. 413/90 except:
  .1 Use common spiral nails and spiral spikes except where indicated otherwise.
  .2 Use hot dip zinc coated finish steel for exterior, and for pressure-preservative treated lumber except where indicated otherwise.
.3 Bolt, nut, washer, screw and pin type fasteners: with hot-dip galvanized finish to CSA G164 for exterior and for pressure-preservative treated lumber, elsewhere with primer paint finish where installed on sight-exposed surfaces.
.4 Use surface fastenings of following types, except where specific type is indicated.
  .1 To hollow masonry and panel surfaces use toggle bolt.
  .2 To solid masonry and concrete use expansion shield with lag screw.
.5 Galvanizing: to CSA G164-M1981, use galvanized fasteners for exterior work, including strapping to receive siding, and preservative treated lumber.
.6 Joist hangers: minimum 1 mm thick sheet steel, galvanized ZF001 coating designation, size to suit applied loads and purpose.
.7 Joist hangers, anchors and ties must be manufactured by Simpson Strong-Tie Company Inc., MGA Connectors or by Silver TECO and that special nails be used when required by manufacturer.
.8 Provide all required connection accessories including hangers, bearing enhancers, uplift anchors, column caps and bases for all lintels, beams, columns, and engineered wood joists.

2.4 DAMPPROOF MEMBRANE

.1 Polyethylene film: to CGSB-51.34, Type 1, 0.25 mm (10 mil) thick.

2.5 BUILDING PAPER

.1 To CAN/CGSB-51.32. Single ply type.

3 Execution

3.1 CONSTRUCTION

.1 Comply with requirements of Part 9 of the Ontario Building Code, latest version, including latest ammendments, Subsection 9.23.5 or as required by wood manufacturers and as follows. Holes shall be spaced not less than four diameters apart centre-to-centre. Holes in studs shall be centered. Where load bearing studs are notched, they shall be reinforced by nailing one additional stud beside each stud that has been notched. Where the added studs are turned 90° to the notched studs, nail together with 89 mm nails at 300 mm on centre.

3.2 FRAMING

.1 Install members true to line, levels and elevations. Space uniformly.
.2 Construct continuous members from pieces of longest practical length.
.3 Install spanning members with "crown-edge" up, all joists parallel, spaced not over 400 mm o.c.

.4 Construct wood stud framing with straight studs erected plumb, perpendicular, spaced not over 400 mm o.c. and securely nailed to top and bottom plates. Reject warped, wet, or damaged studs, or studs with less than full face dimension. Top plate double. Frame openings with minimum double stud at with less than full face dimension. Top plate double. Frame openings with minimum double stud at each jamb, full stud bearing wood lintels, solidly framed dwarf walls at sill and head as required, double sill plates on bearing cripples.
.5 Ensure that all members are framed, anchored, tied and braced together to provide the strength and rigidity necessary for their end purposes.
.6 Erect all framing materials forming subsurfaces for wood finishes, drywall, etc., to be straight in any plain with a tolerance of 3 mm in 3000 mm, non-cumulative.
.7 Install dampproofing membrane between sole plate of all stud walls set on foundations, 300 mm wide, continuous with 200 mm laps, turned up both sides of wall, stapled in place both sides to studs, lapped and sealed under air barrier and over vapour barriers.
.8 Install sill plate gasket beneath all exterior stud walls.
.9 Build in and maintain vapour barrier strips as indicated and required to maintain air/vapour barrier continuity.
.10 Secure exterior stud wall sole plates on foundations in strict accordance with design requirements.
.11 Brace all framing temporarily in place, until braced by complete framing and sheathing.
.12 Install wall brace in every corner and where otherwise noted.
.13 Obtain permission from Building Inspector of local authority having jurisdiction, before covering fire stops or bridging with other materials.
.14 All columns must be continuous down to foundation and be blocked solidly.
.15 Joists hangers must be used where joists frame into sides of supports.
.16 Where studs are placed together to form built-up columns, individual studs must be nailed together with a row of 89 mm nails spaced not more than 300 mm apart, with the end nails located not more than 150 mm from both ends.
.17 Architectural trades are required to take job measurements of completed structure to ensure that existing dead load deflections and construction tolerances are also allowed for in their connection design.

3.3 FURRING, STRAPPING AND BLOCKING

.1 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, facings, fascia, soffit, siding and other work as required.
.2 Install strapping to support siding. Install in line with stud behind and nail directly to stud.
.3 Align and plumb faces of furring and blocking to tolerance of 1:600.
.4 Install solid lumber supports in all stud walls for mounting grab bars, washroom accessories, handrails and hardware.
.5 Except where indicated otherwise, use material at least 38 mm thick.
.6 Solid blocking must be provided between joists and rafters at supports and that cross-bridging be provided between joists and rafters at 2100 mm maximum centres along length of span.

3.4 NAILING STRIPS, GROUNDS AND ROUGH BUCKS

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

3.5 FASTENERS

.1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
.2 Countersink bolts where necessary to provide clearance for other work.
.3 Isolated columns must be anchored top and bottom using steel straps or saddles.
.4 Roof beams must be anchored to their supports using steel ties (Simpson Strong-Tie H2 or approved alternative) or saddles.

3.6 WOOD TREATMENT

.1 Treat cut surfaces of preservative treated material with surface-applied wood preservative before installation.
.2 Preservative pressure treated components: to CSA 080 Series-97 arsenic free, containing copper and azole.
.3 Fire retardant pressure treated components: to CSA 080- M1983 for maximum flame spread of 25 and labelled by ULC.
.4 Surface cut, bore and trim components to sizes required as much as possible prior to pressure treatment.

END OF SECTION

1 General

1.1 DESCRIPTION

.1 Work Included:
- .1 Provide finish wood trim, benches and mounting strips for hooks.
- .2 Provide nailing strips for architectural specialties.
- .3 Receive and install: wood/metal doors and door frames, finish door hardware supplied by owner.

.2 Related Work Specified Elsewhere But Not Limited to :
- .1 Items installed by this Section supplied by the following Sections:
  - .1 Section 05500 Miscellaneous Metals
  - .2 Section 06100 Rough Carpentry
  - .3 Section 08100 Steel Doors, Frames and Screens
  - .4 Section 8710 Finish Hardware
  - .5 Section 09900 Painting

1.3 QUALITY ASSURANCE

.1 Work of this Section shall be performed by journeyman carpenters familiar with the work they are installing, with a minimum of 5 years experience.

.2 Conform to the requirement of the following;
- .1 The Ontario Building Code.
- .2 CAN 3-O86-M84, Engineering Design In Wood (Working Stress Design).
- .3 CAN3-086.1-M84, Engineering Design in Wood (Limit States Design).
- .4 The National Lumber Grades Authority Standard Grading Rules.
- .5 Quality Standards For Architectural Woodwork, 1987, by the Architectural Woodwork Manufacturers of Canada (AWMAC).
- .6 CSA O112 - Series M1977, Standards for Wood Adhesives.
- .7 CSA O115 - M1982, Hardwood and Decorative Plywood.
- .8 CSA O121 - M1978, Douglas Fir Plywood.
- .9 CSA O141 - 1970, Softwood Lumber.
- .10 CSA O151 - M1978, Canadian Softwood Plywood.
- .11 CSA O153 - M1980, Poplar Plywood.
- .12 CAN 3 O188.1-M78, Interior Mat-Formed Wood Particleboard.
- .13 CAN 3 0188.3-M82, Exterior-Bond Mat-Formed Wood Particleboard.
- .14 CAN 3 O437.O-M85, Waferboard and Strandboard.

1.4 SUBMITTALS

.1 Submit installation details and instructions for all work to be installed by this Section in accordance with Section 01300 Submittals. Where products are fabricated by other Sections, instructions and details shall be as provided by the fabricator. See reviewed shop drawings.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Protect all wood from wetting and moisture gain.
.2 Receive and store all products with care, preventing damage, store indoors in secure, dry area off the floor, under wrap.

2.0 Products

2.1 MATERIALS

.1 Softwood lumber: Select Grade White Pine to CSA 0141-1970 and National Lumber Grades Authority requirements.
.2 Hardwood lumber: Maple or Birch, select grade to NHLA standards, kiln dried, as indicated.
.3 Nailing Strips and Strappings: Spruce, 122 "Standard" light framing.
.4 Adhesive:
  .1 Glue for Wood Furniture and Assemblies: CSA 0112.4-M1977, polyvinyl adhesive.
  .2 Glue for high humidity areas: CSA 0112.5-M1977, Type I and II water resistant area formaldehyde adhesive.
  .3 Glue for locations exposed to weather: CSA 0112.7-M1977, Class I, Type I, or Class II Type I, phenol or resorcinol resin adhesive.
.5 Nails and staples: to CSA B111-1974, plain finish.
.6 Lags / Screws: Stainless Steel lags / screws.
.7 Plastic Lumber Planks: Perma-deck Advantage+ by Re-Plast (formly Cascades). Colour: to be selected by consultant from full range of standard colours. Location : Benches (refer to drawings)

2.2 FABRICATION

.1 General Workmanship:
  .1 Fabricate and install work in accordance with the best practice by skilled craftsman of companies specializing in the work specified and to the requirements of other trades. Each item shall be as shown on drawings and as detailed on shop drawings.
  .2 Use running members in greatest lengths obtainable.
  .3 Machine dressed wood shall be slow fed using sharp cutters and finished work shall be free from drag, feathers, slivers, or roughness of any kind. Remove machine marks by sanding.
  .4 In finished work machine sand exposed surfaces in shop and hand sand on job site to even smooth surface, fee from scratches, ready for finishing.
  .5 Frame materials with tight joints rigidly held in place. Use glue blocks where necessary.
  .6 Assemble work in shop and deliver ready for installation, as far as practicable. Leave ample allowance for fitting and scribing on job.
  .7 Take care to prevent opening up of glue lines in finished work.
  .8 Design construction methods for the expansion and contraction of materials.
  .9 Conceal joints and connections wherever possible. Locate prominent joints where directed by Consultant. Intermediate joints between supports not permitted.
  .10 Mortise and tenon joints shall be glued and pinned.
  .11 Exposed edges of plywood and particle board shall have veneer band, 1/32" minimum thickness, of the same species as face veneer. Glue veneer edging using hot press high frequency gluing process. Do not use nails.

.12 Glue, blind screw or nail all work unless otherwise specified. Set surface nails and plug surface screws with wood plugs of material to match surface. Conceal nailing of tongued and grooved work.
.13 Accurately scribe, cope and mitre members where required.
.14 Finished woodwork shall be free from bruises, blemishes, mineral marks, knots, shakes, and other defects and shall be selected for colour and grain.
.15 Take field dimensions and fabricate work to suit field dimensions.
.16 Fasten wood nailers, blocking solidly to adjacent materials in true planes.
.17 Check access clearance at site before assembling large units or components in factory for shipment to site.
.18 Provide all blocking coming in direct contact with millwork in accordance with applicable provision set forth herein.
.19 Comply with glue manufacturer's recommendations for lumber moisture content, glue shelf life, pot life, working life, mixing, spreading, assembly time, time under pressure and ambient temperature.
.20 Moisture content of interior woodwork shall not be less than 4% nor more than 8%.

3 Execution

3.1 INSTALLATIONS

.1 General:
  .1 Install all carpentry and millwork shown on drawings or as specified for completion of the work. Cooperate with other trades in installing items supplied by other sections.
  .2 Set and secure all materials and components in place, rigid plumb and square.
  .3 Install all work in accordance with the best practice of skilled craftspeople specialized in work specified and to the requirements of other trades.
  .4 Be responsible for methods of construction and for ensuring that materials are rigidly and securely attached and will not be loosened by work of other trades.
  .5 Joints made on site shall be equal in quality and workmanship to joints made in the shop.
  .6 Apply water resistant building paper or bituminous coating over wood framing members in contact with masonry or cementitious construction.
  .7 Install hardware and all specialties listed in Division 08 and Division 10 as per manufacturer's recommendation or as specified in Division 08 and Division 10.
  .8 On completion, remove manufacturers identification marks and clean surfaces.
.2 Doors and Finish Hardware:
  .1 Take delivery of finish hardware and install, except hardware specified as part of work of another Section. Check each item as received.
  .2 Set, fit and adjust hardware according to manufacturer's directions at heights shown as directed by Consultant. Hardware shall operate freely. Protect installed hardware from damage and paint spotting.
  .3 Install all hardware for wood doors.
  .4 Use templates as supplied by manufacturer for pre-drilling doors and frames.
  .5 Prepare wood doors for installation with required bevels, clearances and mortises for hardware. Install wood doors, transoms, grilles and all applicable hardware, including hinges.
  .6 Fit, hang and trim wood doors and transoms. Leave 2 mm clearance at head and jambs and 19mm (3/4") clearance at sill unless indicated otherwise. Undercut bottom rails in areas to be carpeted. Install doors so that face on opening side is dept 1.6 mm (1/16") shy (recessed)

from rebate even after bumpers installed. After trimming door have painter seal top and bottom edges of door and transom under Section 09900, Painting and Finishing.

.7 Pre-drill kickplates and doors before attachment of plates. Apply with water resistant adhesive and countersunk stainless steel screws.

END OF SECTION

1 General

1.1 GENERAL REQUIREMENTS

.1 Conform to Division 01, General Requirements.

1.2 DESCRIPTION

.1 Work Included:
  .1 Supply to the Site all architectural woodwork requiring shop fabrication, including but not limited to: counters, shelving, valances, etc. Refer to drawings for further scope of work.
  .2 Supply all woodwork complete with installed hardware supplied by this Section.
  .3 Shop finishing in accordance with requirements of Section 09900.

.2 Related Work Specified Elsewhere:
  .1 Supply of metal counter and bench support brackets by Section 00500 Metal fabrications.
  .2 Installation of this work by Section 06200 Finish Carpentry.
  .3 Sinks and plumbing provided by Division 15, Mechanical.

1.3 QUALITY ASSURANCE

.1 Conform to the requirements of:
  .1 Quality Standards for Architectural Woodwork by the Architectural Woodwork Manufacturers Association of Canada (AWMAC).

.2 Approved casework manufacturers:
  .1 Allwood Carpentry Manufacturing (416) 398-1460.
  .2 CiF Lab Solutions, (905) 738-5821
  .3 Ontario Cabinet Makers (519) 969-9164
  .4 Second Generation Furnishings Inc. (905) 738-1403
  .5 Penwood Custom Manufacturing, (905) 738-1655
  .6 P.C. Custom Woodworking, (705) 472-9034
  .7 Harris Corporate Interiors, (905) 563-6111
  .8 Emily Creek Woodworking Limited (705)-277-1553
  .9 Savignac General Woodworking (705) 753-0307
  .10 Woodarts Limited (705) 743-6493
  .11 Shaw Woodworks (705) 445-6190
  .12 Baywood Interiors (519) 748-9577
  .13 Or pre-approved equal

1.4 SUBMITTALS

.1 Shop Drawings:
  .1 Submit detailed shop drawings in accordance with Section 01300 Submittals.
  .2 Submit list of hardware proposed, for approval.
  .3 Indicate areas of fastening where blocking will be required in walls.
  .4 Indicate size dimensions available for cabinets.

