

Part 1. General

1.1 Scope of work

- A. Additional specific scope information may be given in bidding requirement documents which shall be read in conjunction with the following:
- B. The work shall be as defined by the drawings and other contract documents which are intended to provide for and comprise everything necessary for the proper and complete execution of the works, in every part, notwithstanding that every item necessary may not be shown on the drawings nor mentioned in the specification.
- C. Work specifically to be excluded will be marked as "not in contract" or a similar designation.

1.2 Intention

- A. The Contractor shall abide by and comply with the true intention and meaning of the drawings and specifications taken as a whole, and shall not perform any work knowing it involves any errors or omissions, should any exist.
- B. Items mentioned in the specification but not shown on the drawings or vice versa, are to be executed as if occurring in both.
- C. Should any error or discrepancy appear or should any doubt exist or dispute arise as to the true intention or meaning of the drawings or of the specifications, or should any portion of be obscure or ambiguous, the Contractor shall apply to the Engineer's Representative who shall provide a correction or explanation thereof.
- D. All written or figured dimensions shall supersede scaled dimensions.

1.3 The site

- A. The site shall be all the area(s) marked on the site plan, designated for the use of the Contractor, and may temporarily include areas within contract limits off site (e.g. for utility lines) as indicated.
- B. The site is to be maintained throughout the duration of the contract, and debris and waste should not be allowed to accumulate, but should be removed at regular intervals and disposed of in a lawful manner.

1.4 Protection

- A. The Contractor shall take all necessary precautions to adequately protect the site, the works, any existing property, landscaping, features or goods stored

on the site, and all property surrounding the site, from damage arising out of the works.

- B. Any damage arising out of the works should immediately be made good by skilled tradesmen under the employment of the Contractor.
- C. Materials and equipment stored on, adjacent to, or offsite, shall be adequately protected from the weather, damage and theft at all times.

1.5 Overtime

- A. Unless it is otherwise stated in bidding requirement documents, the contract is intended to be performed in normal working hours. Any additional work required to meet contract time limits that the Contractor considers necessary, shall be at his own expense, and shall have the prior written approval of the Engineer's Representative.

1.6 Laws, permits and regulations

- A. The Contractor shall obtain and pay for all licenses and permits, other than the general Building Control permit, and all fees and charges for connecting outside services. He shall comply with all laws, acts, regulations and code requirements applicable to the work.
- B. The Contractor shall notify the relevant officer prior to the permanent covering up of work.

1.7 Use of explosives

- A. Except as may be specifically authorized in writing by the Engineer's Representative, the Contractor shall not allow the use of explosives on the site.
- B. When the use of explosives is authorized, the Contractor will be responsible for obtaining any necessary permits from the Police and any other permits necessary.

1.8 Existing conditions

- A. The Contractor shall cooperate with the occupants of existing buildings to minimize conflict and to facilitate the Owner's use.
- B. The Contractor shall conduct his operations to ensure the least inconvenience to the general public.
- C. Information pertaining to existing conditions has been obtained through investigation and has been gathered with reasonable care, but is not

warranted, and may be of a schematic nature. The Contractor is to verify all levels and dimensions on site prior to ordering or construction.

- D. The Contractor shall be alert to any indication of or evidence of existing conditions not indicated on the drawings. If the Contractor encounters unexpected existing site conditions, he shall take all necessary precautions to minimize damage, and shall notify the Engineer's Representative immediately, including during the bidding period.

1.9 Emergency arrangements

- A. The Contractor shall, during the period of the Contract, maintain arrangements whereby he can quickly call out labour outside normal working hours for work required to maintain safety to persons or property. The Contractor shall, prior to commencing the works, supply the Engineer's Representative with the name, address and telephone number of a contact who shall be responsible for organising emergency work. Such work shall be put in hand immediately upon the request of the Engineer's Representative.
- B. Claims for additional time or costs for emergency arrangement will be dealt with under the relevant Section of the contract.
- C. Should the Contractor fail to deal with such emergency work as it arises, the Engineer's Representative shall be at liberty to engage others to carry out the work and the Owner may recover the costs attributable thereto from the Contractor.

