

1. GENERAL

- 1.1. **The General Conditions** of the CCDC2-2008, as amended by the Supplementary Conditions, shall govern the Contract Work.
- 1.2. The General Contractor shall be the prime contractor and shall be totally responsible for completion of the entire project. Employ all required skilled trades and/or subcontractors for the complete work.
- 1.3. Work in this Specification is divided into descriptive Sections which are not intended to identify absolute contractual limits between trades. The Contractor shall be responsible for organizing labour and supply of materials essential to complete the Project in all its parts, and to provide protection of the Work and people and property.

2. SCOPE OF WORK

- 2.1. Refer to Drawings and Specifications for detailed scope of work.
- 2.2. Cash Allowances, Alternate Prices, Separate Prices, Unit Prices as applicable to this Project Work are listed in the Tender Price Schedule attached.
- 2.3. Provide and furnish all labour, materials, equipment and services necessary for the complete and proper execution of the work described in the Contract Documents.
- 2.4. Maintain all work areas secure and safe for occupancy on a daily basis. Verify all security alarm contacts and systems that will be affected by the work. Be responsible to remove where required and reinstall after work is complete. Replace equipment in same place found, and replace where damaged or removal was not possible. Ensure proper operations of entire security system upon completion of work.
- 2.5. Make good all surfaces adjacent to, and affected by, new work.

3. CASH ALLOWANCES

- 3.1. Comply with requirements of CCDC 2 G.C. 4.1 Cash Allowances.
- 3.2. Include the Cash Allowances identified in the Tender Price Schedule in the Contract Price. These allowances shall be expended in whole or in part, when authorized by the Consultant in writing. The unused portion of the Allowances shall be credited to the Owner.
- 3.3. The Contract Price and not the cash allowance, includes the Contractor's overhead and profit in connection with such cash allowance.
No refund of overhead and profit will be expected on any unspent portion of Cash Allowances. Likewise, no overhead and profit will be allowed on total amount by which all Cash Allowances are exceeded.
- 3.4. Expend cash allowance as directed by the Consultant in writing. Allowance will be adjusted to actual cost but no adjustment will be made to Contractor's charges including overhead and profit which are included in the Contract Price.
- 3.5. Cash allowances are designed for work and services deemed to be necessary by the 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 the Contract Documents, it shall be assumed to cover work or services in addition to that included, unless specifically indicated otherwise.
- 3.6. Contractor may be required from time to time, to assist in tendering of certain items of work or services covered by allowance, as directed by Consultant.
- 3.7. Material Supply Items:
 - 3.7.1. Scope for material supply items covered by Cash Allowance includes:

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- 3.7.1.1 Net cost of material.
 - 3.7.1.2 Applicable taxes and duties excluding HST.
 - 3.7.1.3 Delivery to site.

 - 3.7.2 In addition to above scope covered by Cash Allowance include in Contract Price costs for:
 - 3.7.2.1 Handling at site, including unloading, uncrating, storage and hoisting.
 - 3.7.2.2 Protection from elements, from damage.
 - 3.7.2.3 Labour, installation and finishing.
 - 3.7.2.4 Other expenses required to do cash allowance work (i.e. contract co-ordination).
 - 3.7.2.5 Overhead and Profit.

 - 3.8 Material and Installation Items:
 - 3.8.1 Scope of each material and installation item covered by Cash Allowance includes:
 - 3.8.1.1 Net cost of material.
 - 3.8.1.2 Applicable taxes and duties excluding HST.
 - 3.8.1.3 Delivery to site.
 - 3.8.1.4 Handling at site, including unloading, uncrating, storage and hoisting.
 - 3.8.1.5 Labour, installation and finishing.

 - 3.8.2 In addition to above scope covered by Cash Allowance include in Contract Price costs for:
 - 3.8.2.1 Protection from elements, from damage.
 - 3.8.2.2 Overhead and Profit.
 - 3.8.2.3 Other expenses required to do cash allowance work (i.e. contract co-ordination).