.2 Samples:
  .1 Submit samples of solid surfacing and plastic laminate required for the Work.
  .2 Submit stain samples on sample of wood specified to be stained.
  .3 Submit 3 samples of 1 bd. Ft. in size of each type of finish on each type of wood to be used.
  .4 Submit samples of all joinery, if and when requested.
  .5 Submit samples of all hardware components.
.3 Reference Data:
  .1 Provide finish materials catalogue cuts and maintenance instructions including warnings on wrong maintenance practices for insertion in Operating Manuals and Reference Data specified in Section 01300, Submittals.

1.5 WARRANTY

.1 Provide a 2 (two) year warranty on the work of this Section commencing on the date of Substantial Completion. The warranty terms shall be the same as those provided under the terms of the AWMAC Certificate of Guarantee however the foregoing shall not be constructed to mean that the architectural woodwork subcontractor or supplier must be a member of AWMAC or that an AWMAC Certificate of Guarantee must be provided.

2 Products

2.1 MATERIALS

.1 Solid Wood:
  .1 Unless otherwise indicated, provide AWMAC Premium Grade.
  .2 All wood materials shall be new, straight and clean, free of sap, knots, pitch, and other defects, except as permitted by applicable grading rules.
  .3 All wood shall be kiln dried to a maximum moisture content of 6% to 8%.
  .4 Hardwood: White Birch Premium Grade.
  .5 Softwood: to CAN/CSA-0141-05, dressed all sides used in concealed locations only except where shown otherwise. Concealed framing: No. 1 Grade White Pine.
.2 Panel Materials:
  .1 Composite wood and agrifiber products shall contain no added urea-formaldehyde resin. Adhesives used to fabricate laminated assemblies containing these products shall contain no urea formaldehyde.
  .2 Hardwood plywood: to CSA 0115-M1982, Type II, veneer: AWI/AWMAC AA Grade Select White Birch.
    .1 Core: Minimum 5 ply plywood veneer waterproof core, laminated with waterproof adhesive.
    .2 Grade: Select White Birch Premium Grade 'A' No. 1 Face grade. Good both sides where exposed, Good one side otherwise.
    .3 Edging: 13mm thick solid wood edging of same species as veneer, except as noted otherwise.
  .3 Softwood plywood: to CSA 0151-04, Sanded Grade, solid two sides. Use in concealed locations only.

.3 Solid Surface Counters:
Cast, nonporous, filled polymer, not coated, laminated or of composite construction with through body colors meeting ANSI Z124.3 or ANSI Z124.6, having minimum physical and performance properties specified:
- .1 Thickness: 12.7mm (1/2") stock, with additional thickness laminated from same stock to suit profiles required.
- .2 Edge Treatment: 3/16" radius, typical
- .3 Backsplash, etc.: As shown, constructed over ply backing where required.
- .4 Joint Adhesive: manufacture's standard adhesive to create inconspicuous, nonporous joints, with a chemical bond.
- .5 Colours and textures: to be selected from standard colour range.
- .6 Acceptable manufacturers:
  - .1 Corian by Dupont
  - .2 Silestone by Cosentino
  - .3 Formica Solid Surfacing
  - .4 Wilsonart Solid Surface

.4 Plastic Laminated Components:
- .1 Plastic laminate facing sheet: CAN3-A172-M79, General Purpose Standard Grade (GP-S) for all flat applications and edge banding and Postforming Standard Grade (PF-S) for postformed work; colours, from either "Nevamar","Formica", or "Wilsonart" or "Arborite" at the Consultants discretion.
- .2 Backing sheet: BK Grade by manufacturer of facing sheet; not less than 0.5mm thick and same thickness and colour as face laminate. Sanded one side.
- .3 Plastic laminate liner sheets: supplied by same manufacturer as facing sheet, not less than 0.5mm thick, colour as later selected by Consultant from manufacturer standard colour range.
- .4 Core: sold core plywood
- .5 Laminating adhesive: CAN3-0112 Series M1977, urea formaldehyde free.
- .6 Core sealer: clear water resistant synthetic resin sealer.

.5 Adhesive:
- .1 Glue for Wood Furniture and Assemblies: CSA 0112.4-M1977, polyvinyl adhesive.
- .2 Glue for high humidity areas: CSA 0112.5-M1977, Type I and II water resistant area formaldehyde adhesive.
- .3 Glue for locations exposed to weather: CSA 0112.7-M1977, Class I, Type I, or Class II Type I, phenol or resorcinol resin adhesive.
- .4 Laminated plastic adhesive: contact adhesive to CGSB 71-GP-20M and as recommended by laminate manufacturer.

.6 Cabinet Hardware:
- .1 Door hinges: "European" style, concealed, hinges, press formed hinge links, die cast screw on hinge cup inset into door, 3-dimensional independent adjustment, all exposed parts nickel plated, opening angle 125°, for full or half overlay as required, on all units except 95° opening angle where doors open against walls. Two hinges per typical door, three hinges per door up to 1200mm tall, four hinges per full height door. Supply "Blum" 94M 5500 or approved alternate.
- .2 Drawer Slides: "Accuride 3832" by RichielieuLtee. Or approved alternate, white epoxy finish. One pair per drawer.
- .3 Drawer and Swing Door Pulls: U shaped wire pulles 89mm (3 ½") c/w screw fastening, finish to be "Dull Nickel - finish #195", supply #33204 by Richielieu or approved alternate.
- .4 Shelf Supports:
  - .1 Recessed pilasters & clips: K&V 255 & 256, zinc.

.5 Door and Drawer Bumpers: rubber bumpers, 10mm diameter x 3mm thick, screwed on. Two per door or drawer. Supply min. 20 spare bumpers.
.6 Closet Rod: 27mm diameter tube with 14 gauge, chrome plated finish, rod c/w end flanges, Richielieu product #122108140. Provide intermediate rod support brackets at 610mm O.C. maximum where rod length exceeds 1200mm in length.
.7 Drawer Locks: Olympus 078 or National Cabinet Lock C8702 or Corbin CCL 02066, keyed to room hardware.
.8 Cabinet Locks: Olympus 078 or National Cabinet Lock C8702 or Corbin CCL 02067, keyed as directed by Consultant.

.7 Wood Finishes: clear pre-catalyzed lacquer finish (maximum VOC content of 55 g/l) applied in accordance with requirements of section 09900 Painting.
.8 Plastic Lumber Planks:
.1 Plastic Lumber Planks: Perma-deck Advantage+ by Re-Plast (formly Cascades). Colour: to be selected by consultant from full range of standard colours. Location: Benches (refer to drawings).

2.2 CABINET STYLE

.1 Flush overlay doors and drawers on gable end “European” style construction.

2.3 FABRICATION GENERAL

.1 Obtain all dimensions affecting Work of this Section from job site.
.2 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.
.3 Fabricate cabinets to CAN3-A278, door tolerances to AWMAC "premium" grade.
.4 Comply with CAN3-A172-M79, Appendix 'A'.
.5 Provide cabinet units to sizes as indicated on drawings ± 25mm, or as indicated by Consultant. Size units for ± 25mm filer strip against adjacent walls and bulkheads.
.6 Fabricate units to profiles indicated on drawings.
.7 Shop assemble work for delivery to site in size easily handled, and to ensure passage through doorways.
.8 For upper and lower corners, provide starter cabinet unit, with gable at intersection of adjoining cabinet, unless noted otherwise.
.9 Ensure adjacent parts of continuous laminate work match in colour and pattern.
.10 Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 2400 mm. Keep joints 600 mm from sink cutouts.
.11 Form shaped profiles and bends as indicated, using postforming grade laminate to laminate manufacturer's instructions.
.12 Use straight self-edging laminate strip for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. Do not mitre laminate edges.
.13 Apply laminate backing sheet to reverse side of core of plastic laminate work.
.14 Construct all cabinetwork, counters, cupboards, including tops, bottoms, backs and shelves from hardwood faced veneer core plywood or solid hardwood. Use same species of hardwood throughout, unless a specific species is called up, shown or specified for a particular unit or area. Select hardwood plywood for each cabinetwork unit so as to produce well blended uniform appearance. Avoid use of starkly contrasting veneer colours within any one unit. Replace components which in Consultant's opinion are not of satisfactory appearance.

.15 Make all necessary cut-outs for communications equipment, appliances, piping, sinks, etc. to be installed within millwork. Coordinate with other divisions as required to ensure orderly progress of the work and complete and neat installation.

2.4 CABINET FABRICATION

.1 Fabricate casework to AWMAC premium quality grade.
  .1 All joints shall be glued rebate, or glued and dowelled or glued and screwed with appropriate screw connectors approved by Consultant. Plain or nailed butt joints are not acceptable.
  .2 Counters: Counter surfacing as noted over two full layers of 19mm solid core plywood.
  .2 Case Bodies: 19mm Veneer Plywood with solid edging at exposed edges.
  .3 Backs for Base Cabinets: 12mm Veneer Plywood with solid edging at exposed edges.
  .4 Backs for Upper and/or Wall Mounted Cabinets: 19mm Veneer Plywood.
  .5 Shelving: 19mm Veneer Plywood with solid edging at exposed edges (25mm thick shelves where span is greater than 875mm).
.3 Door & Drawer Faces:
  .1 Typical: 19mm Veneer Plywood with solid edging.
  .2 Doors greater than 610mm width or 1000mm length: 2-19mm Veneer Plywood with solid edging.
  .3 All joints to be glued rebate, or glued and dowelled or glued and screwed with appropriate screw connectors approved by Consultant.
  .4 Drawers to be maximum practical depth.
  .5 Drawer fronts: 19mm Veneer Plywood.
  .5 Drawer bodies: 12mm Veneer Plywood
  .6 Valance panels: 19mm Veneer Plywood with solid edging at exposed edges.
  .7 Furring, blocking, nailing strips, grounds and rough bucks and sleepers: Softwood lumber.
  .9 Supply and install cabinet hardware, in quantity required for doors, shelves, and drawers.
  .10 No exposed fasteners allowed in exposed gable ends.

2.5 SHIPPING

.1 Protect units with factory applied wrapping to prevent damage during shipping.
.2 Where hot melt adhesives have been used or where low temperatures will have adverse effect on cabinets, protect units from freezing.

3 Execution

3.1 PREPARATION FOR INSTALLATION

.1 Provide templates, data for all blocking, reinforcing, nailers to be built-in to receive Work of this Section.
.2 Provide detailed installation instructions, and reviewed shop drawings to guide installation.
.3 Provide material required for touch ups of finishes damaged during installation.

END OF SECTION

1 General

1.1 DESCRIPTION

.1 Work Included:
  .1 Work of this Section to all rated fire and smoke separations and barriers.
  .2 Provide a system capable of sealing a separation against the passage of smoke, toxic fumes, water and flame.
.2 Related Work Specified Elsewhere:
  .1 Concrete Unit Masonry Section 04220
  .2 Sealants - Section 07900
  .3 Gypsum Board- Section 09250

1.3 QUALITY ASSURANCE

.1 Use material produced under the label service of an agency which has tested the material, or assemblies containing the material, in accordance with specified test standards.

1.4 SUBMITTALS

.1 At least one month prior to scheduled application of firestopping submit to the Consultant a schedule listing surfaces or components to which firestopping is to be applied, and indicating the firestopping system and materials required and detailing installation.
.2 Where possible determine the thickness to be applied from tests of assemblies identical to the assembly to be protected conducted in accordance with ULC S-101, Guide # 40U19, ASTM E119, ULI 1479, NFPA 251, or ASTM E814.
.3 Where the assembly to be protected does not correspond perfectly to a tested assembly, determine system from available engineering studies, or correspondence with the testing agency indicating the effect of the differences on the fire separation of the assembly.
.4 Where the assembly includes conditions which do not correspond to those included in any previously tested assembly and for which no relevant engineering information is available use the same system and material as would be required for a tested assembly with similar conditions.
.5 Maintenance data in accordance with Section 01300 Submittals.

1.5 DELIVERY STORAGE AND HANDLING

.1 Deliver and store materials in a dry protected area, in original undamaged sealed containers with the manufacturer's labels, application instruction, and testing agency's labels intact.
.2 Keep the materials dry until ready for use.

1.6 PROJECT CONDITIONS

.1 Do not install firestopping materials until area in which they are scheduled is closed-in and protected from dampness.

1.7 WARRANTY

.1 Provide a five year warranty on the work of this Section commencing on the date of Substantial Completion. Promptly correct any defects or deficiencies which become apparent within warranty period. Defects shall include but shall not be limited to cracking, breakdown of bond, failure to stay in place, or bleeding.

2 Products

2.1 GENERAL

.1 Fire stopping and smoke seal systems: in accordance with CAN4-S115-M.
  .1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of CAN4-S115-M and not to exceed opening sizes for which they are intended.
.2 Service penetration assemblies: certified by ULC in accordance with CAN4-S115-M and listed in ULC Guide No. 40 U19.
.3 Service penetration firestop components: certified by ULC in accordance with CAN4-S115-M and listed in ULC Guide No. 40 U19.13 and ULC Guide No. 40 U19.15 under the Label Service of ULC.
.4 Fire-resistance rating of installed fire stopping assembly not less than the fire-resistance rating of surrounding floor and wall assembly.
.5 Fire stopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal; do not use cementitious or rigid seal at such locations.
.6 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal; do not use a cementitious or rigid seal at such locations.
.7 Primers: to manufacturer's recommendation for specific material, substrate, and end use.
.8 Water (if applicable): potable, clean and free from injurious amounts of deleterious substances.
.9 Damming and backup materials, supports and anchoring devices: to manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.
.10 Sealants for vertical joints: non-sagging type.
.11 Where exposed within assemblies with painted finishes, fire stop sealant must be paintable

3 Execution

3.1 PREPARATION

.1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials. Ensure that substrates and surfaces are clean, dry and frost free.
.2 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer's instructions including removal of oil, grease, dust, frost, water and other material which may inhibit bonding.
.3 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier where present.
.4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces, remove masking immediately following installation of firestopping.

3.2 INSTALLATION

.1 Test firestopping on all materials to which it will be applied to ensure proper adhesion and consult manufacturer for additional instructions if adhesion is less than adequate.
.2 Install fire stopping and smoke seal material and components in accordance with ULC certification and manufacturer's instructions.
.3 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.
.4 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.
.5 Tool or trowel exposed surfaces to a neat finish, suitable for painting where required.
.6 Remove excess compound promptly as work progresses and upon completion.

3.3 INSPECTION

.1 Notify Consultant when ready for inspection and do not conceal or enclose firestopping materials until inspected and defects corrected.

3.4 SCHEDULE

.1 Firestop and smoke seal at:
  .1 Penetrations through fire-resistance rated assemblies.
  .2 Top of fire-resistance rated masonry and gypsum board partitions.
  .3 Control joints in fire-resistance rated gypsum board partitions and walls.
  .4 Openings and sleeves installed for future use through fire separations.

3.5 CLEAN UP

.1 Remove excess materials and debris and clean adjacent surfaces immediately after application.
.2 Remove temporary dams after initial set of fire stopping and smoke seal materials.