1.10 Noise and nuisance

- A. The Contractor shall employ the best practicable means to meet the Public Health Act and the Health and Safety Requirements to minimise the noise and vibration resulting from his operations, and shall have regard to current standards.
- B. The Contractor shall ensure that all vehicles, plant and machinery are fitted with effective exhaust silencers, and are operated to minimise noise emissions.
- C. Only 'sound reduced' compressors or other approved alternatives are to be used. Any pneumatically operated percussion tools shall be fitted with approved mufflers or silencers which shall be kept in good repair.
- D. Any machinery which is in intermittent use shall be shut down in intervening periods of non-use or, where this is impracticable, throttled back to a minimum.

1.11 Burning of trash

- A. The Contractor shall not burn trash or other material for disposal on or adjacent to the site. All trash and debris shall be removed from site and disposed of lawfully, unless otherwise stated.

1.12 Making good

- B. The Contractor shall make good all work disturbed to match the existing work, unless directed otherwise by the Engineer's Representative.

Part 1. **General**

1.1 Definition

- A. A unit price is an amount proposed by the Contractor and stipulated in the Schedule of Rates (If requested) as a price per unit of net measurement for a described item of work
- B. Unit prices shall be inclusive of all necessary costs of materials, labour, equipment, establishment charges, overheads and fees including all insurances, taxes, freight, duties and other miscellaneous charges.
- C. Unit prices are to be for in-place (net) measured quantities and therefore shall include allowances for waste, bulking factors, handling, fixings etc., and shall be for work of a character and quantity envisaged under the contract.

1.2 Use

- A. Only one unit price shall be given for each item required; add/omit rates for the same item will not be entertained.
- B. Unit prices shall be the first option used in valuing variations both additions to, and deductions from, the Contract Sum, by Change Order where the quantities of the work required by the Contract Documents are amended.
- C. Where the nature or character of work differs from that described in a Unit price, the Unit price shall form the basis of the valuation.
- D. Fair rates shall be used for the valuing of variations where Unit prices are not applicable.
- E. Day work or cost / charge shall only be used for valuing variations which are incapable of being measured and priced.
- F. The Contractor's unit prices and other cost information will be treated confidentially and used only for the assessment of tenders and for the administration of the contract should the tender be accepted. Schedules will be returned to unsuccessful bidders if requested.

1.3 Bills of Quantities

Part 1. Where Bills of Quantities are used, the terms and method of measurement will be defined in the bidding documents

Part 1. **General**

1.1 Form of application

- A. As soon as practicable after being notified of selection for the award of the Contract, the Contractor shall furnish in writing to the Engineer's Representative an itemised cost breakdown of the various trades and sections which comprise the contract, totalled to equal the contract sum: this analysis to be used as a basis for Progress Payment applications.
- B. The cost breakdown shall be, and if not objected to by the Engineer's Representative before the first Progress Payment will be deemed to be, a true reflection of the costs (including overhead and fee) to the Contractor of the respective elements in the contract sum.

1.2 Frequency of application

- A. Payments will be made at the frequency indicated in the Appendix to the Conditions of Contract as indicated on the Bid Form.

1.3 Effect of progress certificates

- A. The inclusion of any value against an item in a Progress Payment is not of itself conclusive evidence that any work, materials or goods to which it relates are in accordance with the Contract or Specification.

1.4 Materials or goods not yet incorporated into the works

- A. The Engineer's Representative will only certify payment for materials or goods not yet incorporated into the works that are on or adjacent to the site always provided that the materials or goods are in accordance with the contract, adequately protected from the weather and other casualties, and have not been prematurely delivered to site.
- B. Under exceptional circumstances, payment may be made for materials or goods stored off-site. When this is the case such materials or goods, in addition to other requirements, shall be covered by insurance and properly identified as belonging to the project.
- C. The Contractor shall furnish original suppliers' (except in-house supply) invoices etc. to substantiate material and shipping costs and customs duties, and payments will be net (i.e. excluding overhead and fee).

1.5 Retention

- A. The Owner may deduct and retain, an amount calculated as a percentage (at a rate stated in the Appendix to the Conditions of Contract as indicated on the Bid Form) of the total value of work included for payment under the contract.