 - 3.9 Inspection and Testing Work:
 - 3.9.1 Scope for inspecting and testing covered by Cash Allowance includes:
 - 3.9.1.1 Net cost of testing laboratory services and field inspection.
 - 3.9.1.2 In addition to above scope covered by Cash Allowance include in Contract Prices:
 - 3.9.1.2.1 Overhead and Profit.
 - 3.9.1.2.2 Supply of material tested, patching and completion of work tested.
 - 3.9.1.2.3 Other testing on re-testing work specified in Section 01400.
 - 3.9.1.2.4 Other expenses required to do cash allowance work (i.e. contract co-ordination).
 - 3.9.1.2.5 Applicable taxes and duties excluding HST.

4. EXAMINATION OF WORK SITE

- 4.1. Examine the site and existing building to be fully informed of their particulars as related to the Project Work.
- 4.2. Verify dimensions of completed Work in place before fabrication of Work to be incorporated with it. Ensure that all necessary job dimensions are taken for the proper execution of the work. Assume complete responsibility for the accuracy and completeness of such dimensions.
- 4.3. No claims for extra payment will be paid for extra work made necessary or for difficulties encountered due to conditions of the site which were visible or reasonably inferable from an examination of the site at the time prior to tender closing date and furthermore, failure of the Contractor to visit and examine the site shall be deemed a waiver of all claims for extra payment due to any condition of the site existing prior to tender closing date.
- 4.4. As-found damage: Record by photography and submit evidence to Owner's representative before commencing work, any found damaged surfaces or materials adjacent to new work, and

not included under scope of this new work. Remedial work to any damage, not so recorded, shall be the responsibility of the Contractor.

5. PROJECT CONTROL

- 5.1 **Construction Schedule:** Within 5 working days of issuance of the Purchase Order, the Contractor shall submit to the Owner's Representative a Construction Schedule. Such Schedule shall itemize a complete breakdown of the project timing including submission of shop drawings and, fabrication and installation.
- 5.2 **Drawings and Specifications:** Contractor shall keep in good order on the job, one complete set of all drawings and specifications, including shop drawings and test reports.
- 5.3 **Project Meetings:** Schedule and administer project progress meetings throughout the progress of the work in consultation with the Consultant and the Owner's Representative.
- 5.3.1 The Consultant shall record proceedings and significant decisions taken, and distribute copies of minutes to participants and affected parties not in attendance.

6. COORDINATION OF WORK:

- 6.1 Coordinate Work so that the Work of all trades may be executed as specified, without delay, hindrance, contradiction or ambiguity.
- 6.2 Ensure that each Trade informs the Contractor of construction, substrates, surface and environmental conditions required for the successful execution of his Work, and that these conditions are met in the execution of all Work.
- 6.3 The Contractor shall clean up and remove debris on a daily basis. Under no circumstances shall the Contractor use the school's garbage disposal containers.
- 6.4 Co-ordinate all construction personnel and Trades. Maintain efficient and continuous supervision. Ensure co-operation of workers in laying out the Work.
- 6.5 The Contractor shall be responsible to assign the various parts of the Work to the appropriate Trades and forces and shall not impose upon the Consultant or Owner the duty to arbitrate disputes between the Contractor and the Trades nor shall it relieve the Trades from their responsibility for carefully examining all the Drawings and Specifications and coordinating their work with each other and the Contractor.

7. CONSULTANT'S INSTRUCTIONS, ADDITIONAL WORK AND CHANGES

- 7.1 The Consultant will issue instructions required to verify and correct work. Such instructions shall be binding as part of the specifications.
- 7.2 No extras to the Contract will be paid, and no extra work is to proceed, until a signed change order is issued.
- 7.3 Complete breakdown of labour and material involved, with separate unit prices for each item shall be submitted for extra work or credited work. Submit quotations immediately for comment and approval.