END OF SECTION

1 General

1.1 DESCRIPTION

.1 Work Included:
- .1 Provide sealants in all locations indicated or specified, unless specifically specified to be provided by another section.
- .2 Supply and installation of sealants in the following locations and others which may be indicated or required to provide complete and finished work:
  - .1 Control joints in masonry, joint at top of non-loadbearing non fire-rated masonry walls; junction between masonry and other cladding.
  - .2 Joints around perimeter inside and out of windows, door and screen frames and exterior wall louvres.
  - .3 Unconcealed joints between dissimilar abutting materials including, but not limited to: vanity edges, counter tops, sink enclosures, washroom fixture/floor edge, excessive joints between cabinetry and wall, toilet bases, steel stair edges, etc.
  - .4 Vapour/Air Seal joint between various elements of exterior walls and roofs not specified as by other Sections.
  - .5 Edges of all interior door frames.

.2 Related Work Specified Elsewhere:
- .1 The following work is included in other sections in conformance with this Section:
  - .1 Firestopping and smoke seals provided by Section 07270
  - .2 Bedding of thresholds provided by Section 06200, Finish Carpentry and 06400 Architectural Woodwork.
  - .3 Steel doors & screens by Section 08100
  - .4 Acoustic sealing of gypsum board partitions provided by Section 09250, Gypsum Board.

1.2 DEFINITIONS

.1 Non-staining: bleeding not more than 3 mm beyond edge of sealant.

1.3 QUALITY ASSURANCE

.1 Qualifications of Products: All products shall be packaged in conformance with the specified standards with every package bearing a label stating the standard to which the product conforms.

.2 Qualifications of Subcontractor: Sub-Contractor must be a specialized sealant contractor familiar with all standards specified and have a minimum of 5 years experience in the work specified.

.3 Qualifications of Applier: Have a minimum of five years experience in installing sealants in exposed joints.

1.4 SUBMITTALS

.1 List of Proposed Products: Submit list of proposed products within 60 days of signing of Contract for review.
.2 Samples: Submit samples of materials if and when requested for review.
.3 Submit samples of full colour range of all exposed products for colour choice by Consultant.
.4 Maintenance and Reference Data: Submit to Section 01300 as specified therein. Specify used products and colours with respective applications.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver and store products in original containers and packaging.
.2 Protect products from freezing or overheating.
.3 Bring products to temperature range recommended by manufacturer before use.

1.6 JOB CONDITIONS

.1 The sections providing joints between elements to be sealed by or in conformance with this section shall conform to the limits of movement of the specified sealant by the careful determination of acceptable lengths of element to be joined (spacing of joints) and establishment of sufficiently wide joints to accommodate anticipated movement in the finished Work.
.2 Install sealants at mean ambient annual temperatures.
.3 Inspection: Inspect work of other Sections upon which work of this Section depends and verify that conditions are suitable for this work to proceed.

1.7 WARRANTY

.1 Provide a two-year warranty on the work of this Section commencing on the date of Substantial Completion.
.2 Warrant that surfaces shall not be stained by sealants.

2 Products

2.1 GENERAL

.1 Specific sealant products as produced by specific manufacturers are specified herein.
.2 Alternate manufacturer's and products will be considered in accordance with the Instructions to Bidders.

2.2 MATERIALS

.1 Primer: As recommended by sealant manufacturer for type of surface being primed and conditions of service.

.2 Joint Filler and Back-up: Circular cross section unless shown as slab or sheet, min. 25% wider than joint, semi-rigid: closed cell polyethylene or polyurethane product, Ethafoam by Dow Chemical of Canada Ltd., or product of Hercules Inc., Delaware USA, rubber tubing or non-migrating plasticized vinyl having a shore 'A' hardness of 20 and tensile strength of 130 - 200 kPA, compatible with sealant and as recommended by sealant manufacturer.
.3 Impregnated pre-formed compressible sealant for expansion joint sealing: EMSEAL, by Emseal Corporation (416) 678 2090, size to suit width of joint.
.4 Bond Breaker: As recommended for use by sealant manufacturer.
.5 Vent Tubes: Rigid clear extruded plastic, min. 6 mm ID and 9 mm OD.
.6 Sealant Colours: Colours of exposed sealants will be as selected by the Consultant from manufacturer's standard range.
.7 Sealants and applications:
.1 All exterior building envelope applications: Tremco Dymeric 240, conforming to CAN 19.24.,
.2 Interior building envelope applications: Tremco Dymonic or GE Silpruf, conforming to CAN 19.13.
.3 Acoustic separation interior partitions: Tremco Acoustical Sealant to ASTM D-217
.4 Interior General Applications (unless specified otherwise): Tremco Butyl 200, or GE Contractors 1000.
.5 Bedding Thresholds: Tremco Butyl 200, or GE Contractors 1000.
.6 Interior applications to be painted: Tremco 100 latex
.7 General Glazing Sealant: GE Silpruf to CAN 19.13-M87

3 Execution

3.1 INSPECTION

.1 Check compatibility of proposed sealants with materials to be in contact with sealant including roofing and waterproofing materials and sealants.
.2 Where sealant beads terminate against another material, check compatibility of sealant with materials encountered and ensure durable seal is provided there.

3.2 PREPARATION

.1 Clean joints and spaces which are to be caulked and ensure that they are dry and free of dust, loose mortar, oil, grease, and other foreign matter. Clean ferrous metals of rust, mill scale and foreign materials by wire brushing grinding or sanding.
.2 Wipe metal surfaces to be caulked, except pre-coated metals, with cellulose sponges or clean rags soaked with ethyl alcohol, a ketone solvent, xylol or toluol and wipe dry with a clean cloth. Clean pre-coated metals with solutions or compounds which will not injure finish and which are compatible with the primer and sealant.
.3 Provide bond breaker between sealant and other materials spanning joint where backup rod cannot be provided because of depth.
.4 Where joint depth/width ratio is 3:2 or greater, install joint filler to proper, uniform depth to give sealant bead of optimum size and shape for joint condition and expected movement condition.
.5 Where surfaces adjacent to joints are likely to become coated with sealant during applications, mask them prior to priming and caulking.

.6 Seal joints in surfaces to be painted before surfaces are painted. Where surfaces to be caulked are prime painted in shop before caulking, check to make sure prime paint is compatible with primer and sealant. If they are incompatible, inform Consultant and change primer and sealant to compatible types approved by Consultant.

.7 Prime sides of joints, if priming is recommended by sealant manufacturer for type of surface being caulked, for service conditions or performance requirement of joint.

3.3 APPLICATION

.1 Apply sealant using air- or hand-operated guns fitted with suitable nozzles and equipment approved by sealant manufacturer. Apply in strict accordance with manufacturer's directions and recommendations.

.2 Apply sealant under pressure in such a manner as to assure good adhesion to sides of joints and to completely fill all voids in the joint.

.3 Form surface of sealant smooth, concave, free from ridges, wrinkles, sags, air pockets and embedded foreign matter.

.4 Upon completion, remove masking and sealant smears and droppings from adjacent and other surfaces.

END OF SECTION

1 General

1.1 DESCRIPTION

.1 Work Included:
  .1 Supply of steel doors, panels.
.2 Related Work:
  .1 Section 08710 Finish Hardware
  .2 Section 09900 Painting

1.2 QUALITY ASSURANCE

.1 Requirements of Regulatory Agencies:
  .1 Perform Work of this Section in accordance with requirements of Canadian Manufacturing Specifications for Steel Doors and Frames, January 1978, of Canadian Steel Door and Frame Manufacturers' Association (CSDFMA), except as otherwise specified herein or shown.
  .2 Install fire labeled steel doors and frame product in accordance with NFPA-80, current edition, except where specified otherwise.
.2 Coordination:
  .1 Give full cooperation to finish hardware distributor's representative during preparation of shop drawings and execution of shop fabrication.

1.3 SUBMITTALS

.1 Shop Drawings:
  .1 Indicate each type of door, panel, materials being supplied, in sufficient detail to show door construction and anchorage, type of glazing, type of primer, cutouts and reinforcements for hardware, mortar boxes, anchors, fire and sound ratings and location of fastenings.
  .2 Submit on standard shop drawing sheets conforming to format of Canadian Steel Door and Frame Manufacturers' Association Guide. Manufacturer's numbering system shall correspond to Consultant's numbering system.
  .3 Draw frame profile details at scale not less than one-half full size.
  .4 Prior to issuing shop drawings to Consultant for review, submit shop drawings to finish hardware supplier for coordination and review. Shop drawings released to Consultant for review shall contain hardware trade's review stamp & acceptance signatures. Consultant's review of shop drawings is not intended to be a detailed review of hardware coordination.

1.4 PRODUCT HANDLING

.1 Carefully handle doors and panels to preclude any disfigurement, twisting or marking.
.2 Mark conspicuously, backs of each door and panel with number corresponding to those shown on Architectural Door and Frame Schedule to assist in in-plant coordination and on-Site positioning and installation.
.3 Remove protective coverings and store doors in vertical position. Separate surfaces by blocking to permit air circulation.
.4 Cover doors and panels in manner to protect from inclement weather, water and damage.

2 Products

2.1 ACCEPTABLE MANUFACTURERS

.1 All metal doors and panels herein shall be manufactured by S.W. Fleming, Steldor, Daley, Ambico, Macotta, Daybar Industries Ltd, Metal Door Ltd. or approved alternate.

.2 Minimum specification for products specified herein shall be Canadian Steel Door and Frame Manufacturers' Association.

2.2 MATERIALS

.1 Sheet Steel:

.1 Wipe coated galvanized steel to requirements of ASTM A526-80 with zinc designation ZF075 to ASTM A525-81 for interior doors and panels. Zinc coating designation Z275 to ASTM A525 for exterior panels. Minimum core thickness for sheet steel components shall be in accordance with CSDFMA Specifications except as follows:

		GAUGE NO.	EQUIVALENT THICKNESS
.1	Frames interior and exterior	16	0.0598"
.2	Frame reinforcement & extension channels	14	0.0747"
.3	Standard Door and panel Surface Sheets	18	0.0478"
.4	Surface sheets for doors greater than 4'-0" x 7'-4" and doors equipped	16	0.0598"

.2 Metal jamb anchors occurring in exterior walls shall be fabricated from hot dipped galvanized sheet steel.

.2 Core:

.1 In addition to CSDFMA specifications, interior non-rated doors; resin impregnated pre-expanded Kraft honeycomb core, or semi-rigid glass fibre insulation at 48.6 kg/m^3 (3 lb/ft^3) to requirements of CSA A101-M1977, Type 1 are acceptable. Maximum opening of honeycomb shall be 20 mm. (3/4").

.2 Interior fire-rated doors and transom panels; mineral or semi-rigid glass fibre insulation having min. density of 48.6 kg/m^3 to meet requirements of ULC or UL as applicable. Temperature Rise Rated (TRR) cores; composition to limit temperature rise on unexposed side of door to 250^{o}C at 30 or 60 minutes, as determined by governing building code requirements. Core shall be tested as part of a complete door assembly in accordance with CAN4-S104, ASTM E152 or NFPA 252, covering the Standard Method of Tests of Door Assemblies, and shall be listed by a nationally recognized testing agency having a factory inspection service.

.3 Touch-Up Primer: Zinc rich primer conforming to CGSB 1-GP-181M for galvanized surfaces; CISC/CPMA 2-75 for plain steel or wipe coated surfaces. Acceptable zinc-rich primers; "Sealtight Galvafroid Zinc Rich Coating" by W.R. Meadows Ltd., "Zinc Clad No. 7 Organic Zinc Rich Primer" by Sherwin Williams Co. of Canada Ltd., "Glid-Zinc 100" by Glidden Co. Division of SCM (Canada) Limited, or other acceptable manufacturer.

.4 Adhesives:
  .1 Honeycomb Cores and Steel Components: Heat resistant, sprayable grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.
  .2 Adhesive for Lock Seam Edges: 2 component, fire-resistant RRPC type designed to maintain doors faces in permanently locked position at mechanically interlocked edge seam, and having the ability to hold paint.
.5 Metal Filler: Two component, paintable epoxy type.
.6 Phosphatizing: CGSB 31-GP-105a.
.7 Miscellaneous:
  .1 Door Bumpers/Silencers: Single stud rubber/neoprene type; acceptable type, Glynn-Johnson #64 of colour selected.
  .2 Rigid Electrical Conduit For Electronically Controlled Doors: Rigid galvanized steel of 19 mm diameter with locknuts, bushings and fittings, and continuous nylon pull cord.
  .3 Panel Fasteners: Concealed fasteners of hot dip galvanized steel, type to provide accurate, secure installation.
.8 Glazing: in accordance with Section 08800 Glazing.

2.3 WELDING

.1 Ensure welds are continuous, free from intrusions, porosity, lack of fusion penetration, uneven contour, undercuts and cracks. Remove weld spatter on exposed surfaces.

2.4 FABRICATION - SLAB DOORS AND PANELS

.1 Except as otherwise specified hereinafter, construct all flush doors and panels of honeycomb core construction without face seams, including fire-rated, non-insulated and non-sound rated doors. Provide continuous , fully welded seamless door edges, with top and bottom voids filled with 1.91 mm thick steel channels tack welded in position. Provide 1mm (20ga) interlocking core vertical stiffeners at 150mm (6") O.C.
.2 Provide doors with provisions for glass and/or louvers as detailed. Provide closely fitted steel glass stops with mitred corners where required, set flush and true and weathertight for exterior locations. Drill and countersink fasteners symmetrically at 150 mm OC, and place on secure side of frame. Screw stops in place, or snap in place as applicable.
.3 Minimum Core Thicknesses for Component Parts: Requirements of CSDFMA Standard shall govern except as specified following:
  .1 Glazing stops and lite trim: 1 mm (20 ga) steel.
  .2 Hardware reinforcing:
    .1 Butts and Pivots: 3.5 mm (10 ga) steel.
    .2 Panic Bars: 3.5 mm (10 ga) steel.
    .3 Locks: 2.5 mm (12 ga)steel.
    .4 Closers: 3.5 mm (10 ga)steel.
    .5 Mortar Boxes: 1 mm (20 ga) steel.
.4 Provide fire-rated/labeled doors to ULC requirements, including applicable time-temperature requirements, and provide ULC labels for all fire-rated door frames and glazed screens. For designated oversized doors, provide letter attesting that construction is equivalent to that of a rated door.

.5 Reinforce doors to ensure that the maximum corner-to-corner racking of doors does not exceed 1.5mm.
.6 Factory prepare and reinforce doors for hardware as per frame requirements, including weatherstripping. Where pairs of doors occur, prepare meeting edge to form integral astragal at exterior locations, and to receive mortised flat bar astragal for interior locations, or where no astragal, to a 55 mm radius. Refer to Hardware Schedule for removable mullions, astragals and the like for fire-rated doors. Provide permanent astragals in accordance with ULC requirements and Door Schedule.
.7 Bevel strike edges of doors 1.5 mm maximum per 50 mm thickness.
.8 Clean doors of all deleterious substances and contaminants, sand, flood coat with air drying paste filler, and again sand to eliminate all unevenness or irregularities including dimpling resulting from welding.
.9 Shop Finishing: Chemically treat metal surfaces of doors and frames and touch up as per Standard.

3 Execution

3.1 INSTALLATION

.1 Supply doors, panels, accessories and instruction to Site for appropriate trades to install.

3.2 CLEANING

.1 Remove all marks and soil from surfaces attributable to Work of this Section, by cleaning in a safe and thorough manner.