- B. Following the issue of the Certificate of Substantial Completion, the retention percentage deductible shall be reduced to a rate stated in the Appendix to the Conditions of Contract. The reduced rate shall be a minimum dependent on the extent of defective or incomplete work
- C. Substantial Completion means the acceptance by the Owner and the Department of Planning and other regulatory agencies of the works as being suitable for occupation, and the approval by the Owner of the Contractor's written list (known as the deficiencies or punch list) of items to be completed during the Warranty Period.
- D. During the Warranty Period, retention in excess of the minimum will be released to the Contractor on rectification of defects with the balance due released on Final Payment

1.6 Issue of certificate

- A. The Engineer's Representative shall, within 7 days of receiving an application for payment, issue a certificate to the Owner for such amount as he determines to be properly due, stating in writing to the Contractor his reasons for any amounts withheld.
- B. No progress payment certificate will be issued for a total amount less than BDA\$10,000.00, unless otherwise stated in bidding requirement documents, or as agreed with the Owner.

Part 1. General

1.1 Definition

- A. An alternate is an option during the time of bidding. (For product substitutions during the contract see Section 01631).
- B. An alternate will be stated on the Bid Form (or revised Bid Form if an alternate is approved by addendum) for an amount to be added to or deducted from the base bid which the Owner may choose to accept
- C. An alternate may be either changes to the scope of work, or in products, materials, equipment, systems or installation methods described in the bidding documents.

1.2 Policy

- A. Contractors shall price the specification and scope of work called for by the bidding documents, and shall only price alternates when they are either called for, or added by addendum.
- B. Prices for alternates shall include for changes for other work affected.

1.3 Contractor's request for an alternate

- A. A written request to submit an alternate may be made by a contractor during the bidding period, a minimum of ten calendar days prior to the date for receipt of bids.
- B. Complete data must be provided with any request, to substantiate compliance with requirements, together with all relevant supporting literature, performance and test data, and samples if applicable.
- C. Any approval to allow the pricing of an alternate will be made by addendum to all contractors, and a revised Bid Form issued.

1.4 Acceptance of an alternate

Should the Engineer's Representative approve an alternate for use in the contract, the Contractor shall coordinate related work including that of sub-contractors if applicable, and modify or adjust adjacent work as required to ensure that work affected is complete and fully integrated into the project.

Part 1. General

1.1 Records

- A. The Contractor shall maintain all records required by the Contract Documents, including details relating, but not limited to, ground conditions encountered, weather conditions including temperature, relative humidity and precipitation, daily labour return sheets showing the number of operatives (by trade) employed on the site and the activities in which they were engaged, records of visitors to the site and complete accident reports.

1.2 Drawings

- A. During the course of construction, the Contractor shall maintain an accurate record of all deviations and changes between the works indicated on the drawings and the actual construction on site.
- B. Prior to Substantial Completion of the works, the Contractor shall prepare and deliver to the Engineer's Representative, two sets of Record Drawings of all of the work as constructed, including electrical, HVAC and plumbing installations.
- C. Record Drawings shall be provided in the form of one set of negatives and one set of prints. For this purpose, transparencies of the original drawings will be furnished by the Engineer's Representative to the Contractor.
- D. Should the Contractor fail in his obligation to supply such Record Drawings, the Owner shall have the right to employ the Engineer's Representative or any other competent person to produce the said drawings and to recover the costs of such services from the Contractor. (see also Section 01700 Part 1.3)

1.3 Photographs

- A. Before commencement of and during the progress of the works, at intervals not exceeding one month, record photographs shall be taken of such subjects as may be reasonably directed by the Engineer's Representative.
- B. The negatives, and two copies of 811 x 1011 prints shall be handed to the Engineer's Representative, at which point copyright shall be vested in the Owner. Each print shall be marked on the back with the date of exposure and a brief description of the subject.
- C. The Contractor may keep copies of progress photographs for his records, but such copies shall not be used for any purpose whatsoever without the Owner's written consent.

1.4 Conduct

- A. The Contractor shall treat the details of the Contract Documents as confidential, and shall not publish or disclose them in any trade or technical paper or elsewhere without the prior written consent of the Owner.
- B. During the progress of the works the Contractor shall be responsible for the conduct of his workmen, and shall, upon the direction of the Engineer's Representative cease to employ on the works any person who may, in the opinion of the Engineer's Representative, be incompetent or misconduct himself.

1.5 Site superintendent

- A. The Contractor shall keep up on the site a competent superintendent, and any instructions given to him by the Engineer's Representative or his representatives shall be deemed to have been given to the Contractor.