8. COOPERATION

- 8.1 Cooperate with, and assist in coordinating work by Owner's own forces or other contractors engaged by the Owner, in the interest of the school.

9. PERMITS

- 9.1 The general building permit shall be applied for and obtained by the Consultant on behalf of the Owner.

- 9.2 Apply for, secure, and pay for, all other required permits from authorities having jurisdiction, including, and where required, inspection fees and permits.
- 9.3 Be responsible for ensuring that no work whatsoever is undertaken which is conditional on permits, approvals, guarantees, until certain that all conditions necessary to obtain these are met. No time extension will be allowed for delay in obtaining necessary permits.

10. REGULATORY REQUIREMENTS

- 10.1 Nothing contained in the Drawings and Specifications shall be so construed as to be in conflict with any law, by-law or regulation of the municipal, provincial or other authorities having jurisdiction.
- 10.2 Abide by all the requirements of the Municipal Building By-Laws and other amendments thereto, including but not limited to: the Ontario Building Code (Ontario Reg.413/90); Canadian Electrical Code (CEC); CAN/CSA-B44-94 Safety Code for Elevators; CSA-W59-M1989 Welded Steel Construction (Metal Arc Welding); the Occupational Health & Safety Act, Ontario, 1990 (Bill 208); the National Fire Code; the local Municipal Fire Code; and all other applicable Codes and building by-laws having jurisdiction.
- 10.3 Where required under the Occupational Health & Safety Act, engage a Professional Engineer to design formwork and falsework for concrete.
- 10.4 Give all notices, conduct all tests and required inspections, obtain all permits and pay all resulting charges.
- 10.5 Contract forms, codes, specifications, standards, manuals, and installation, application and maintenance instructions referred to in these specifications are of the latest published editions at the date of signing the Contract.

11. WORKMANSHIP & STANDARD OF CONSTRUCTION

- 11.1 Perform Work to equal or exceed minimum standards specified for materials, installation methods, workmanship and construction in the Ontario Building Code, except where additional or more stringent requirements are imposed by jurisdictional authorities, or by the Drawings, Specifications, specified reference standards, and other instructions issued in relation to the Contract Documents for this Project. In case of conflict or discrepancy, the more stringent shall apply.
- 11.2 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 necessary work is such as to make it impractical to produce required results. Any work which is not acceptable to the Owner or Consultant shall be immediately removed and replaced when and where directed. The expense of re-executing this work shall be paid by the Contractor.
- 11.3 Where the Codes or this specification do not provide all information necessary for complete installation of an item, then the manufacturer's instructions for first quality workmanship shall be strictly complied with. Where reference is made to manufacturer's directions, instructions or specifications they shall include full information on storing, handling, preparing, mixing, installing, erecting, applying, or other matters concerning the materials pertinent to their use and their relationship to materials with which they are incorporated.
- 11.4 These specifications are not intended as a detailed description of installation methods, but serve to indicate particular requirements in the completed work.