END OF SECTION

1 General

1.1 DESCRIPTION

.1 Furnish, deliver and install finish hardware.
.2 It is intended that the following list of hardware will cover finish hardware to complete the project. Bring to the Architect's attention any omissions, discrepancies that will affect work in this section during the bidding period.

1.2 RELATED WORK

.1 General Requirements Division 1
.2 Section 06200 Finish Carpentry
.3 Section 06400 Architectural Woodwork
.4 Section 08100 Steel Doors, Frames and Screens
.5 Division 16 Electrical Specifications / Drawings

1.3 PRODUCTS SUPPLIED BUT NOT INSTALLED IN THIS SECTION

Power supplies, compressor/control boxes, junction boxes installed by Division 16.

1.4 REFERENCE STANDARDS

.1 Door and Hardware Institute - Recommended locations for Architectural Hardware for Standard Steel Doors and Frames
.2 Door and Hardware Institute - Recommended locations for Architectural Hardware for Flush Wood Doors
.3 NFPA 80-Standard for Fire Doors and Windows, 1999 Edition
.4 Door and Hardware Institute - Sequence Format for Hardware Schedule
.5 Door and Hardware Institute - Key Systems and Nomenclature
.6 Door and Hardware Institute - Abbreviations and Symbols used in Architectural Door and Hardware Schedules and Specifications
.7 Door and Hardware Institute – Installation Guide for Doors and Hardware
.8 Ontario Building Code

1.5 SUBMITTALS

.1 Updated Finish Hardware Schedule:
Submit submittals in accordance with Section 01300 Submittal Procedures. Prepare detailed hardware schedules in Door and Hardware (DHI) vertical format as detailed in Reference 1.4.4.

.2 Product Data:
Submit a digital shop drawing of product data sheets with the finish hardware schedule showing items of hardware to be used on the project.

.3 Samples:
When requested in writing, provide (to the Consultants Site Office) one sample of each hardware item complete with fasteners, within thirty (30) calendar days of award of a purchase order. Samples to be clearly labeled with their hardware schedule designation and manufacturers' name and model number. Samples will be incorporated into the work.

.4 Templates:
After approval of the hardware schedule shop drawing, submit template information to related trades

.5 Wiring Diagrams
Co-ordinate with related trades, meet with the owner and security provider and submit a written description of the functional use (mode of operation) of electrical hardware products specified. Include operation for ingress, egress, fire alarm, and after hours use where applicable. Include door and frame elevations showing the location of each item of electrical hardware to be installed, mode of operation including a diagram showing number and size of conductors. Indicate on elevation drawing items provided by related trades, include for back boxes, and 120V power sources. Provide point to point drawings showing terminal connections necessary for a complete installation.

.6 Operations and Maintenance Data
Prior to Substantial Completion, furnish to the owner, two (2) copies of an owner's operation and maintenance manuals in a three ring binder with the following information:

1. Name of hardware distributor, address and contact name
2. Copy of final "as-built" finish hardware schedule
3. Wiring diagrams, elevations, risers, point to point
4. Catalogue cut sheets and product specifications for each product
5. Parts list for each product
6. Installation instructions and templates for each product

1.6 QUALITY ASSURANCE

.1 Review installation procedures with the Contractor's Designated Installers. Hold instruction meetings with installers prior to installation and subsequent review meetings during the installation period. Submit minutes of meetings to the Consultant.

.2 Alternates
Only approved products specified are accepted. Make alternate requests in accordance with Division 1. Include product data and indicate benefit to the project.

.3 Supplier Qualifications
Successful hardware distributor to have a minimum of five (5) years' experience in the door and hardware industry. Distributor to have on staff an Architectural Hardware Consultant (A.H.C.) whose name will be listed on the hardware schedule title page submittal and will be responsible for scheduling, detailing, (see Reference 1.5.4) ordering and co-ordination of the finishing hardware for this project. If so requested by the Architect and or installer this individual will be required to visit the jobsite for any installation problems that may occur.

.4 Designated Installers
Hardware Installers must have a minimum of five (5) years' experience in installation of hardware. Provide verification of installer's qualification to Consultant for approval. Installers to attend review meetings with the Hardware Distributor.

1.7 DELIVERY, STORAGE AND HANDLING

.1 Marking and Packaging
Mark cartons with heading number, door number, and key-set symbol where applicable in original packaging provided by the manufacturer. Pack packaged hardware in suitable wrappings and containers to protect it from damage during shipping and storage.
Enclose accessories, fastening devices and other loose items with each applicable item of hardware.

.2 Delivery
Deliver hardware to related trades.

.3 Storage
Store in a clean, dry room with lockable man door and adequate shelving to permit organization so item numbers are readily visible.

1.8 WARRANTY

.1 Provide warranties by the accepted manufacturers:

Hardware Item	Length of Warranty
Mortise Hinges	1 year
Continuous Hinges	Lifetime
Locks (ND Series)	10 years
Exit Devices	3 years
Door Closers – Mechanical 4040XP	30 years
Auto Door Operators	1 Year
Overhead Stops/Holders	1 year
Floor/Wall stops	1 year
Electric Strikes	5 years
Power Supplies	1 year

1.9 MAINTENANCE

.1 Maintenance Service

After the building is occupied arrange an appointment with the maintenance staff from the Trillium Lakelands School Board for instruction of proper use, servicing, adjusting and lubrication of hardware furnished. Submit to the consultant a list of attendees and meeting date.

.2 Extra Materials

Provide the following items in proper manufacturer's cartons once the job has been completed:

1. 5 of each installation tool used for locks/passage/privacy, type of door closers, and exit devices.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

Products listed in the hardware groups are from the manufacturers listed below:

ITEM	MANUFACTURER NAME
Full Mortise Hinges	Ives, Hager, Stanley
Continuous Hinges	Ives
Locksets, Latchsets/Deadbolts	Best, Halsco
Cylinders	Best
Exit Devices, Removable Mullions	Sargent
Surface/Flush Bolts	Ives
Door Closers	LCN
Overhead Door Holders/Stops	Glynn Johnson
Door Pulls/Flatware	Canadian Builders Hardware
Wall/Floor Stops	Ives, CBH
Weather/Smoke/Sound Seals	KN Crowder
Door Sweeps/Thresholds	KN Crowder
Automatic Door Operators/Actuators	Horton
Electric Strikes	Von Duprin
Power Supplies	Schlage Electronics, Von Duprin

2.2 MATERIALS

1. Screws and Fasteners:
   Screws and fasteners to be matching finish to their product and to be manufacturer's standard. Door closers, door holders and exit devices installed on fire rated wood doors and hollow metal doors to be attached with fasteners to meet code requirements.
2. Materials-Acceptable Manufacturers (Note: Supply products in a given category from the same manufacturer):
   - .1 Mortise Hinges
     Provide five knuckle heavy weight bearing hinges with NRP option on reverse bevel doors with locking hardware. Hinge width to accommodate door closer projection, door

trim and allow for 180-degree swing. Provide four heavy weight hinges for doors. Supply ferrous (steel), stainless steel material for all interior and/or fire-rated doors.

As Specified: Ives Hinges, 5BB1HW, Stanley FBB 199, Hager BB1199

.2 Continuous Hinges:
Continuous hinges for exterior doors to be Ives heavy duty edge mount continuous gear type aluminum hinges. Ives aluminum hinges tested and approved to UL 10C (90 minutes). Material 6063-T6 aluminum, clear satin finish (628). Aluminum geared hinges certified to ANSI 156.26 Grade 1. Hinge length to suit door height. Hinge length 25mm (1") less door height.

Supply as Specified: Ives 112XY series

.3 Locksets/Deadlocks/Privacy Sets:
Extra heavy duty residential, commercial, institutional and industrial applications. Latch bolts to be steel with minimum ½" throw deadlocking on keyed functions. ¾" throw anti-friction latchbolt on pairs of fire doors. Provide manufacturer's standard wrought box strike for each latch or lock, with curved lip extended to protect frame. Locks and latchsets tested to exceed 8,000,000 cycles.

Supply as Specified: BEST 9K series

.4 Overhead Door Stops/Holders:
Heavy Duty Surface Mounted:
Surface overhead stops/holders to be stainless steel base, non-handed for single-acting doors with a heavy-duty channel/slide-arm design and offset jamb bracket to allow for simple field modifications of functions. Channel to be surface mounted to the door with thru bolts and the jamb bracket is surface mounted to the frame soffit.

Supply as Specified: Glynn-Johnson 90 series

.5 Door Closers:
Door closers to have the following features
- Fully hydraulic, rack and pinion action with high strength cast iron cylinders and one piece forged steel pistons.
- Include high efficiency, low friction pinion bearings.
- Hydraulic fluid of a type requires no seasonal adjustments, ULTRA X TM fluid has constant temperature control from -35 degrees Celsius to +49 degrees Celcius.
- Hydraulic regulation controlled by tamper-proof, non-critical screw valves, adjustable with a hex wrench.
- Separate adjustments for backcheck, general speed and latch speed.
- Door closers with special template (ST-) numbers include required associated product, information sheets and instructions
- Size 1 manual door closers to provide less than 5 pounds opening force on a 900mm door leaf.
- Door closer with Pressure Relief Valves are not accepted.

- Door closer bodies, arms, covers to be powder coated
- Closers with powder coat finishes to exceed a minimum 100-hour salt spray test, as described in ANSI A156.18 and ASTM B117.
- Closers detailed with plated finishes to include plated covers (or finish plates), arms and visible fasteners.

Heavy Duty Mechanical (Multiple Applications):
Non-sized (1-6) and non-handed cast iron cylinder body to have 1 1/2" piston diameter with 3/4" journal double heat-treated pinion shaft with 5/8" full complement bearings. XP closer hydraulic regulation controlled by tamper-proof, non critical screw valves, abrasion resistant Vitron "O" ring, adjustable with a hex wrench. Closer to have "FAST" Power Adjust speed dial to show spring size power. Track closers non-sized 1-4. Closers to have forged steel main arm and forearm, forged steel main arm and forearm EDA and SP CUSH type arms. For push side applications supply special template ST-3068.

Supply as Specified: LCN 4040XP series

Heavy Duty Electric Operator:
Two in one swing door auto door operator, cUL listed for fire door applications.
- Provisions for separate conduits to carry high and low voltage wiring in compliance with the National Electrical code.
- Push 'n go permits non-switch activation
- Electromechanical unit with microprocessor control
- Tested internally to over ten million cycles
- Certified by cUL for use on labeled doors.
- Adjustable hold open period of 2 to 30 seconds in automatic or manual mode
- Push applications

Supply as Specified: Horton 7900 series c/w key switch keyed alike

.6 Door Pulls/Flatware/Coat Hooks:
Hospital Door pulls, CBH 375, provide hospital pulls cut for cylinders/deadbolts as specified flatware to be of stainless steel material, .050 gauge.
CBH 903 T304 SMS mounting, 150mm high, (Kickplates 40mm less door width single door and 25mm less door width double doors)

.7 Wall Stops:
Wall Stops (No Button on Locking Hardware):
Wall stops to be constructed of stainless steel base with special retainer cup that makes the rubber stop tamper resistant. Convex design of rubber bumper.

Supply as Specified: Ives WS407CVX

Wall Stops (Projecting Button on Locking Hardware):
Wall stops to be constructed of stainless steel base with special retainer cup that makes the rubber stop tamper resistant. Concave rubber bumper to avoid damage to locks with projecting buttons.

Supply as Specified: Ives WS407CCV

.8 Smoke Seals:
Supply as Specified: KN Crowder W-21 (head/jamb seal)

.9 Electric Strikes/Power Supplies:
Electric Strikes:
Grade 1, electric strikes to be cUL listed burglary-resistant and electric strike for fire doors and frames. A label for single doors and B label for double doors. Electric strikes to be stainless steel construction, non-handed available in 12V or 24V AC or DC with continuous duty solenoid and accept ¾" throw latchbolts. Strike box to be adjustable to compensate for any misalignment of the door or frame with two piece plug connector for ease of installation.

Supply as Specified: Von Duprin 6000 series

Power Supplies:
Power supplies to be tested and certified to meet UL294. Universal 120-240 VAC input, low voltage DC output, regulated and filtered. Power supplies to have 2A, 4A, 6A output,12/24VDC field selectable with jumper. Provide emergency release terminals, where required, that allow the release of devices upon activation of the fire alarm system complete with fire alarm input for initiating "no delay" exiting mode. Power supply to be flat mounting design and polarized locking connections for additional option boards specified.

Supply as Specified: Schlage Electronics PS-902, PS-904, PS-906

Molex Connectors:
Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with sufficient number and wire gauge with standardized Molex plug connectors to accommodate electric function of specified hardware. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

Junction Box:
Provide high quality NEMA 1, junction box to provide convenient installation for electrified hardware. Units are surface mounted 254mm high, 254mm wide, 152mm deep and includes hinged door with twist turn lock, 20 position terminal strip to accept 24 to 12 gauge wire.

Supply as Specified: Von Duprin JB7

Electric Washroom Accessories:
Provide electric washroom accessories to compete the installation of automatic door operators for universal and barrier free washroom requirements

Supply as Specified: Camden - Actuators CM-46/4
Camden – Mounting Box CM-43CBL

2.3 FINISHES

.1 Unless otherwise specified, finishes to be brushed chrome (BHMA 626/652). Finishes are specified as follows:

ITEM	BHMA#	DESCRIPTION	BASE MATERIAL
Hinges	630	satin stainless steel	stainless steel
Hinges	652	satin chrome plated	steel
Continuous Hinges	689	anodized aluminum	aluminum
Lock Trim	626	satin chrome plated	brass/bronze
Exit Devices	630	satin stainless steel	stainless steel
Door Closer	689	powder coat aluminum	steel
Door Pulls	630	satin stainless steel	stainless steel
Protective Plate	630	satin stainless steel	stainless steel
Door Stops/Holders			
Overhead	630	satin stainless steel	stainless steel
Wall/Floor	626	satin chrome plated	brass/bronze
Thresholds	628	anodized aluminum	aluminum
Weatherstrip	628	anodized aluminum	aluminum

2.4 CYLINDERS, KEYING SYSTEMS AND KEY CONTROL

.1 Permanent BEST interchangeable core cylinders supplied by the owner.
.2 Provide colour coded temporary construction keying system during construction period. The Owner or Owner's Security Agent will void the operation of the construction keys.

PART 3 – EXECUTION

3.1 EXAMINATION

.1 Ensure that doors and frames are prepared and reinforced to receive finish hardware prior to installation.
.2 Ensure that door frames and finished floor are plumb and level to permit proper engagement and operation of hardware.
.3 Submit in writing a list of deficiencies determined as part of inspection required in 3.1.1 and 3.1.2 to supervising consultant prior to installation of finished hardware. Correct door frame installation before proceeding with finish hardware installation.

3.2 INSTALLATION

.1 Hardware Installers must have a minimum of five (5) years' experience in installation of hardware.
Provide verification of installer's qualification to Consultant for approval. Installers to attend review meetings conducted by the hardware distributor.

.2 Install hardware at mounting heights as specified in the manufacturer's templates or specific references in approved hardware schedule or approved architectural elevation drawings.