1.6 Sub-contractors

- A. All sub-contractors shall be employed by the Contractor upon terms and conditions consistent with those of the General and Supplementary Conditions of Contract for Construction.
- B. The Specification generally avoids delineating responsibility of subtrades (e.g. with regard to builder's work, interface of mechanical and electrical). The Contractor is responsible for all co-ordination and timing of the work of his sub-contractors. The Contractor shall provide all general and special attendances required and shall be responsible for the satisfactory fulfillment of his sub-contracts.
- C. If the Owner has a reasonable objection to any subcontractor proposed by the Contractor, the Contractor shall propose another to whom the Owner has no reasonable objection. If the changing of sub-contractor causes an increase to the bid amount, the increase will only be accepted if the Contractor has acted promptly and responsively, and has provided adequate information for approval.
- D. The Contractor shall only use the sub-contractors listed for the work for which they were proposed and accepted, and shall not change the list without the written approval, of the Engineer's Representative.
- E. Nominated sub-contractors will be dealt with by the provisions of the the Bermuda Supplementary Conditions when necessary.

1.7 Suppliers and installation

- A. Prior to starting installation of each major component of the work, the Contractor shall hold a pre-installation conference, attended by each entity involved or affected by planned installation, including technical representatives of product manufacturers and others recognized as expert or otherwise capable of influencing success of the installation.
- B. The Contractor shall comply with the manufacturer's instructions and recommendations where the extent is more detailed or stringent than requirements contained directly in the Contract Documents.

Part 2. Products

Not applicable.

Part 3. Execution

3.1. Anchoring work

- A. Work to be fixed in place shall be securely and properly located by measured line and level and isolated from non-compatible materials sufficiently to prevent deterioration.
- B. Individual units of work shall be mounted at industry-recognised mounting heights, if not otherwise indicated; uncertainties shall be referred to the Engineer's Representative before proceeding.

3.2. Cleaning and protection

- A. Installed elements of work shall be cleaned at the time of installation, and provided with sufficient maintenance and protection during construction to ensure freedom from damage and deterioration until the time of Substantial Completion.

Part 1. **General**

1.1 Utilities and services

- A. The Contractor shall make all reasonable enquiries and take all reasonable measures to ascertain locations of, and protect, existing mains, services and utilities, and shall ensure continuity of service to existing buildings.
- B. Should any known service passing through the site require adaptation, the Contractor shall carryout such removal, relocation or disconnection as may be required, and shall give sufficient notice to the Engineer's Representative, Owner and others relevant prior to interruption of services.

1.2 Setting out and dimensions

- A. Upon taking possession of the site, the Contractor shall verify all levels, angles, grades, rises and dimensions shown on the drawings.
- B. Should any setting out discrepancies or errors be discovered on the drawings, the Contractor shall immediately inform the Engineer's Representative and cease all work which is directly influenced by such discrepancies or errors pending resolution by the Engineer's Representative
- C. The Contractor shall be solely responsible for the accurate setting out of the works and shall employ a qualified surveyor whenever necessary. Any damages which may be incurred as a result of the incorrect setting out of the works shall be the responsibility of the Contractor's
- D. The Contractor shall be responsible for the maintenance of all bench marks on the site.

1.3 Maintenance of public roads

- A. The Contractor shall protect and maintain all existing roads, footpaths and tracks within the site boundary, and keep them in a clean and serviceable condition and make good any damage or soiling prior to handing over the site to the Owner on completion.
- B. The Contractor shall be responsible for keeping all roads, footpaths and tracks adjacent to or in the vicinity of the site free from physical damage and mud and other materials deposited by vehicles connected with the works, whether used by the Contractor or not
- C. In the event that the Contractor should fail to make good damage or soiling so caused, the Owner shall have the power to employ a separate contractor to

repair or cleanse the roads damaged or soiled, and the cost of such works shall be recoverable from the Contractor.

1.4 Use and protection of the site and environs

- A. The Contractor shall erect temporary barriers, adequate for security and stability, around the construction site for the duration of the contract until Substantial Completion whereupon it shall be removed. The Contractor shall confine his operations (and those of his sub-contractors and suppliers etc.) to within the barriers, except for related off-site work such as roads and utilities which shall be protected in an appropriate manner.
- B. The Contractor shall not pollute, nor cause to be polluted, any watercourse, body of water, surface water sewer, or drain discharging into any of these during the progress of the works, by allowing sand, gravel, cement, sewage or other impurities to escape from the works. The Contractor shall take all necessary preventative measures to ensure that such contamination does not occur.