- 11.5 Wherever in the specifications a material or article is specified by name, there shall be no substitution for the material so specified unless approved in writing by the Consultant beforehand.
- 11.6 Whenever an article or material is specified "or approved equal", it shall be understood that the written approval from the Consultant is required before any substitution is made. The responsibility of satisfying the Consultant whether or not the "equal" is acceptable remains with the Contractor.
- 12. REFERENCE STANDARDS:** Unless the edition date is specified, references to manufacturer's and published codes, standards and specifications are to the latest edition, (revision) approved by the issuing organization, current at the date of this Specification.
- 13. TESTING & INSPECTIONS:** Arrange for inspection of all work by authorities having jurisdiction. Submit final unconditional certificate of approval by inspecting authorities.
- 13.1 Provide Consultant and Owner's Representative 24 hours notice of date when tests will occur.
- 13.2 Do not conceal work until tested and approved.
- 13.3 Re-testing and re-inspections of work found deficient, and costs of making good, shall be paid for by the Contractor.
- 14. DRAWINGS REQUIRED BY AUTHORITIES**
- 14.1 Supply copies of detail drawings for various building components if requested by the Municipal Building Departments, Provincial Agencies and the Local Fire Department.
- 15. DELIVERIES:**
- 15.1 Contractor shall receive all construction deliveries and endeavour to avoid such deliveries bothering the school office. School staff shall not sign for any construction related deliveries.
- 16. PROTECTION OF WORK AND PROPERTY**
- 16.1 **LOADING OF BUILDING:** Do not store materials in building or utilize it for construction purposes in any manner which would exceed design loading on any building element. Temporarily support or strengthen parts of the structure subjected to excessive loads during construction.
- 16.2 New and existing work and materials affected by the alterations shall be protected at all times during construction period. Any damage, soiling and staining occurring from the time the site is turned over to the Contractor until the work is completed will be required to be made good by the Contractor at no additional cost to the Owner.
- 16.3 Protect floor finishes from construction traffic and transport of construction materials and equipment by adequate means. In areas where work is designated to be done adjacent to existing acoustic ceilings composed of lay-in panels in a supporting grid, panels shall be carefully removed to avoid damage and replaced when the work is completed. If existing lay-in panels in a room are damaged or dirty and cannot be matched with new panels, then all the panels in that room shall be replaced at no expense to the Owner.
- 16.4 The existing building shall be maintained weathertight at all times.
- 16.5 Where the school's security system is breached by negligence of the Contractor, the Contractor shall be responsible for any damage or for theft of school property,

- regardless if the area where damage or theft occurred is under his control or not.
- 16.6 Protect by bracing or shoring the Work and its parts from movement and damage until elements are securely anchored and braced to permanent structure and cannot be damaged.
- 16.7 Restrict access by placing barricades or posting guards to unauthorized personnel to areas of the Work being temporarily shored. Unauthorized personnel shall mean the public and anyone not directly concerned with the execution, supervision or inspection of the shoring.
- 16.7 Protection of Off-Site Structures, Surfaces and Trees: The Contractor shall accept all cost and responsibility for any injury or damage to the existing structures, surfaces and trees on the City's property which may be caused by his workforce and his material suppliers.
- 17. CONSTRUCTION SAFETY:**
- 17.1 Include all provisions for construction safety such as fences, barricades, bracing supports, storage facilities, fire protection, ventilation, construction ramps, platforms, runways, ladders, scaffolds, guardrails, all as required by the Construction Safety Act and other jurisdictional authorities.
- 18. SCHOOL SAFETY & SECURITY:**
- 18.1 The Contractor shall understand, and ensure that all Trades understand that student safety is the first priority in all instances.
- 18.2 The building shall remain secure from intrusion at all times. Buildings which have a surveillance system shall have the surveillance system operational at all times. In such cases where the surveillance system must be shut down by the Contractor to effect repairs or other alterations of any description the Contractor shall be to protect the premises outside the school's normal hours of operation.
- 18.3 All personal injury incidents and property damage, no matter how minor, which occur on school property, shall be reported immediately to the school principal.
- 19. ACCESS TO AND DRIVING IN SCHOOL YARDS**
- 19.1 Access to School Yard:** Vehicles shall not enter or be parked in school yards without first obtaining the authorization of the school principal or his/her designate, usually the Chief Caretaker.
- 19.2 Driving in School Yards:** When a vehicle is being driven on the school grounds, the driver shall observe normal safe driving practices consistent with proximity to school zones, and escorted by a designated "flagman" on foot.
- 19.3 No vehicle shall be left unsupervised with keys in the ignition, nor with its engine running
- 20. SCHOOL OPERATION & USE OF EXISTING PREMISES**
- 20.1 The Contractor shall organize his work at the school in cooperation with the Principal, through the Owner's Representative, so that the academic programme of the school is not disrupted. The Contractor shall include in his/her tender price, all costs required to phase or stage the project so that construction does not interfere with normal operations of the school.
- 20.2 In areas where room(s) are required by the school the following day, each room must be ready for occupancy the following morning. All furniture must be in place and the room