.3 Where mounting height is not otherwise specified, install hardware at mounting heights as indicated in 1.5.1, 1.5.2.

.4 Install hardware using only manufacturer supplied and approved fasteners in strict adherence with manufacturers published installation instructions.

.5 Ensure locksets / latchsets / deadlocks are of the correct hand before installation to ensure that the cylinder is in the correct position. Handing is part of installation procedure.

.6 Ensure that exit devices are of the correct hand and adjust device cam/drive screw for proper outside trim function prior to installation. Handing is part of installation procedure.

.7 Follow manufactures installation instructions. Adjustment of door closers is inclusive of spring power, closing speed, latching speed and back-check, valve screws to achieve backcheck (4040, 4040XP series) at the time of installation.

.8 Adjust delayed action door closers to forty (40) second delay for barrier free accessibility and movement of materials. Time period to be approved by Owner.

.9 Install head seal weatherstrip prior to installation of soffit mounted hardware. Trim, cut and notch thresholds and saddles neatly to minimally fit the profile of the door frame. Install thresholds and saddles in a bed of caulking completely sealing the underside from water and air penetration.

.10 Counter sink through bolt of door pull under push plate during installation.

.11 Install blocking material of sufficient type and size in cavities of metal and wood stud walls and partitions. Located concave and convex type door bumpers at the appropriate height to properly contact protruding door trim.

.12 Turn over existing hardware demolished/removed to TLDSB.

3.3 FIELD QUALITY CONTROL

.1 Verify each door leaf opens closes and latches. Inspect fire rated openings to ensure they are installed in compliance with NFPA 80 requirements. Test access control system and electrified hardware devices for proper operation, owner to sign off on verification of operation. Verify electric door release hardware operates properly upon activation of the fire alarm system.

.2 Perform bi-monthly on-site inspections during hardware installation and provide inspection reports listing progress of work, unacceptable work and corrective measures. Repair or replace as directed by the Consultant.

.3 Before completion of the work but after the hardware has been installed, submit a certificate to the architect stating that final inspection has been made and that hardware has been checked for installation and operation by a technician from the manufacturer and hardware consultant.

3.4 ADJUSTING AND CLEANING

.1 Check and make final adjustments to each operating item of hardware on each door to ensure proper operation and function.
.2 Adjust doors with self-closing devices or automatic closing devices for operation after the HVAC system is balanced and adjusted. Adjust spring power of non sized door closers to close and latch the door.
.3 Hardware to be left clean and free of disfigurements.
.4 Instruct owner personnel in the proper operation, adjustment and maintenance of hardware.

3.5 PROTECTION

.1 Protect hardware from damage during construction. Wrap locks, panic hardware, and fire exit hardware, door pull trim with kraft paper or plastic bubble materials to protect finish from damage until date of substantial completion. Remove and reinstall or where necessary, use temporary hardware to maintain finish in new condition and maintain manufacturer's warranty.

3.6 HARDWARE GROUPS

.1 The following attached hardware schedules have been prepared by Allegion Canada Inc.:
  .1 Spruce Glen Public School (1 page)
  .2 Archie Stouffer Elementary School (1 page)
  .3 Dunsford District Public School (1 page)
  .4 Leslie Frost Public School (1 page)
  .5 LCVI (1 page)

END OF SECTION

ARCHIE STOUFFER ELEMENTARY SCHOOL

HARDWARE GROUP NO. AS-001

FOR USE ON MARK/DOOR #(S):
AS-01 AS-02

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 114X114MM	652	IVE
1	EA	VANDL CLASSROOM LOCK	ND94BD RHO	626	SCH
1	EA	PERMANENT CYLINDER	BEST - BY OWNER		BST
1	EA	SURFACE CLOSER	4040XP SCUSH ST-3068	689	LCN
1	EA	KICK PLATE	CBH 903 150 X SIZE TO SUIT		CBH

DUNSFORD DISTRICT PUBLIC SCHOOL

HARDWARE GROUP NO. DD-001

FOR USE ON MARK/DOOR #(S):
DD-01

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 114X102MM	652	IVE
1	EA	VANDL STOREROOM LOCK	ND96BD RHO	626	SCH
1	EA	PERMANENT CYLINDER	BEST - BY OWNER		BST
1	EA	SURFACE CLOSER	4040XP SCUSH ST-3068	689	LCN
1	EA	KICK PLATE	CBH 903 150 X SIZE TO SUIT		CBH

HARDWARE GROUP NO. DD-002

FOR USE ON MARK/DOOR #(S):
DD-02 DD-03

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 127X114MM	652	IVE
1	EA	VANDL CLASSROOM LOCK	ND94BD RHO	626	SCH
1	EA	PERMANENT CYLINDER	BEST - BY OWNER		BST
1	EA	FIRE/LIFE CLOSER	4040SE WMS MOUNT PUSH SIDE	689	LCN
1	EA	KICK PLATE	CBH 903 150 X SIZE TO SUIT		CBH
1	EA	WALL STOP	CBH 140		CBH
1	SET	WEATHERSTRIP	W-21 (1 X DR W, 2 X DR H)	628	KNC
1	EA	TRANSFORMER	4040SE-3210		LCN

NOTE: ELECTRICAL CONTRACTOR TO INTERFACE FILRE/LIFE CLOSER WITH F/A PANEL.

LESLIE FROST PUBLIC SCHOOL

HARDWARE GROUP NO. LS-015

FOR USE ON MARK/DOOR #(S):
LS-01

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 127X114MM	652	IVE
1	EA	VANDL STOREROOM LOCK	ND96BD RHO	626	SCH
1	EA	INTERFACE BOX	JB7		VON
1	EA	PERMANENT CYLINDER	BEST - BY OWNER		BST
1	EA	ELECTRIC STRIKE	6211 FSE CON	630	VON
1	EA	AUTO OPERATOR	7900 C/W INTERGAL ON/OF BUTTON		HOR
2		ILLUMINATED ACTUATOR	CM-45/4/FGR/SFE1		CAM
1	EA	AURA PUSH TO LOCK	CM-45/8/FGR/SFE1		CAM
1	EA	KICK PLATE	CBH 903 150 X SIZE TO SUIT		CBH
1	EA	WALL STOP	CBH 140		CBH
1	SET	WEATHERSTRIP	W-21 (1 X DR W, 2 X DR H)	628	KNC
1	EA	ADVANCED LOGIC RELAY	CX-33		CAM
1	EA	DOOR POSITION SWITCH	1076D		GES
1		EMERGENCY CALL KIT	CX-WEC10K2		CAM
1	EA	POWER SUPPLY	PS902 900-8F-FA	LGR	SCE

LCVI

HARDWARE GROUP NO. LINDSAY-001

FOR USE ON MARK/DOOR #(S):
LINDSAY-01 LINDSAY-02

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 127X114MM	652	IVE
1	EA	VANDL CLASSROOM LOCK	ND94BD RHO	626	SCH
1	EA	PERMANENT CYLINDER	BEST - BY OWNER		BST
1	EA	FIRE/LIFE CLOSER	4040SE WMS MOUNT PUSH SIDE	689	LCN
1	EA	KICK PLATE	CBH 903 150 X SIZE TO SUIT		CBH
1	EA	WALL STOP	CBH 140		CBH
1	SET	WEATHERSTRIP	W-21 (1 X DR W, 2 X DR H)	628	KNC
1	EA	TRANSFORMER	4040SE-3210		LCN

NOTE: ELECTRICAL CONTRACTOR TO INTERFACE FILRE/LIFE CLOSER WITH F/A PANEL.

HARDWARE GROUP NO. LINDSAY-002

FOR USE ON MARK/DOOR #(S):
LINDSAY-03

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 127X114MM	652	IVE
1	EA	VANDL STOREROOM LOCK	ND96BD RHO	626	SCH
1	EA	PERMANENT CYLINDER	BEST - BY OWNER		BST
1	EA	SURFACE CLOSER	4040XP SCUSH ST-3068	689	LCN
1	EA	KICK PLATE	CBH 903 150 X SIZE TO SUIT		CBH
1	SET	WEATHERSTRIP	W-21 (1 X DR W, 2 X DR H)	628	KNC

1 General

1.1 RELATED WORK

.1 Section 01031 Alteration Procedures
.2 Section 07900 Sealants
.3 Section 09900 Painting

1.2 REFERENCE STANDARDS

.1 Do work in accordance with CSA A82.31-M1980 except where specified otherwise.

2 Products

2.1 Gypsum Board

.1 GWB 1 -Gypsum Wallboard Plain: to CSA A82.27-M1977, type and thickness noted, 1200mm wide, maximum practical length, ends square cut, edges tapered.
.2 GWB 2-Gypsum Wallboard Fire Rated :Type X, as approved by authorities having jurisdiction for required fire ratings in assemblies indicated; to CSA A82.27-M1977, type and thickness noted, 1200mm wide, maximum practical length, ends square cut, edges tapered.
.3 GWB 3 -Gypsum Sheathing at shower ceilings with ceramic tile finish: DensGlas Gold by Georgian Pacific or GlasRoc by Certainteed

2.2 FASTENINGS, ADHESIVES AND COMPOUNDS

.1 Wallboard Screws: Self-drilling, self-tapping gypsum wallboard screws, length to suit application.
.2 Joint Compound:
  .1 Durabond '90' as supplied by Canadian Gypsum Co. or approved alternate shall be used for first two coats of corner beads, "J" moulds, casing beads, laminating gypsum board and for filling larger voids and gaps.
  .2 Standard Joint Compound: to CSA A82.31-M1980, asbestos free, as approved for use by the board manufacturer and the authority having jurisdiction over fire rated assemblies.
.3 Joint Tape: For standard gypsum board, strong cross laminated fibre tape as recommended by gypsum board manufacturer.

2.3 ACCESSORIES

.1 Corner Bead: Zinc coated steel sheet, minimum 0.023" overall thickness coating Z275 (25 gsg), V-shaped designed for finishing with joint compound, minimum width of flanges 1 1/8"(29 mm) or 1/2"(12.7 mm) thick wallboard and 1 1/4" (32 mm) for 5/8" (15.8 mm) thick wallboard. Model D-100 Corner Bead, as manufactured by Bailey Metal Products.

.2 Edge Trim: Zinc coated steel sheet, minimum 0.023" overall thickness, zinc coating Z275 (25 gsg), L-shaped designed for finishing with joint compound. Model D-200 Edge Trim, as manufactured by Bailey Metal Products.
.3 Reveal Trim: Zinc coated steel sheet, minimum 0.023" overall thickness, zinc coating Z275 (25 gsg), Z-shaped designed for finishing with joint compound. Model D-300 Reveal Trim, 12.7mm reveal, as manufactured by Bailey Metal Products.

2.4 METAL FURRING AND SUSPENSION SYSTEMS

.1 Metal furring runners, hangers, tie wires, inserts, anchors: to CSA A82.30-M1980, galvanized.
.2 Drywall furring channels: .02" core thickness galvanized steel channels for screw attachment of gypsum board.

2.5 SOUND ATTENUATING INSULATION

.1 Mineral fibre batts: to CSA A101-M1983, Type 1, thickness indicated to completely or partially fill cavities in interior partitions, 400 and 600 mm wide batts, fibreglass, as manufactured by Johns Mansville, Fiberglass Canada, or approved alternative.

3 Execution

3.1 SUSPENDED AND FURRED CEILINGS

.1 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with CSA A82.31-M1980 except where specified otherwise.
.2 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
.3 Install work level to tolerance of 1:1200.
.4 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles, etc.
.5 Install furring channels parallel to, and at exact locations of steel stud partition header track.

3.2 CEILING BULKHEADS

.1 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
.2 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.

3.3 WALL FURRING

.1 Install wall furring for gypsum board wall finishes in accordance with CSA A82.31-M1980, except where specified otherwise.

.2 Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
.3 Furr duct shafts, beams, columns, pipes and exposed services where indicated.

3.4 GYPSUM BOARD APPLICATION

.1 Do not apply gypsum board until bucks, anchors, blocking, electrical and mechanical work are approved.
.2 Apply gypsum board to metal furring or framing using screw fasteners. Maximum spacing of screws 200 mm o.c.
.3 Apply gypsum board to concrete block surfaces, where indicated, using laminating adhesive.
.4 Apply 12.7 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts, in partitions where perimeter sealed with acoustic sealant.
.5 Construct Fire assemblies where indicated, and as detailed. Ensure the integrity of the specified fire separation.

3.5 ACCESSORIES

.1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm o.c. using contact adhesive for full length.
.2 Install casing beads around perimeter of suspended ceilings.
.3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
.4 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.
.5 Install column covers and associated supporting stud assemblies in locations shown on drawings. Erect plumb and true.
.6 Sound attenuating insulation: install sound attenuating insulation full height in all stud cavities where partitions specified to be insulated. Carefully fill all voids. Pay special attention to filling around pipe, outlet box or other wall penetration.

3.6 CONTROL JOINTS

.1 Construct control joints of preformed units set in gypsum board facing and supported independently on both sides of joint.
.2 Provide continuous polyethylene dust barrier behind and across control joints.
.3 Locate control joints at changes in substrate construction at approximate 9000 mm spacing on long corridor runs and at approximate 15000 mm spacing on ceilings.
.4 Install control joints straight and true.

3.7 ACCESS DOORS

.1 Install access doors to electrical and mechanical fixtures specified in respective Sections.
.2 Rigidly secure frames to furring or framing systems.

3.8 JOINT TREATMENT

.1 Standard Gypsum Wallboard:
  .1 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
  .2 Finish corner beads, control joints, joints in column covers, and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
  .3 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
  .4 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
  .5 Fill and tape joints of gypsum board located above finished ceilings. Do not fill screw heads.
.2 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

END OF SECTION

1 General

1.1 DESCRIPTION

.1 Work included:
  .1 Taping and filling of cementitious tile backer board
  .2 Supply and installation of ceramic floor & wall tile.
  .3 Grouting and cleaning of ceramic floor &wall tile.
.2 Related work specified elsewhere:
  .1 Section 09250 Gypsum Board- Tile backer board installation.

1.2 REFERENCE STANDARDS

.1 Do tile work in accordance with Specification Guide 09 30 00 Tile Installation Manual 2006-2007 produced by Terrazzo Tile and Marble Association of Canada (TTMAC), except where specified otherwise.

1.3 SAMPLES

.1 Submit samples of each colour, texture, size, and pattern of tile.
.2 Adhere tile samples to plywood and grout joints to represent project installation.

1.4 MAINTENANCE MATERIAL

.1 Provide minimum 2% of each type and colour of tile required for project for maintenance use. Store where directed.
.2 Maintenance material to be of same production run as installed material.

1.5 ENVIRONMENTAL CONDITIONS

.1 Maintain air temperature and structural base temperature at ceramic tile installation area above 12 C for 48 h before, during, and 48 h after, installation.

2 Products

2.1 TILE

.1 Tile Material and Finish (refer to drawings and room finish schedule for locations and quantities):

.1 Tile

.1 Porcelain Floor Tile & Base:

.1 PCT1: Field Floor – 150mm x 610mm porcelain floor tile (anti-slip): "Rock series Grigio (grey)" by Olympia Tile. Including 100mm wall base to match.