Part 1. General

1.1 Parties to the Contract

- A. The "Owner" means the Government of Bermuda, represented by the Minister of Works and Engineering.
- B. The "Contractor" means the person or entity (or his heirs or executors) with whom the Owner has entered into a contract or agreement to carry out the works, including his sub-contractors, suppliers and any person acting on his behalf.

1.2 Contract Administrator

- A. When this Specification is used in conjunction with a contract containing the Bermuda Supplementary Conditions, the 'Contract Administrator' will be selected and stated in the Appendix.
- B. The Contract Administrator will normally be "the Engineer's Representative" .The designation "Engineer's Representative" is used throughout the specification to represent the Contract Administrator. When the Contract Administrator is different (i.e. Surveyor or Architect), this will be defined for the particular project.
- C. The "Engineer " means the Chief Engineer, the Ministry of Public Works, Post Office Building, 56 Church Street, Hamilton HM 12, PO Box HM 525 Hamilton HMCX,

and

who is a person employed by the Owner and who is lawfully entitled to practice Engineering in the Islands of Bermuda and is registered as an Engineer.

or

his authorised representatives.

1.3 Terms

- A. the "Works" or the "Work" means the construction and services required by the Contract Documents, and includes all labour, materials, equipment and services provided or to be provided to fulfill the Contractor's or his sub-contractors' and suppliers' obligations, or part thereof.
- B. "Notice" shall mean written notice.

- C. "Approval" shall mean written approval.
- D. "Indicated" is used to assist the reader in locating particular information on drawings by notes, graphics or schedules, or written into other portions of contract documents and terms such as "shown", "noted",
- E. "scheduled" and "specified" have the same meaning.
- F. "Directed, Requested, Approved, Accepted, etc" imply "by the Engineer's Representative", unless otherwise indicated.
- G. "Approved by Engineer's Representative" in no case releases the Contractor from the responsibility to fulfill the requirements of the Contract Documents.
- H. "Furnish" or "Supply Only" shall include delivery to the site, unloading, unpacking, and similar subsequent requirements prior to installation.
- I. "Install" or "Fix Only" includes, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar requirements.
- J. "Provide" means furnish and install complete and ready for intended use.
- K. "Remove" means remove from site, unless otherwise stated, and make good where disturbed. K "Bid" means the same as tender.
- L. "Sawn" (in carpentry or formwork) means the same as a rough; "wrot" (or wrought) means planed or finished.
- M. "Aggregates" are the components of a graded mixture of screenings.
- N. "The Owner" may be referred to on Engineering contracts as the Employer.
- O. "An Installer" is the operator or entity actually carrying out the installation.

1.4 Abbreviations

- P. Where abbreviations or acronyms are used in Contract Documents, they mean the recognised name or entity in the building construction industry; uncertainties shall be referred to the Engineer's Representative before proceeding.

Part 1. "N.I.C." means Not in Contract, and indicates work forming part of the overall project, but which is to be carried out by others under a separate contract

either prior to, subsequent to or concurrently with the main contract. The Contractor shall not include for work so described.

Part 1. General

1.1 Responsibility

- A. It is the Contractor's responsibility to hold all operational site meetings related to the execution of the work (unless it is specifically stated otherwise in bidding requirement documents).

1.2 Scope

- A. The Contractor shall schedule and administer a pre-construction meeting, as well as periodic progress meetings (minimum fortnightly unless stated otherwise), and specially called meetings as necessary, to include the following:
1. Preparing agenda.
 2. Distributing written notice in advance.
 3. Making physical arrangements.
 4. Presiding at meetings.
 5. Recording the minutes including significant proceeding and decisions.
 6. Reproducing minutes and copying within three days to all participants (including three copies to the Engineer's Representative) and to other parties affected.
- B. Representatives at meetings of the Contractor, sub-contractors and suppliers shall be qualified and authorised to act on behalf of the entity they represent.
- C. The Engineer's Representative and Owner's representatives may attend meetings to ascertain that work is expedited in accordance with Contract Documents and schedules.
- D. The Engineer's Representative has the right of approval of the minutes.

1.3 Pre-construction meeting

- A. The pre-construction meeting shall be within fifteen days prior to the Contractor commencing site operations, in a central venue convenient to all parties, designated by the Contractor.
- B. The following shall be in attendance:
1. The Contractor's representative.
 2. The resident Project Representative and/or the Contractor's superintendent.
 3. The Owner's representative (optional).
 4. The Engineer's Representative and professional consultants.
 5. Major sub-contractors and suppliers.
 6. Others as appropriate.