- clean and tidy.
- 20.3 Take reasonable measures for the control of noise and dust during operations while the building is in use.
- 20.4 Prevent excessive noises which will be disturbing to school operation. Machine tools which are set up in fixed locations shall be so located as to minimize noise and suitable sound deflectors shall be used if directed by the Consultant. Air compressors and pneumatic hammers shall be used only with the express authorization of the Consultant at times as directed by him. Gasoline welding machines or gasoline driven compressors shall not be used. The Contractor may be requested from time to time to suspend noisy or otherwise objectionable operations during certain functions, should such operations cause undue interference with the said functions. The Contractor will be expected to extend the fullest co-operation and courtesy in such cases.
- 20.5 Parking is available only with the School principal's permission.

21. ASBESTOS CONTAINING MATERIALS (ACM's)

- 21.1 No products, materials or equipment containing asbestos in any form will be permitted to be used on the project.
- 21.2 Prior to any work being done, the Contractor shall review the Asbestos Management Program Manual of each school with the Head Caretaker and determine whether ACM's will be disturbed by project work.
- 21.3 If it is determined by the Contractor that ACM's will be disturbed, the Contractor shall notify the Consultant and Owner's Representative of their findings. The Owner's Representative shall arrange for appropriate remedial action prior to commencement of the project work.
- 21.4 If the Contractor encounters "unexpected" ACM's during the course of demolition of work, he shall temporarily cease such work at once, **immediately** inform Head Caretaker for fan shutdown, and report to the Consultant and Owner's Representative.

22. LIST OF DESIGNATED SUBSTANCES WHICH MAY BE ENCOUNTERED ON THIS PROJECT:

If encountered, handle in accordance with appropriate current legislation made under the Occupational Health & Safety Act, after consultation with the Consultant, and Owner's Representative.

<u>22.1 DESIGNATED SUBSTANCE</u>	<u>PROBABLE LOCATIONS</u>
Asbestos	pipe insulation, ceiling tiles, plaster
Lead	old piping; lead solder joints; old paint finishes.
Silica	in concrete and cement products
<u>22.2 OTHER SUBSTANCES:</u>	
PCB'S	capacitors; light ballasts

23. OWNER SALVAGE FROM ITEMS TO BE REMOVED UNDER THIS CONTRACT.

- 23.1 Provide minimum 5 working days notice to the Owner's Representative prior to removal of any salvage items. Salvaged items will be picked up by Owner forces on site, after removal by the Contractor.
- 23.2 Materials and equipment not designated for salvage shall become the property of the Contractor and shall be promptly removed from site, in accordance with hazardous materials and waste handling requirement.

24. SELECTIVE DEMOLITION AND REMOVAL

- 24.1 Carry out demolition, removal and disposal in strict accordance with provincial and municipal regulations as applicable, the Ontario Building Code, the Occupational Health and Safety Act, and the Construction Act.
- 24.2 Provide all demolition and disposal required to permit the various parts of the Work. Demolish only those portions of the existing building that is made necessary by installation of new Work, unless otherwise specified.
- 24.3 Protect immediate and adjacent surfaces against damage which might occur from falling debris or other cause; do not interfere with use of or safe passage to and from buildings.
- 24.4 Take precautions to guard against movement or settlement of adjacent portions of structure; design, provide and place bracing or shoring as required; be responsible for safety and support of such elements; be liable for any such movement or settlement, any damage or injury caused thereby or resulting therefrom. If at any time safety of any portion of the building appears to be endangered, cease operations, notify Consultant, take precautions to support structure; do not resume operations until permission has been granted. If such movement or settlement of building is caused by negligence or default of Contractor, restore the structural integrity of the structure to the Consultant's design at no extra cost to Owner. When Consultant considers additional bracing or shoring necessary to safeguard or prevent such movement or settlement, install bracing and shoring upon order.
- 24.5 Should any demolition of building commence before any new construction Work, provide and maintain legal and necessary guards, railings, lights, warning signs, morality lights, and watchperson(s) during execution of Work to fully protect all persons and Owner from loss, damage, death or injury through neglect, carelessness or incompetence of Contractor or his employees or condition or handling of materials.
- 24.6 Investigate existing construction exposed by demolition and removal. Report to Consultant all uncovered dry rot, corrosion of structural members, insect and other infestations, dampness, and material deterioration that may adversely affect the structural adequacy, finishing Work, or sanitation of the building. Such deficiencies shall be reviewed by the Owner's Representative, Consultant and Contractor together, to determine if further investigatory demolition is required, and the extent of replacement or treatment that may be indicated.