.1 PCT2 – 50 x 50 porcelain floor tile: "Quebec Series – Unglazed Mosaic - Quebec (anti-slip) – Black Fleck FS" by Olympia Tile

.2 Ceramic Wall Tile:

.1 CT1: Field Wall Tile – 100mm x 400mm gloss finish ceramic wall tile: "CDC- Arctic White Bright" by Olympia tile

.2 CT2: Accent Wall Tile – 100mm x 400mm gloss finish ceramic wall tile: "CDC – Turquoise Bright" by Olympia Tile

.3 CT3: Accent Wal Tile – 100mm x 400mm gloss finish ceramic wall tile: "CDC – Sapphire Bright" by Olympia Tile

.2 CT11: Accent Tile – 100 x 400 gloss finish ceramic wall tile: "CDC – Sterling Grey Bright" by Olympia Tile

.3 Glass Wall Accent Tile:

.1 CT4: Accent Wall Tile – Glass tile Silver Spring Blend (C134) by American Olean

.2 CT5: Accent Wall Tile – Glass tile Sand Storm Blend (C133) by American Olean

.3 CT6: Accent Wall Tile – Glass tile Fountain Blue (C108) by American Olean

.4 CT7: Accent Wall Tile – Glass tile Dusk (C110) by American Olean

.5 CT8: Accent Wall Tile – Glass tile Sea Pearl Blend (C128) by American Olean

.6 CT9: Accent Wall Tile – Glass tile Blue Moon Blend (C130) by American Olean

.7 CT10: Accent Wall Tile – Glass tile Powder (C109) by American Olean

2.2 MORTAR, ADHESIVE MATERIALS AND ACCESSORIES

.1 Tile Backer Board Joint Tape: minimum 50mm wide coated fibreglass mesh tape, self adhesive.

.2 Latex Modified Thin Set Mortar: :C-Crylic 200 with Permabond (Premium Mix over concrete substrate) and/or Multicure (Modified System) by C-Cure, Kerabond mixed with Keralastic by Mapei, Laticrete 272 Mortar with Laticrete 333 Super Flexible Additive or approved alternate.

.3 Wall finishing edge protection: Stainless Steel "Rondec" by Schluter.

.4 Control joints: "DILEX-BWB by Schluter

2.3 GROUT AND WATERPROOF MEMBRANE

.1 Wall Tile Grout: unsanded dry set, coloured: Laticrete 600 Series/1776 or equivalent by Flextile. Colour(s) of grout to be selected by Consultant from full range of standard colours.

.2 Floor Tile Grout: presanded coloured latex grout: Laticrete 500 Series/1776 or equivalent by Flextile: colours selected by consultant from full range of standard colours

.3 Shower Room Wall and Floor Tile Grout: 100 Flex- epoxy grout by Flextile; colours selected by consultant from full range of standard colours

.4 Shower Room Wall and Floor Tile Waterproofing: Schluter Kerdi Waterproofing Membrane

.5 Inside corners of wall tile to have a bead of caulking applied that matches the grout colour.

3 Execution

3.1 PREPARATION

.1 All surfaces shall be free of debris, dust, oil and grease.
.2 Commencement of work shall be considered acceptance of surface condition.

3.2 TAPING AND FILLING

.1 Prefill all joints in cementitious backer board with tile setting adhesive and then immediately embed tape and level joints.
.2 Alternatively, apply tape first and then apply tile adhesive over tape forcing adhesive through tape to completely fill and level all joints.

3.3 WORKMANSHIP

.1 Apply tile to clean and sound surfaces.
.2 Fit tile around corners, fitments, fixtures, drains and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even.
.3 Maximum surface tolerance 1:800.
.4 Make joints between tile uniform and approximately 1.5 mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation. Align patterns.
.5 Lay out tiles so perimeter tiles are minimum 1/2 size.
.6 Sound tiles after setting and replace hollow- sounding units to obtain full bond.
.7 Make internal angles square, external angles rounded.
.8 Use round edged tiles at termination of wall tile panels, except where panel abuts projecting surface or differing plane.
.9 Install divider strips at junction of tile flooring and dissimilar materials.
.10 Allow adhesive to fully set before grouting.
.11 Clean installed tile surfaces after installation and grouting cured.

3.4 GROUTING AND CAULKING

.1 Conform to manufacturer's recommendations for grout installation.
.2 Fill all joints firmly with grouting compound and carefully finish up all joints to dense waterproof finish flush with surface.
.3 Do not grout control or expansion joints. Leave open and clean for sealant.
.4 Remove excess grout from tiles immediately. Do not use acids or metal tools.
.5 Joints between tiles shall be without voids, cracks or excess grout.

3.5 ADJUST AND CLEAN

.1 On completion of work, replace defective or misaligned tiles.
.2 Make good skips, voids or excess grout.
.3 Clean finished surfaces as recommended by the tile manufacturer and TTMAC after grout has set and cured.
.4 Remove all excess materials and rubbish entirely from the site.
.5 Do not apply silicone type sealer without specific approval of Consultant.

END OF SECTION

1 General

1.1 SAMPLES

.1 Submit full range of available samples of acoustical panels to the Consultant for selection prior to ordering.

1.2 MAINTENANCE MATERIALS

.1 Supply 5% extra lay-in panels of each type specified, for future repairs and place where directed by the Consultant. Provide letter from Owner's representative acknowledging receipt of this material.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Deliver materials in their original wrappings or containers with manufacturer's labels and seals intact and store in a dry area under cover and clear of the ground.
.2 Ship grid members and mouldings in rigid crates and avoid damage. Bent or deformed material will be rejected.

1.4 FIRE RATED CEILING COMPONENTS

.1 Where acoustical ceiling components noted below are required to be part of the fire resistance rating of the roof assembly, ensure that the specific requirements of the applicable UL/ULC listing are met. Existing components of the roof assembly (to remain) include open web steel joists and metal roof deck.

2 Products

2.1 SUSPENSION SYSTEMS

.1 Hangers: minimum 2.8 mm ($^{7}/_{64}$") overall thickness, zinc coated to Z265.
.2 Grid - Main and Cross Tees and Edge Moulding: double webbed, hot dipped galvanized cold rolled steel construction, prefinished white cap, "Prelude 15/16 Fire Guard" by Armstrong Ceilings or approved equal.

2.2 LAY-IN CEILING PANELS

.1 General:
  .1 Flame Spread: 25 or less
  .2 Smoke Developed: 50 or less
  .3 Sizes: as indicated on reflected ceiling plan drawings
  .4 Thickness: 16mm (5/8") minimum.
.2 Lay-in tile shall be mineral fibre composition, medium textured, washable, white, “763D Georgian square lay-in tile”, with square edge by Armstrong Interiors or approved alternate.

3 Execution

3.1 INSTALLATION - GENERAL

.1 Do not install acoustical panels and tiles until work above ceiling has been inspected by Consultant.
.2 Co-ordinate ceiling work to accommodate components of other Sections, such as light fixtures, diffusers, speakers, sprinkler heads, to be built into acoustical ceiling components.
.3 Install acoustic ceilings using tradesmen skilled in this class of work, in strict accordance with manufacturer's instructions and as specified herein.
.4 Neatly and symmetrically fit and run suspended ceiling to true lines, evenly balance in all areas to pattern shown on the Drawings or as directed.
.5 Recessed items shall replace or be centered on acoustical panels, except where indicated otherwise. Consult with mechanical and electrical trades to co-ordinate the work.
.6 Space hangers for suspended ceilings to support the grillage independent of walls, columns, pipes, and ducts at maximum 1200mm (4'-0") centre along the support grillage and not more than 150mm (6") from ends. Provide additional hangers at light fixtures and ducts. Attach hangers to the overhead structure by hanger clips. Bend top of hangers at right angles, turn down and securely fasten. Turn bottom of hangers upwards and securely wrap three times.
.7 Provide written confirmation to Divisions 15 and 16, when requested by the Consultant, that the suspended ceiling is capable of supporting the additional weight of the lighting fixtures, ducts and other mechanical and electrical fixtures required by Divisions 15 and 16.
.8 Level the suspended system with a maximum tolerance of 3 mm(1/8") over 3600 mm(12'-0").
.9 Use the longest practical lengths of tees, furring and running channels to minimize joints. Make joints square, tight, flush and reinforced with concealed splines. Assemble framework to form a rigid and interlocking system.
.10 Design suspension system to accommodate movement caused by thermal expansion or contraction.
.11 Design space hangers and carrying members to support the entire ceiling system, including lighting fixtures, diffusers, and equipment openings in locations shown on Drawings.
.12 Use edge moulding where ceiling abuts vertical surface.
.13 Use corner moulding along external edges at ceiling steps.
.14 Space main tees to suit ceiling plan on drawings, both sides of light fixture rows and maximum 1200mm (4'-0") o.c.
.15 Set cross tees at right angles to main tees to suit ceiling plan.

3.2 INSTALLATION - EXPOSED TEE GRID SYSTEM

.1 Join abutting sections of main tees by means of suitable connections such as splices, interlocking ends, tab locks, pin locks.
.2 Intersection tees shall form a right angle.
.3 Butt ends of cross tees flush to exposed edge of intersecting member.
.4 Provide edge moulding at intersection of ceiling and vertical surfaces.
.5 Provide hold-down clips on all lay-in panels in areas where differential air pressure occurs and within 6000mm of an exterior door.

END OF SECTION

1 General

1.1 DESCRIPTION

.1 Work Included:
  .1 Vinyl Composite Tile Flooring
  .2 Rubber Base
  .3 Transition strips
.2 Related Work Specified Elsewhere:
  .1 Section 07900 - Sealants

1.2 SUBMITTALS & MOCK-UPS

.1 Submit duplicate samples of complete colour range of products including flooring transition strips.
.2 Submit written installation instructions directly from the manufacturer for each product specified.
.3 Construction of vinyl sheet/vinyl safety flooring incorporating mock-up clamping ring floor drains and to show flash coved base at inside and outside corners and dissimilar flooring transitions.

1.3 MAINTENANCE DATA

.1 Provide maintenance data for all resilient flooring for incorporation into Operation and Maintenance Manual as per TLDSB requirements.

1.4 MAINTENANCE MATERIALS

.1 Deliver 2% of each colour, pattern and type flooring material required for this project for maintenance use. Identify each box. Store where indicated by Owner. Review with Owner all maintenance materials and obtain Owner's signature for receipt of same.
.2 Maintenance materials to be same production run as installed materials.

1.5 ENVIRONMENTAL REQUIREMENTS

.1 Maintain air temperature and structural base temperature at flooring installation area above $20^{O}C$ for 48 hours before, during and for 48 hours after installation.
.2 Do not install the flooring until the concrete floor has been properly curved for a minimum of 30 days and the moisture content complies to flooring manufacturer's recommendations.
.3 Check delivered materials before cutting or installing for the product type, colour, size dye lot, and any visual defects which may affect the finished product.

1.6 WARRANTY

.1 Contractor shall warranty the work of this Section against defects in material and workmanship for a period of 2 years.

.2 In addition to the preceding, the safety floor manufacturer shall warrant safety floor free of defects in material for a period of 5 years.
.3 Warranties shall provide project specifics and be in the name of the Owner.

2 Products

2.1 MATERIALS

.1 VCT - Vinyl composition tile: to CSA A126.1-1984, Type "A" 3.2 mm gauge, 305 x 305 mm size, filler shall be non-asbestos.
  .1 Manufacturer: Supply tile from one of the following manufacturers:
    .1 Armstrong Excelon – 51839 Fortress White
  .2 Colour and texture shall be selected by Consultant from manufacturer's complete range, including, solids, mottled etc.; to a maximum of four base colours/textures for the project.
  .3 Location: Bracebridge Kitchen
.2 RB - Rubber Base: coved vulcanized rubber base, 102mm high x 3.0mm thick, colour black. Manufactured by American Biltrite (Amtico), Finercraft, Johnsonite or approved alternate.
.3 RSF -Slip-Resistant Sheet Vinyl: to ASTM F1303-2, Type 2, Grade 1, Class A moisture resistant backing 2.5mm thick
  .1 Manufacturer:
    .1 Altro Reliance 25: Slip Resistance D .81 / W .89, Thickness: 2.5 mm; Roll Width: 2 m; Roll Length: 20 m, Roll Weight: 275 lb (125 kg).
  .2 Colour: "Temple" D2509
  .3 Accessories:
    .1. Vinyl welding rod: Acceptable material: Altro weld rod
    .2 Cove former: Acceptable material, sized to suit application: Altro Cove former [20R – 24 mm radius] [38R - 45 mm radius].
    .3 Gulley edge: Acceptable material, vinyl, sized to suit application: Altro Gulley Edge [GA 35/25] [GE 35RE] [GE 25RE].
    .4 Cap strip: Acceptable material, sized to suit application, [Vinyl] [stainless steel]:Altro Cap Strip [C4] [C5] [C8] [C11].
    .5 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.
    .6 Metal edge strips: Aluminum extruded, smooth, [mill finish] stainless steel with lip to extend over flooring.
    .7 Adhesives
      1. Ecofix 20- Hard set for heavy rolling loads
      2. Ecofix 25- Acrylic general adhesive
      3. Altrofix 30- 2 part polyurethane for areas prone to moisture
      4. Altrofix 31- 2 part polyurethane fast set adhesive
.4 Primers and adhesives not otherwise specified: waterproof, recommended by resilient flooring manufacturer for specific material on applicable substrate, above, at or below grade.
.5 Sub-floor filler and leveller: as recommended by flooring manufacturer for use with their product.
.6 Subfloor Leveler/Transition Strips: PVC tapered transition strips as manufactured by Johnsonite, A.D.A. compliant (i.e. barrier free design), thickness to suit and make smooth transition to adjacent

floor types, colour and type as later selected by Consultant from manufacturer's full range, maximum 6 colours.

3 Execution

3.1 GENERAL

.1 Install all flooring products in strict accordance with manufacturers written recommendations.
.2 If specifications herein contradict or otherwise fail to comply with manufacturers recommendations, do not proceed, notify Consultant and await directions.

3.2 INSPECTION

.1 Ensure concrete floors are clean, and dry, less than 3% moisture content, by using test methods recommended by Flooring manufacturer.
.2 Commencement of flooring installation shall be deemed to be acceptance of the substrate provided.

3.3 SUB-FLOOR TREATMENT

.1 In general, prepare all subfloors to meet the specific recommendation of the manufacturer or supplier of the product to be installed. Notify product distributor of the commencement of the installation to allow review of the preparation and installation by the distributor.
.2 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler as recommended by flooring manufacturer.
.3 Clean floor and apply filler; trowel and float to leave smooth, flat hard surface. Prohibit traffic until filler cured and dry.
.4 Prime seal concrete sub-floor to flooring manufacturer's printed instructions.
.5 Dry vacuum entire area immediately prior to application of adhesive.

3.4 VINYL TILE APPLICATION

.1 Trowel apply adhesive uniformly in accordance with flooring manufacturer's instructions. Do not spread more adhesive than can be covered by flooring before initial set takes place.
.2 Lay flooring with joints parallel to building lines to produce symmetrical pattern. Border tiles shall be minimum half tile width.
.3 Install flooring to square grid pattern with continuous joints flowing with direction of mottle with pattern grain parallel for all units and parallel to width of room.
.4 As installation progresses, and after installation, roll flooring with 45 kg minimum roller to ensure full adhesion.
.5 Cut tile and fit neatly around fixed objects.
.6 Terminate flooring at centerline of door openings where adjacent floor finish or colour is dissimilar.
.7 Install joint strips at edges where flooring butts dissimilar flooring.