C. The suggested agenda is:

1. Distribute and discuss construction schedules including critical work sequencing.
2. Discuss major equipment deliveries and priorities.
3. Discuss project co-ordination and designation of responsible personnel.
4. Confirm procedures for field decisions, proposal requests, submittals, Change Orders, and applications for payments, and general correspondence handling.
5. Discuss and indentify locations of fencing, storage areas, site huts, toilets etc., temporary power, water and telephone, site access, condition of site, spoil banks etc.
6. Arrange the location, time and date of subsequent meetings.

1.4 Progress meetings

A. Progress meetings shall be held in the site office of the Contractor.

B. The following shall be in attendance:

1. The resident Project representative and/or the Contractor's superintendent
2. The Engineer's Representative and his professional consultants as required.
3. Major sub-contractors and suppliers as appropriate to the agenda.
4. Others as appropriate.

C. The suggested agenda is:

1. Review and approve previous minutes.
2. Review of work since previous meeting, including field observations etc.
3. Schedule review: including problems, corrective measures, revisions, off-site fabrication, delivery schedules and co-ordination.
4. Submittal review.
5. Quality control.
6. Pending changes, effect on schedule.
7. Other business.

1.5 Engineer's Representative's option to hold meetings

A. At his discretion the Engineer's Representative may assume the responsibility for holding site meetings, if he considers the Contractor unable to meet, or is deficient in meeting, the requirements of this Section. .

Part 1. **General**

1.1 **Scope**

- A. A Construction or Progress Schedule shall be submitted prior to commencing work on site, indicating a time bar for each significant category of work and sequencing times for submittals, and inspections.
- B. Status of alternates (if any, see Section 01030) sufficient for distribution to all relevant parties shall be issued promptly after award of the contract.
- C. A Schedule of Values in the form of an elemental analysis of the contract sum shall be submitted (see Section 01027) and shall be based on the values in the Bid Form, if provided.
- D. Applications for Payment at intervals specified (see Section 01027).
- E. Physical samples of mock-ups of materials, equipment or workmanship to establish standards as required by technical sections showing where applicable variations in colour, pattern or texture, average condition and extreme range of variations.
- F. The required security, performance bond or indenture submitted prior to the execution of the contract.
- G. A copy of each type of insurance policy submitted prior to commencing work on site.
- H. Copies of prints of the photographs as required (see Section 01040 Part 1.3).
- I. Copies of all warranties, guarantees, operating instructions and the like submitted prior to Substantial Completion.
- J. Copies of maintenance instructions, tools and operating manuals required by technical specifications presented prior to Substantial Completion.
- K. Copies of the "Certificate of Use and Occupancy" and other Government approvals, (including the Fire Department and Department of Health) submitted prior to the issue of a Certificate of Substantial Completion.
- L. Copies of keys for doors, panels, cabinets, valves, equipment etc. submitted upon Substantial Completion.
- M. Record Drawings as required (see Sections 01040 Part 1.2 and 01070 Part 1.3)

N. Shop Drawings

1. Initial submittal: one opaque blue/black line print and one correctable, reproducible transparency. The transparency will be processed and returned. After approval, print the processed transparency for job use and distribution.
2. Final Submittal: after approval, submit 3 prints; if the drawing is required for maintenance manuals submit 5 prints; with final submittal, include additional prints as necessary for job use and distribution. The Engineer's Representative will retain 2 prints, and will return the remainder. One print shall be maintained as mark-up copy for Record Drawings.

O. Product Data (facsimiles not acceptable)

1. Mark each copy to indicate the actual product to be provided; show selections from among options in the manufacturer's printed product data. Submit 4 copies to Engineer's Representative; submittal is for information and record purposes only. Where the product data is required for maintenance manuals, submit 2 additional copies which will be returned. Maintain one additional copy at the project site for reference purposes.
2. The Contractor shall not proceed with the installation of manufactured products until a copy of the related product data is in the installer's possession on site.

P. Form of payment application

1. As soon as practicable after being notified of selection for the award of the Contract, the Contractor shall furnish in writing to the Engineer's Representative an itemised cost breakdown of the various trades and sections which comprise the contract, totalled to equal the contract sum: this analysis to be used as a basis for Progress Payment applications.
2. The cost breakdown shall be, and if not objected to by the Engineer's Representative before the first Progress Payment will be deemed to be, a true reflection of the costs including overhead and fee) to the Contractor of the respective elements in the contract sum.