25. ACCESSIBILITY TO WORK AREAS

- 25.1 Ensure that fitments and other equipment are made up in sections of such size that they may easily be transported in and through the building to the final location without alteration or damage to property.

26. REMOVAL OF EXISTING FURNISHINGS AND FURNITURE.

- 26.1 Before work is commenced in any section of the existing building that is occupied, provide the school principal and Owner's Representative with sufficient notice to make arrangements for removal of furnishings.

27. SCAFFOLDING

- 27.1 Provide suspended platforms and scaffolding in accordance the Ontario Health & Safety Act & Regulations for Construction Projects.
- 27.2 A Professional Engineer registered in the Province of Ontario shall provide stamped and

sealed design drawings and shall inspect and provide written report that platforms and scaffolding erection has been completed in accordance with design drawings prior to use of scaffolding or suspended platforms.

27.3 Promptly remove scaffolding and platforms when no longer required.

28. TEMPORARY FACILITIES

28.1 Hoarding shall be provided to protect school operations from construction activity, secure the work areas, restrict non-authorized personnel from the work areas and to protect the contractor's property.

28.1.1 Hoarding shall meet requirements of the Ontario Health & Safety Act.

28.1.2 Hoarding shall be a minimum of 2400 mm high and consist of chain link fencing, adequately braced

28.2 Throughout the duration of the work, water and power may be taken from existing services in the building. Only the amount of power and water required for the normal and proper execution of the work may be used. Unusual or unwarranted consumption of water and power shall be paid for by the Contractor. The decision of the Owner's Representative on this matter shall be final and binding.

28.3 Arrangements may be made by the Contractor for the use of the school's staff washroom facilities. Under no circumstances shall construction personnel use student washrooms.

29. SHOP INSPECTION

29.1 When any work is being executed off premises, the Consultant shall be notified in reasonable time when and where such work will be ready for review so that if desired, reviews can take place from time to time before delivery. Approvals given because of visual reviews shall not relieve the Contractor of his/her responsibility to ensure the work is in complete accordance with the documents.

30. SUBMITTALS**30.1 Shop Drawings:**

30.2 Submit 8 copies of Shop Drawings. All drawings exceeding 8-1/2" x 11" format shall have a reproducible sepia submitted along with 3 prints.

30.3 The Contractor shall check, sign and make notations he considers necessary on shop drawings before each submission.

30.4 Do not proceed with Work dependent on Shop Drawings until Consultants reviews have been completed.

30.4.1 Keep one copy of each "reviewed" shop drawing at project site at all times.

3.05 Shop drawings which require extensive correction will be sent back for revisions and resubmission, otherwise shop drawings will be sent back with review comments only. Only drawings noted for revision and resubmission need be resubmitted.

30.6 Mock-Ups and Samples:

30.6.1 Submit Mock-ups and samples as specified in each Trade specification

30.6.2 Do not proceed with Work until Mock-ups and samples are approved. Do not install materials that do not match approved samples.