3.5 RUBBER BASE APPLICATION

.1 Layout base to keep number of joints at minimum.
.2 Seal joint between wall construction and finish floor in all washrooms and kitchens prior to base application, in accordance with Section 07900 - Sealants.
.3 Set base in complete bed of adhesive tightly by using 3 kg hand roller, against solid wall and floor surfaces.
.4 Install straight and level to variation of 1:1000.
.5 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames.
.6 Cope internal corners. Use manufacturers recommended mitering procedures for outside corners, avoid joints within 300mm of outside corner. Use formed straight base material for external corners of other angles.
.7 Where base scheduled in an area, install on all columns, pilasters, fitments, millwork and fixtures unless otherwise noted.
.8 Joints in a straight run must be more than 1200mm apart.

3.6 SLIP RESISTANT SHEET VINYL APPLICATION

.1 Wood Subfloors: Confirm wood subfloors meet the following requirements.
  .1 Must conform to ASTM F-1482 Standard Guide to Wood Substrates.
  .2 Wood subfloors shall have a minimum 45.7 cm of cross-ventilated space beneath the bottom of the joist. The floor must be rigid, free of movement.
  .3 Single wood and tongue and groove subfloors shall be covered with a minimum 6.4mm, 9mm or12.7 mm APA approved underlayment plywood as follows.
  .4 Use 6.4 mm thick underlayment panels for boards with a face width of 76 mmor less.
  .5 Use 12.7 mm thick underlayment panels for boards with a face width wider than 76mm.
  .6 Do not install directly on OSB (Oriented Strand Board), particleboard, chipboard, luan or composite type panels unless specifically designed and approved by the panel manufacturer for use as a resilient flooring underlayment.
.2 Installation:
  .1 Reliance 25 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 flooring in accordance with recommended procedures will void the Altro Limited Product Warranty.
  .2 Coved Installation: Where Altro 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.

3.7 CLEANING AND WAXING

.1 Remove excess adhesive from floor, base and wall surfaces without damage.

.2 Clean, seal and wax floor and base surface to flooring manufacturer's instructions.

.3 Safety flooring shall be washed with a mild detergent and vacuumed dry. Do not seal or wax safety flooring.

3.8 PROTECTION OF FINISHED WORK

.1 Protect new floors from after initial waxing until final inspection.

.2 Prohibit traffic on floor for 48 hours after installation.

END OF SECTION

1 General

1.1 RELATED WORK

.1 Read carefully all other Sections of the Specification to determine the extent of prime and finish coats applied by other Sections.

1.2 SAMPLES

.1 Prepare and submit samples of various finishes for Consultant's approval, at least thirty days before materials are required. Submit samples in triplicate on 300mm x 300mm (12"x12") material. Identify each sample as to job, finish, formula, colour name, number, sheen name and gloss values, date and name of Contract and Sub-Contractor.

1.3 LIST OF MATERIALS

.1 A list of materials proposed for use on the work, prepared by the paint manufacturer, shall be submitted in writing to the Consultant for approval at least 60 days before the materials are required. The list shall bear the manufacturer's official certification that the materials listed thereon are the best quality made by the company.

1.4 PRODUCT, DELIVERY, STORAGE AND HANDLING

.1 Deliver materials to Site in their original containers with labels intact, and store in spaces directed by the Consultant. Keep stored materials covered at all times and take necessary precautions against fire.
.2 Provide CO2 fire extinguisher of minimum 9 kg capacity in storage area.
.3 Maintain storage enclosure at a minimum temperature of 10^{O}C.

1.5 JOB CONDITIONS

.1 Environmental Conditions: Do not paint or finish in unclean or improperly ventilated areas. Do not paint in temperatures lower than 10^{O}C or varnish in temperatures lower than 19^{O}C.
.2 Protection:
  .1 Provide metal pans or adequate tarpaulins to protect floors in areas assigned for the storage and mixing of paints.
  .2 Use sufficient drop cloths and protective coverings for the full protection of floors, furnishing and work not being painted. Protect mechanical, electrical and special equipment, hardware, all other components of the building which do not require painting, from paint spotting and other soiling during the painting process.
  .3 Leave above areas clean and free from evidence of occupancy upon completion of painting.
  .4 Protect paint materials from fire and freezing.
  .5 Keep waste rags in metal drums containing water and remove from building at end of each working shift.

1.6 QUALITY ASSURANCE

.1 All work of this section will be completed by skilled workers with a minimum of 5 years experience.
.2 Paint manufacturer will provide consultation services which will include:
  .1 Pre-installation Site Meeting: confirmation of materials and procedures and review of substrate preparation.
  .2 Site Visits: during installation to confirm compliance with specifications and standards. Provide written report to Consultant.

2 Products

2.1 MATERIALS

.1 Paint Varnish, stain, enamel, lacquer, and fillers shall be of a type and brand herein specified and listed under "Paint Product Recommendations" as listed in the latest version of the Master Painter's Institute (MPI) Manual for specific uses.
.2 Paint Materials such as linseed oil, shellac, turpentine, thinners etc, and any of the above materials not mentioned herein but required for the work with the finish specified shall be highest quality product of an approved manufacturer.
.3 Paint materials for each coating formulae to be top line products of a single manufacturer.

2.2 FINISH SCHEDULE

.1 General:
  .1 Refer to Paint Material Standards specified herein.
  .2 Finish all exposed, non-prefinished materials/surfaces, as indicated on Room Finish Schedule and as described hereunder.
  .3 Exposed means visible in the complete work. In the case of closets, cabinets and drawers it includes their interiors.
  .4 In instances where materials specified are not suitable for a particular job application or are contrary to manufacturer's recommendations for use on a particular surface, such condition shall immediately be brought to the attention of the Consultant for clarification and instructions.
  .5 Finishes shall match approved samples, but Consultant reserves the right to make reasonable changes to finish specifications to obtain desired results without additional cost or obligation to the Owner.
  .6 Paint gloss is defined as the sheen rating of applied paint in accordance with MPI values.

MPI Gloss Level	Description	Units @ 60 degrees	Units @ 85 degrees
G1	Matte/flat	0 to 5	10 maximum
G2	Velvet	0 to 10	10 to 35
G3	Eggshell	10 to 25	10 to 35
G4	Satin	20 to 35	35 minimum
G5	Semi-gloss	35 to 70	-
G6	Gloss	70 to 85	-
G7	Gloss, high	85 and higher	-

.7 A colour chart giving colour schemes and gloss values for various areas will be prepared after tendering by Consultant. The final selection of colours and surface textures of all finishes throughout and whether finishes are transparent (natural) or opaque (paint) shall rest solely with the Consultant.

.8 Do not paint baked enamel, chrome plated, stainless steel, aluminum or other surfaces finished with a final factory finish. All primed surfaces shall be finish painted under this Section. Exception: Paint pre-finished mechanical grilles where directed by the Consultant.

.9 Paint all miscellaneous metal, door frame, doors, mechanical and electrical items which are not prefinished.

.2 Interior Finishes: the following specifications apply to the finishing of all surfaces required to be painted or varnished or sealed, as indicated on Room Finish Schedule. All finishes shall comply with MPI's "Premium Grade" to the MPI "Finish System Code" listed. Previously painted surfaces are assumed to be finished with alkyd based paint. Apply transition primer coating as specified. Utilize only Low Odour/Low VOC products.

.1 Gypsum Wallboard
Institutional Low Odour / Low VOC
MPI Interior Finish System #9.2M – G3

.2 Gypsum Wallboard Ceilings
Institutional Low Odour / Low VOC
MPI Interior Finish System #9.2M – G1

.3 Steel Doors and Frames
Institutional Low Odour / Low VOC
MPI Interior Finish System #5.3N – G5

.4 Miscellaneous Ferrous Metals
Institutional Low Odour / Low VOC
MPI Interior Finish System #5.1S – G5

.5 Concrete Block
Institutional Low Odour / Low VOC
MPI Interior Finish System #4.2E – G5

.6 Epoxy Finish (gypsum wallboard)
Epoxy "Tile Like"
MPI Interior Finish System #9.2E – G5

.7 Epoxy Finish (concrete block)
Epoxy "Tile Like" – over epoxy block filler
MPI Interior Finish System #4.2G – G5

.8 Epoxy Finish (Structural Steel)
MPI Interior Finish System #5.1Y – G5

.3 Exterior Finishes: the following specifications apply to the finishing of all surfaces required to be painted or varnished or sealed. All finishes shall comply with MPI's "Premium Grade" to the MPI "Finish System Code" listed.

.1 Miscellaneous Ferrous Metals (non-galvanized)
Waterborne Light Industrial
MPI Exterior Finish System #5.1M – G3

3 Execution

3.1 INSPECTION

.1 Conditions of Surfaces
- .1 Check all surfaces with electric moisture meter and do not proceed if reading is higher than 12-15%, without written permission from the Consultant.
- .2 Proceed with work only when surfaces and conditions are satisfactory for production of a first class job.
- .3 Remove dust, grease, rust and extraneous matter from surfaces (except that rust occurring on items specified to be primed under other Section shall be removed and work reprimed under those Sections).
- .4 A representative of the product manufacturer will inspect the surfaces to be painted prior to application, arrange for such inspection and provide written report to the Consultant.

3.2 PREPARATION

.1 Concrete
- .1 Prepare concrete to CGSB standard 85-GP-32M
- .2 Test surfaces for alkalinity with pink litmus paper or other recognized method.
- .3 Where extreme alkalinity occurs, wash surface with 4% solution tetrapotassium prophosphate 30g per 1L of water where latex base paint is to be used and with zinc sulphate solution 300g per 1L of water where other paint bases are to be used.
- .4 Etch normal concrete surfaces to receive alkyd paint with muriatic acid solution (1 part commercial 31.45% to 3 parts water).

.2 Metal
- .1 Clean unpainted and shop painted metal, remove loose rust and prime bare metal with zinc chromate primer. Feather out edges to make touchup patches inconspicuous.
- .2 Steel components scheduled to receive epoxy coating are to be prepared in accordance with S.S.P.C.-SP-6, Standard for Commercial finish.

.3 Galvanized Surfaces
- .1 Phosphate galvanized metal surfaces using CGSB-31-GP-116 pretreatment or prime with galvanized metal primer.

.4 Woodwork
- .1 Prepare wood surfaces to CGSB 85-GP-1M.
- .2 Inspect millwork to assure surfaces are smooth, free from machine marks and that nail heads have been countersunk. Seal all knots and sapwood in surfaces to receive paint, with a sealer compatible with finish specified to CGSB 1-GP-126M-Amdt-Jul-78..
- .3 Sand smooth all woodwork which is to be finished and clean surfaces free of dust before applying first coat. In the case of painted woodwork, fill nail holes, splits and scratches with non-shrinking filler after first coat is dry. When these occur on a surface to receive a transparent finish, use putty tinted to match local grain condition. Between coats, sand lightly with No. 100 sandpaper and remove dust.
- .4 Ensure all gaps between trim members and adjacent construction are fully sealed in accordance with Section 07900.

.5 Hardware

.1 Remove finish hardware, electric plates and accessories, mask any that are not removable. Replace these when paint is dry and clean them. Do not clean hardware with solvent that will remove permanent lacquer finish.

.6 Gypsum and Cementitious Wallboard

.1 Inspect to ensure joints are properly filled and sanded smooth. Fill small nicks or holes with patching compound and sand smooth.

.2 Prepare wallboard surfaces to CGSB 85-GP-32M.

.7 Previously Finished Surfaces:

.1 Repaint existing surfaces where they are scheduled to be painted or where finish is damaged by alteration work. Extend new paint finish over full height and/or width of area affected, to a straight line in location determined by Consultant.

.2 All existing surfaces to be repainted shall receive as many coats of new paint, as required to hide existing finish.

.3 Materials used for repainting shall be of equivalent quality to those specified for new work, but in each case shall be compatible with finishes to which they are applied.

.4 Where compatibility of new coating with existing surface is uncertain, apply test patch of approximately 0.5 m² and check for results.

.5 Prepare existing surfaces to be repainted as follows:

.1 Clean as required to remove dirt, dust, oil, grease, lose paint, rust and any other foreign matter which would prevent proper bonding of new finish.

.2 Peeled, chipped, scratched and otherwise damaged surfaces shall be filled, sanded and repaired as required to provide consistent surface with texture matching that of adjacent area.

.3 Clean off bubbled, cracked, peeling or otherwise defective paint by stripping with suitable environmental strippers or by burning. Do not burn off paints suspected of having lead content. Treat residue from stripping as Hazardous Waste.

.4 Sand glossy surfaces to uniform dull texture.

.6 Treat bare areas as specified for new work.

.7 Refinish existing components where indicated. Completely remove existing paint finish by chemical and/or mechanical means and sand smooth to achieve “as new” substrate condition, ready to receive new finish.

3.3 APPLICATION

.1 Finish and number of coats specified are intended to cover surfaces completely. If they do not, apply further coats until complete coverage is achieved, as required.

.2 Any area exhibiting incomplete or unsatisfactory coverage shall have the entire plane painted. Patching will not be acceptable. Paint entire plane of areas which have been cut and patched.

.3 Spraying will not be allowed unless specified herein or recommended by paint manufacturer. Obtain prior approval of Consultant.

.4 Arrange to have traffic barred from completed areas, wherever possible.

.5 Apply materials in strict accordance with manufacturer's directions and specifications and be familiar with those directions and specifications.

.6 Prime woodwork designated for painting as soon as possible after woodwork is delivered to site. Prime all surfaces of such woodwork, whether exposed or not, before installation. Back prime woodwork which is to receive transparent finish with one coat of transparent finish reduced 25%.

.7 Prime wood doors, re-seal all cut edges of wood to be painted or finished, if the material was cut subsequent to initial sealing. Seal the tops and bottom of wood doors with minimum 3 coats of sealer.
.8 Apply primer-sealer coats by brush or roller method. Permit paint to dry before applying succeeding coats, touch up suction spots and sand between coats with No. 100 sandpaper.
.9 Apply primer coats to ferrous metal surfaces that have not received a shop coat of primer.
.10 Touch up shop primed metal work after loose paint and scale have been removed.
.11 Where two coats of the same paint are to be applied, tint the first coat to differentiate from the final coat.
.12 Exterior paints shall be factory tinted to require colours.
.13 Apply final coats on smooth surfaces by roller or brush. Hand brush wood surfaces.
.14 Paint shall be uniform in sheen, colour and texture, free from brush or roller marks, sags, runs or other defects.

3.4 FIELD QUALITY CONTROL

.1 Locate testing area in building to establish standard workmanship, texture, gloss and coverage where designated.
.2 Apply samples of all finished on each type of surface to be coated with correct material, number of coats, colour, texture and degree of gloss required.
.3 Retain test areas until completion of work. Use approved work in test areas as standard for corresponding work throughout building. Correct and refinish work which does not compare with approved finishes.