Part 1. **General**

1.1 **Environmental Measures**

- A. Meet or exceed the requirements of all Bermuda environmental legislation and regulations, including all amendments up to project date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

Part 2. **Execution**

1.2 **Fires**

- A. Fires and burning of rubbish on site will not be permitted.

1.3 **Disposal of Wastes**

- A. Discharge of solid, liquid or gaseous materials into the surrounding environment will not be permitted. The contractor will be responsible for collection and disposal of all waste materials in accordance with the latest editions of the Ministry of Public Works Waste Management Plan.
- B. Do not bury rubbish and waste materials on site.

1.4 **Work In Or Adjacent To Water**

- A. Works performed in and around water will be carried out in accordance with regulations of Bermuda authorities having jurisdiction.
- B. Install temporary enclosures, screens, traps or other devices to prevent any excess concrete or other construction materials, waste materials or debris falling into the water.
- C. Remove immediately any solid object inadvertently dropped into the water. On conclusion of construction, dispose of all debris to prevent its entry into the water.
- D. Re-fuelling of machinery must take place at a safe distance from the water under methods approved by the Engineer.

1.5 **Drainage**

- A. Provide temporary drainage and pumping as necessary to keep site free from water.

- B. Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- C. Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with Bermuda authority requirements.

1.6 Environmental Protection

- A. When, in opinion of Engineer, negligence of Contractor results in damage or destruction of local flora and or fauna, or other environmental or aesthetic features beyond work areas as shown on contract drawings, the Contractor shall be responsible, at his expense, for complete restoration including replacement to satisfaction of Engineer.

1.7 Pollution Control

- A. Control emissions from equipment and plant to Bermuda authorities' emission requirements.
- B. Prevent extraneous materials from contaminating air, land or water, by vacuum, temporary enclosures, screens, traps or other devices.
- C. Spills of deleterious substances should be immediately contained and cleaned up in accordance with provincial regulatory requirements. Spills should be reported forthwith to the Engineer.

1.8 Storage And Handling Of Fuels And Dangerous Fluids

- A. Locate fuel storage facility a minimum of 100m from any water body in an area approved by the Engineer and construct impermeable dykes so that any spillage is contained.
- B. Prevent spillage of gasoline, diesel fuel and other oil products into the water and on land. Clean up spills promptly at own cost in accordance with Bermuda regulatory requirements. Report any fuel spills immediately to Engineer.
- C. Proper use of primers, grouts, bonding adhesives and other hazardous substances will be undertaken to prevent their entry into the water. Substances are to be stored and mixed on protected surfaces away from site to prevent their entry into waterways and contamination of soils.
- D. Collect and dispose of used oil filter cartridges and other products of equipment maintenance at industrial waste facility to satisfaction of Engineer.

Part 1. General

1.1 Definition

- A. A substitute is a contractor's alternative to a named product, proposed during the contract

1.2 Where substitution is not permitted

- A. No substitute product will be allowed for the following.
 - 1. For products specified by naming only one product and manufacturer.
- B. Under the circumstances in 1.2 A above the Contractor has the option at the time of bidding to request approval of an alternate (see Section 01030), and unless he does so, he shall be deemed to have allowed for a named product.

1.3 Where substitution is permitted

- A. For products proposed as "equal" or "equivalent", (or similar wording), to named products that have such wording appended; the Contractor shall make a substitution submittal (see Part 1.5 of this Section).
- B. For products which the Contractor is unable to procure, or unable to procure in time, for reasons beyond his control; the Contractor shall make a substitution submittal (see Part 1.5 of this Section).

1.4 Where substitution is not required

- A. For products specified by referenced standard; the Contractor may select products meeting that standard, by any manufacturer but shall prefer a locally available product.
- B. For products specified by naming several products or manufacturers; the Contractor may use any of those named which comply with the specification.

1.5 Substitution submittals

- A. A written request must be made allowing reasonable time for review and reasonable time for ordering should there be approval.
- B. Complete data must be provided with any request, to substantiate compliance with requirements, together with all relevant supporting literature, performance and test data, and samples if applicable.

- C. The request must state what, if any, effect the substitution has on dimensions, other trades or contracts, scheduling and costs.