30.7 Record Drawings:

30.8 After award of Contract, the Consultant will provide the Contractor with a hardcopy and

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- electronic PDF of the plans. The Contractor shall maintain, as the work progresses, records of significant changes, revisions, additions and deletions to or from Contract Documents, including accurate location, depth size and type of existing and abandoned utilities and services.
- 30.9 Neatly mark on the hardcopy and electronic PDF, locations of structures, services and similar work not clearly in view, the position of which is required for maintenance, alteration work, and future additions. Do not conceal critical work until its location has been recorded. Utilize shop drawings to record changes to the work.
- 30.10 Contractor shall submit to the Consultant to enter as-built information from marked-up record drawings to an digital format of AutoCAD R14 or later version, on CD-Rom. As-built information to be entered on layers to Owner standard.
- 30.11 Submit marked-up electronic PDF to the Consultant who will transfer updated to the digital drawing file on application for Certificate of Substantial Performance.
- 30.12 **Maintenance and Operating Instructions**
- 30.12.1 Instruct Owner's representatives in the proper operation and maintenance of equipment.
- 30.12.2 Provide 1 (one) hardcopy and 3 (three) electronic PDF copies on CD/DVD of Maintenance Manuals and Operating Instructions. Manuals to be delivered to the Owner's Representative office at time of application for Substantial Performance.
- 30.12.3 Data shall be contained in "D-ring" binders with soft vinyl covers. Binders shall have clear plastic pocket at back of spine containing identification label "*OPERATION AND MAINTENANCE MANUAL*", and the project name and volume number, if applicable. All data shall be typewritten or neatly printed on A4 size (8.5"x11").
- 30.12.4 Data shall be assembled in systematic order, generally following the specification format. Provide celluloid covered tabs fastened to hard paper dividers to identify different sections.
- 30.12.5 Provide the following data as applicable to the work of this Contract:
- 30.12.5.1 List of Contents; cross-referenced to each Volume.
- 30.12.5.2 Complete list of Contractor, Subcontractors and suppliers, indicating name, address, telephone & fax numbers, email addresses, name of contact person and description of work done.
- 30.12.5.3 Complete list of products used in the work, indicating product name and manufacturer for each listing.
- 30.12.5.4 Copy of Finish Hardware List, complete with all amendments and revisions, if applicable.
- 30.12.5.5 Schedule of paints and coatings. Include sufficient explanation to fully identify each surface with the applicable paint or coating used. Enclose copy of Colour Schedule.
- 30.12.5.6 All "reviewed" shop drawings.
- 30.12.5.7 Maintenance instructions for all finished surfaces.
- 30.12.5.8 Brochures and cuts of all equipment and fixtures.
- 30.12.5.9 Operating and maintenance instructions for all equipment.
- 30.12.5.10 All Warranties and Guarantees required by the Specifications for this Work.
- 30.12.6 Refer to Division 15 for more specific mechanical data required beyond the description of this paragraph.
- 30.12.7 Refer to Division 16 for more specific electrical data required beyond the description of this paragraph.

31. FASTENERS

- 31.1 Fasteners for drywall or acoustic ceiling suspension from concrete slabs or beams shall be drilled-in Ramset #3116 TW or equal by Star Expansion Industries, having a holding power of 9.25 KN (2,080 lbs). Fasteners extending into cells of blocks or cores of precast concrete ceilings shall be toggle bolts with eye couplings. Work of each trade shall include necessary fastenings, anchors, inserts, attachment accessories, and adhesives. Where installation is in Work of other Sections locate devices for other trades and cooperate with them as they require.
- 31.2 Install fastenings and anchors to provide anchorage that is permanent and of sufficient strength, and that it will not loosen from vibration or other causes normal to building use. Space anchors within their load limit and shear capacity.
- 31.3 Do not use fastenings of wood plugs or blocking in masonry, concrete or metal construction unless specified or shown on Drawings, or which cause spalling or cracking of material in which installed. Do not use powder-actuated fastening devices unless approved by Architect. Do not use fastenings which will set up electrolytic action between them and other Work with which they are in contact.
- 31.4 Use hot-dipped galvanized steel fasteners and anchors for securing exterior work.
- 31.5 Submit to the Consultant, written confirmation from an independent testing and inspection company that the suspended ceiling system has been designed and installed to support the additional weight of the fixtures and associated wiring, air diffusers and pressure of flexible ducts, in accordance with Bulletin 30-4-3 of the Ontario Hydro Electrical Safety Code. Written confirmation must be certified (stamped) by a Professional Engineer registered in the Province of Ontario.