END OF SECTION

1 General

1.1 RELATED WORK

.1 Section 10800 Toilet and Bath Accessories - Supply of Toilet and Bath accessories

1.2 REFERENCES

.1 Comply with the most recent versions of the following standards:
- .1 ASTM A167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
- .2 CAN3-A172 High Pressure Paper Base, Decorative Laminates.
- .3 CSA O121 Douglas Fir Plywood.
- .4 CSA O151 Canadian Softwood Plywood.
- .5 CAN3-O188.1 Interior Mat-Formed Wood Particleboard.
- .6 CSA O112 Series CSA Standards for Wood Adhesives.
- .7 CAN/CGSB-71.20 Adhesive, Contact, Brushable.

1.3 SAMPLES

.1 Submit samples in accordance with Section 01330 - Submittals.
.2 Submit duplicate 300 x 300 mm samples of panel showing colour finish on both sides, two finished edges and core construction.
.3 Submit duplicate representative samples of each hardware item, including brackets, fastenings and trim.

1.4 SHOP DRAWINGS

.1 Submit shop drawing in accordance with Section 01300 - Submittals.
.3 Indicate fabrication details, plans, elevations, hardware, and installation details.

1.5 MAINTENANCE DATA

.2 Provide maintenance data for plastic laminate for incorporation into manual specified in Section 01300 - Submittals.

1.6 PROTECTION

.1 Protect finished laminated plastic surfaces during shipment and installation. Do not remove until immediately prior to final inspection.

1.7 WARRANTY

.1 Provide manufacturer's written warranty covering all plastic components and hardware against breakage, corrosion and delamination for 15 years from Substantial Performance. 15 (fifteen) years from date of Substantial completion.

2 Products

2.1 PARTITIONS

.1 All solid plastic material to be constructed of high density polyethylene resins pressed under high pressure to form a single component. Colour to be selected by Consultant from manufacturer's standard colour range.

.2 Headrail: extruded aluminum rail, anti-grip profile, clear anodized finish, fabricated with internal channel to accept shower curtain hooks. Headrail shall be provided complete with shower curtain and shower curtain hooks to suit opening width where indicated on drawings.

.3 Hardware:

.1 Hinges:

.1 Integral Hinge

.2 Heavy duty, self lubricating.

.2 Material/finish: anodized aluminum or stainless steel.

.3 Swing: as indicated.

.4 Return movement: adjustable self closing.

.5 Emergency access feature.

.2 Latch set: surface mounted anodized aluminum or stainless steel, emergency access feature.

.3 Wall and connecting brackets: anodized aluminum extrusion or stainless steel.

.4 Pilaster shoe: 1 piece 4" high stainless steel.

.5 Door pull: type suited for outswinging doors, anodized aluminum or stainless steel.

.6 Fasteners: stainless steel tamperproof type screws and bolts.

.7 Hardware of chrome plated "Zamac" is not acceptable.

.8 All brackets to be continuous.

.4 Fabrication:

.1 Doors shall be constructed of 1" (25mm) high density polyethylene. All edges rounded to a 3/16" (4.8mm) radius.

.2 Panels shall be constructed of 1" (25mm) high density polyethylene. All edges rounded to a 3/16" (4.8mm) radius.

.3 Pilasters shall be constructed of 1" high density polyethylene.

.4 Fabricate all partitions in floor mounted / overhead braced configuration. Headrail shall be provided to bridge all compartments and brace the end of freestanding pilasters to the wall.

.5 Acceptable Products:

.1 Bradley Bradmar or approved equal.

3 Execution

3.1 PARTITION ERECTION

.1 Install partitions secure, plumb and square.
.2 Leave 12 mm space between wall and panel or end pilaster.
.3 Anchor fixing brackets to masonry-concrete surfaces using screws and shields: to hollow walls using bolts and toggle type anchors.
.4 Attach panel and pilaster to brackets with through type sleeve bolt and nut.
.5 Provide for adjustment of floor variations with screw jack through steel saddles made integral with pilaster. Conceal floor fixings with stainless steel shoes.
.6 Provide templates for locating threaded studs through finished ceilings.
.7 Equip each door with hinges, latch set, and each stall with coat hook mounted on door. Adjust and align hardware for proper function. Set door open position at 30° to front.
.8 Equip outswinging doors with door pulls.

3.2 OVERHEAD BRACED FLOOR SUPPORTED PARTITIONS

.1 Secure pilasters to floor with pilaster supports anchored with minimum 50 mm penetration in structural floor. Secure overhead bracing from pilaster to pilaster and back to walls.
.2 Level, plumb and tighten installation with leveling device.
.3 Secure pilaster shoes in position.
.4 Set tops of doors level with tops of pilasters when doors are in closed position.

END OF SECTION

1 General

1.1 SHOP DRAWINGS

.1 Indicate size and description of components, base material, surface finish inside and out, hardware and locks, attachment devices, description of rough-in frame, building-in details of anchors for grab bars

2.0 Products

2.1 MATERIALS

.1 Sheet steel: commercial quality to ASTM A526-80, with ZF001 designation zinc coating.
.2 Stainless steel sheet metal: to ASTM A167-82, Type 304 with polished finish.
.3 Stainless steel tubing: Type 304 commercial grade, seamless welded, thickness indicated.
.4 Fasteners: concealed screws and bolts hot dip galvanized, exposed fasteners to match face of unit. Expansion shields fibre, lead or rubber as recommended by accessory manufacturer for component and its intended use.

2.2 FINISHES

.1 Chrome and nickel plating: to ASTM B456-79 polished finish.
.2 Stainless steel: to AISI No. 4 stain lustre finish.
.3 Baked enamel: condition metal by applying one coat of metal conditioner to CGSB 31-GP-107M, apply one coat Type 2 primer to CGSB 1-GP-81M and bake, apply two coats Type 2 enamel to CGSB 1-GP-88M and bake to hard, durable finish. Sand between final coats. Colour selected from standard range by Consultant.
.4 Manufacturer's or brand names on face of units not acceptable.

2.3 FIXTURES

.1 Supply and Install unless otherwise indicated. Refer to 3.4 Location and Quantity for accessory schedule.
.2 Grab Bars (GB): B6000 series by Bobrick, 38 mm outside diameter x 1.6 mm wall tubing, Type 304 stainless steel with No. 4 finish, wall flanges secured to wall mounting flanges with stainless steel set screws, concealed screw attachment, flanges welded to tubular bar, provided with steel back plates and all accessories. Knurl/peen bar at area of hand grips. Grab bar material and anchorage to withstand downward pull of 2.2 kN. Provide the following grab bars as indicated:
    .1 Type 1 (GB1): 760 mm x 760 mm 'L' shaped
    .2 Type 2 (GB2): 610 mm long
    .3 Type 3 (GB3): 305 mm long
    .4 Type 4 (GB4): '900 mm x 900 mm 'L' shaped
.3 Henkel Hook (HH): HenkelHook - Safety Release Coat Hook: Colour - grey
.4 Fixed Tilt Mirror (MIR): model code B-293 2436 by Bobrick, 610mm wide x 915mm high fixed tilt mirror with 6mm tempered glass mirror, No. 4 finish, stainless steel frame.

.5 Fixed Mirror (MIR2): model code B-165 2436 by Bobrick 610mm wide x 915mm high fixed mirror with 6mm tempered glass mirror, No. 4 finish, stainless steel frame.
.6 Fixed Mirror (MIR3): model code B-165 4836 Channel Frame by Bobrick 1220mm wide x 915mm high fixed mirror with 6mm tempered glass mirror, stainless steel frame.
.7 Toilet Tissue Dispenser (TP): supplied by Owner, Installed by contractor.
.8 Soap Dispenser (SD): supplied by Owner, installed by contractor
.9 Hand Towel Dispenser (HTD): supplied by Owner, installed by contractor.
.10 Hand Dryer (HD): supplied by owner, installed by contractor.
.11 Sanitary Napkin Disposal (SND): supplied by Owner, installed by contractor.
.12 Sanitary Napkin Dispenser(SND2): supplied by Owner, installed by contractor.
.13 W.C. Sign (WS1): Refer to drawings for details. Venus sign system by Mirtec with ADA and Braille. Screw mount and anodized aluminum end caps.
.14 Shower Seat (SS): model B-5191 by Bobrick, Type 304 satin finish frame, One-piece, 8mm thick solid phenolic seat.
.15 Recessed Soap Dish (RSD): model B-4380 by Bobrick, Type 304 stainless steel
.16 Robe Hook (RH): model 1150-SS by Frost, front mounted, surface mounted, security clothes hook, wall plate fabricated from 14ga stainless steel, hook 10mm diameter spring loaded stainless steel mounted with swivel trip ball.
.17 Wall Bumper (WB): model 140 by Canadian Builders Hardware, wall mounted, stainless steel, 2 3/8" diameter.
.18 Wall Guard (WG): Xlerator 89W – Anti-Microbial Wall Guard (White) by Excel Dryer.
.19 Backrest (BR): model 1028 by Frost, 32mm stainless steel tube with a 1.6mm wall, concealed fastening, backrest 16mm solid plastic laminate (white).

2.4 FABRICATION

.1 Weld and grind joints of fabricated components flush and smooth. Use mechanical fasteners only where approved.
.2 Wherever possible form exposed surfaces from one sheet of stock, free of joints.
.3 Brake form sheet metal work with 1.5 mm radius bends.
.4 Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.
.5 Back paint components where contact is made with building finishes to prevent electrolysis.
.6 Hot dip galvanize concealed ferrous metal anchors and fastening devices to CSA G-164-M1981.
.7 Shop assemble components and package complete with anchors and fittings.
.8 Deliver inserts and rough-in frames to job site at appropriate time for building-in. Provide templates, details and instructions for building in anchors and inserts.
.9 Provide steel anchor plates and components for installation on studding and building framing.

2.5 MANUFACTURER

.1 Toilet and bath accessories listed in schedule manufactured by Bobrick unless otherwise noted.
.2 Acceptable equivalent accessories: Watrous, Frost, ASL Bradley or approved alternate.

3 Execution

3.1 INSPECTION/PREPARATION

.1 Ensure frames and anchorage provided, whether by this Section or others, is correctly and securely installed ready to accept the accessory designed for it.
.2 Ensure rooms, surfaces and areas in which accessories to be installed are finished with all painting completed and dry.

3.2 INSTALLATION

.1 Install and secure accessories rigidly in place.
.2 Install washroom accessories in accordance with manufacturer's directions where indicated.
.3 Fasteners to be concealed wherever possible and to suit the intended use, compatible with all surfaces, materials encountered.
.4 Secure accessories rigid, square and flush to wall surface.
.5 Fill units with necessary supplies shortly before final acceptance of building.

3.3 INSPECTION AND ADJUSTMENT

.1 Upon completion of installation, adjust all components for proper operation and straight alignment.
.2 Instruct Owner's personnel in adjustment, operation, refilling procedures.
.3 Clean accessories, touch up all scratches and abrasions to be invisible.

3.4 LOCATION AND QUANTITY

Contractor to supply and install unless otherwise indicated. All existing accessories that are being removed and are not identified to be reused are to be turned over to the TLDSB.

.1 Archie Stouffer Elementary School

Girls' and Boys' Washrooms:
- Eight (8) Toilet Paper Dispenser (TP) -install only
- Two (2) Hand Dryer (HD) -install only
- Two (2) Tilt Mirror (MIR)
- One (1) Mirror (MIR2) in Girl's Washroom
- Five (5) Sanitary Napkin Disposal (SND) - install only
- One (1) Sanitary Napkin Dispenser (SND2) -install only
- Two (2) Grab Bar 1 (GB1)
- Two (2) Grab Bar 2 (GB2)
- Two (2) Grab Bar 3 (GB3)
- Four (4) Washroom Signs #1 (WS1 - 2 Boy's & 2 Girls)
- Two (2) Wall Bumpers (WB)
- Two (2) Robe Hook (RH)
- Two (2) Backrests (BR)

.2 Bobcayeon Public School

Girls' and Boys' Washrooms:
- Eight (8) Toilet Paper Dispenser (TP) -install only
- Two (2) Hand Dryer (HD) -install only
- Two (2) Tilt Mirror (MIR)
- One (1) Mirror (MIR2) in Girl's Washroom
- Six (6) Sanitary Napkin Disposal (SND) - install only
- One (1) Sanitary Napkin Dispenser (SND2) -install only
- Two (2) Grab Bar 1 (GB1)
- Two (2) Grab Bar 2 (GB2)
- Two (2) Grab Bar 3 (GB3)
- Four (4) Washroom Signs #1 (WS1 - 2 Boy's & 2 Girls)
- One (1) Wall Bumpers (WB)
- Two (2) Robe Hook (RH)
- Two (2) Backrests (BR)

.3 Dunsford District Public School

Girls' and Boys' Washrooms:
- Nine (9) Toilet Paper Dispenser (TP) -install only
- Two (2) Hand Dryer (HD) -install only
- Two (2) Tilt Mirror (MIR)
- One (1) Mirror (MIR2) in Girl's Washroom
- Six (6) Sanitary Napkin Disposal (SND) - install only
- One (1) Sanitary Napkin Dispenser (SND2) -install only
- Two (2) Grab Bar 1 (GB1)
- Two (2) Grab Bar 2 (GB2)
- Two (2) Grab Bar 3 (GB3)
- Four (4) Washroom Signs #1 (WS1 - 2 Boy's & 2 Girls)
- Two (2) Robe Hook (RH)
- Three (3) Wall bumper (WB)
- Two (2) Backrests (BR)

.4 Leslie Frost Public School

Girls' and Boys' Washrooms:
- Nine (9) Toilet Paper Dispenser (TP) -install only
- Two (2) Hand Dryer (HD) -install only
- Two (2) Tilt Mirror (MIR)
- One (1) Mirror (MIR2) in Girl's Washroom
- Six (6) Sanitary Napkin Disposal (SND) - install only
- One (1) Sanitary Napkin Dispenser (SND2) -install only
- Two (2) Grab Bar 1 (GB1)
- Two (2) Grab Bar 2 (GB2)
- Two (2) Grab Bar 3 (GB3)
- Four (4) Washroom Signs #1 (WS1 - 2 Boy's & 2 Girls)
- Three (3) Wall Bumpers (WB)
- Two (2) Robe Hook (RH)
- Two (2) Backrests (BR)

Universal Washroom:
- One (1) Toilet Paper Dispenser (TP) (reuse)
- One (1) Hand Towel Dispenser (HTD) (reuse)
- One (1) Soap Dispenser (SD) (reuse)
- One (1) Tilt Mirror (MIR)
- One (1) Grab Bar 1 (GB1)
- One (1) Grab Bar 2 (GB2)
- One (1) Robe Hook (RH)
- One (1) Shelf (SH)
- One (1) Washroom Signs (WS1)
- One (1) Wall Bumper (WB)
- One (1) Backrests (BR)

.5 Lindsay Collegiate & Vocational Institute School

Girls' and Boys' Washrooms:
- Nine (9) Toilet Paper Dispenser (TP) -install only
- Two (2) Hand Dryer (HD) -install only
- Two (2) Mirror (MIR3)
- Six (6) Sanitary Napkin Disposal (SND) - install only
- One (1) Sanitary Napkin Dispenser (SND2) -install only
- Four (4) Washroom Signs #1 (WS1 - 2 Boy's & 2 Girls)
- Two (2) Wall bumper (WB)

END OF SECTION