1.6 Acceptance of a substitute

- A. Should the Engineer's Representative approve a substitute as being equal, for use in the contract, the Contractor shall co-ordinate related work, including that of sub-contractors if applicable, and modify or adjust adjacent work as required to ensure that work affected is complete and fully integrated into the project.
- B. Should the Engineer's Representative approve a substitute that is NOT equal, for use in the contract, the Contractor shall co-ordinate related work, including that of sub-contractors if applicable, and modify or adjust adjacent work as required to ensure that work affected is complete and fully integrated into the project, and any cost saving of the unequal product shall accrue to the Owner.
- C. The Engineer's Representative's response to the contractor's submittal must be made with reasonable promptness and be made in writing.

Part 1. **General**

1.1 Contractor's procedures at Substantial Completion

- A. The Contractor shall comply with the Contract Conditions and complete the following before requesting the Engineer's Representative to inspect the work, or a designated portion of the work, for certification of Substantial Completion:
- B. The Contractor shall submit executed warranties, workmanship bonds, maintenance agreements, inspection certificates and similar required documentation for specific units of work, enabling the Owner's unrestricted occupancy and use.
- C. The Contractor shall submit record documentation, maintenance manuals, tools, spare parts, keys and similar operational items.
- D. The Contractor shall complete final cleaning, and remove temporary facilities and tools.
- E. The Contractor shall submit copies of "Certificate of Use and Occupancy" and other Government approvals, including Fire and Health.

1.2 Inspection procedures

- A. Upon the receipt of the Contractor's request, the Engineer's Representative will either proceed with inspection or advise the Contractor of pre-requisites not fulfilled. Following initial inspection, the Engineer's Representative will either prepare the certificate of Substantial Completion, or advise the Contractor of work which must be performed prior to issuance of the certificate. The Engineer's Representative will repeat the inspection when requested to ensure that the work has been substantially completed. Results of the completed inspection will form the initial "punch-list" for final acceptance.
- B. The Engineer's Representative will re-inspect the work upon receipt of the Contractor's notice that, except for the items whose completion has been delayed due to circumstances that are acceptable to the Engineer's Representative, the work has been completed, including punch-list items from earlier inspections and defective work arising during the Warranty Period. Upon completion of re-inspection, and at the end of the Warranty Period, the Engineer's Representative will either recommend final acceptance and final payment, or will advise the Contractor of work not completed or obligations not fulfilled as required for final acceptance. If necessary, this procedure will be repeated.

1.3 Record documentation

- A. The Contractor shall maintain two complete set of either blue-or black-line prints of the contract drawings and shop drawings for record mark-up purposes throughout the contract time, and mark-up these drawings during the course of the work to show both changes and the actual installation~ in sufficient detail to form a complete record for the Owner's purposes. He shall give particular attention to work which will be concealed and difficult to measure and record later, and work which may require servicing or replacement during the life of the project. He shall require the entities marking prints to sign and date each mark-up, and shall bind prints into manageable sets, with durable paper covers, appropriately labeled, and shall transfer the information onto an additional set of reproducible transparent drawings.
- B. The Contractor shall provide two sets of 3-ring vinyl-covered binders containing required maintenance manuals, properly identified and indexed, including operating and maintenance instructions extended to cover emergencies, spare parts, warranties, inspection procedures, diagrams, safety, security, and similar appropriate data for each system or equipment item.

1.4 Final cleaning

- A. At the time of project close out, the Contractor shall clean or re-clean the works to the condition expected from a normal, commercial building cleaning and maintenance programme, and complete the following cleaning operations before requesting the Engineer's Representative's inspection for certification of Substantial Completion.
1. Remove non-permanent protection and labels.
 2. Polish glass.
 3. Clean exposed finishes.
 4. Touch-up minor finish damage.
 5. Clean or replace mechanical systems filters.
 6. Remove debris.
 7. Broom-dean unoccupied spaces.
 8. Sanitise plumbing and food service facilities, and chlorinate potable water supply system.
 9. Clean light fixtures and replace burned-out lamps.
 10. Sweep and wash paved areas.
 11. Test potable water for contamination not more than 48 hours in advance of Substantial Completion.
 12. Wax resilient flooring, vacuum carpeting and wash ceramic tile work.

1.5 Repair of defective work

- A. Where damage to materials is minor, repair rather than replacement will be acceptable provided the end product is aesthetically and functionally equivalent to adjacent non damaged surfaces as determined by the Engineer's Representative. If unsatisfactory the Engineer's Representative may require that repaired materials be replaced with new.