32. CUTTING, PATCHING AND MAKING GOOD

- 32.1 Generally: Make good all surfaces adjacent to and affected by new work.
- 32.1.1 Where reference is made to "**patch**" or "**make good**" on the Drawings, it shall mean to prepare and refinish all surfaces damaged, marred, replaced, or otherwise remedied, and to match and blend to adjacent surfaces. Junctions of existing to new surfaces shall be made "invisible" in final assembly.
- 32.1.2 Join and make new Work to existing in such a manner that the joint is structurally sound and inconspicuous.
- 32.1.3 Make good existing surfaces, found unfinished or in a "bad state of repair" after removal of existing construction. Make good such surfaces to blend to adjacent surfaces.

33. ALLOWANCE FOR DEFLECTION

- 33.1 Make allowance for deflection of the structure or other components above.

34. DISSIMILAR METALS AND METAL CONTACT

- 34.1 Insulate metals where necessary to prevent electrolytic action and corrosion due to contact between dissimilar metals, and between metals and masonry, concrete or gypsum board. Use Bituminous paint, butyl tape, building paper or other approved means. Use bituminous paint only on aluminum surfaces.

35. MANUFACTURER'S INSTRUCTIONS

- 35.1 Unless otherwise indicated in the specifications, install or erect Products in accordance

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- with manufacturer's instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
- 35.2 Notify the Consultant in writing, of conflicts between the specifications and manufacturer's instructions, so that the Consultant may establish a course of action.
- 35.3 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.
- 36. REPLACEMENT OF DEFECTIVE ITEMS**
- 36.1 The replacement of defective items shall be the responsibility of the installing Trade if the defect is due to faulty manufacture.
- 36.2 The responsibility shall include the complete removal and reinstallation of such items and the making good of the work of all trades involved in such replacement and/or defect at no cost to the Owner.
- 37. PERIODIC CLEANING**
- 37.1 Keep the work premises clean. Promptly, as the work proceeds and on completion, clean up and remove from the premises all rubbish and surplus materials resulting from the work. Remove from finished surfaces foreign materials, droppings, spatters, which would set up or become difficult to remove.
- 38. FINAL CLEANING**
- 38.1 At completion of Contract work, new work to satisfaction of the Owner's Representative. Include cleaning of stains and smudges from all adjacent finished surfaces.
- 38.1.1 Remove all temporary protection. Defects in material and workmanship noted after removal of temporary protection shall be made good before continuation of cleaning operations.
- 39. CLOSE OUT**
- 39.1 Submit Project Data Book, warranties and guarantees, maintenance manuals, record drawings and extra stock.
- 39.2 Demonstration, Inspection and Temporary Use of Equipment: Arrange for a demonstration of systems and operating equipment upon the 100% completion of their installation.
- 39.3 Final Inspection: The Contractor shall advise the Consultant in writing when the project is complete and request an inspection at the earliest opportunity. The Inspection shall be performed by the Consultant, Owner's Representative, and the Contractor and such Sub-Trade as required.
- 39.4 Deficiencies: a list of deficiencies shall be drawn up by the Consultant. The Contractor shall correct the deficiencies and complete the project as expeditiously as possible.
- 39.5 This paragraph is complementary and does not restrict or override other specific requirements noted in the documents.

END OF SECTION