



November 25th 2016

Dear Bidders

**RE: Ferry Dock Rehabilitation 2016
Hamilton and Dockyard Terminals**

The Government of Bermuda, Ministry of Public Works invite you to submit a tender for the above captioned project in accordance with the accompanying documents:

- Letter of Invitation
- Instructions to Bidders
- Annex A – Scope of Work
- Annex B – Form of Tender
- Annex C – Specifications
- Annex D – Drawings and Reference Documents
- Annex E – FIDIC - Short Form of Contract

The project involves the removal, refurbishment and reinstatement of the floating ferry docks and associated platforms and canopies at Hamilton and Dockyard Ferry Terminals. The work includes refurbishment of the spare barges located in the Government Quarry, removing the existing barges at Hamilton and Dockyard, and installing these barges in a controlled sequence to avoid suspension of the ferry service. The removed barges are to be refurbished and then used to maintain ferry service while other barges are removed and refurbished

A mandatory bidder's meeting will be held, between Monday 28th and Wednesday 30th November, at a date and time to be confirmed. This meeting will be accessible via a video link. Please contact Mr. Jeremy Burnham at jpburnham@gov.bm with your contact details and confirmation of attendance.

Tenders must be submitted no later than **3:00 p.m. December 7th, 2016**. Late submission will not be considered.

Tenders may be submitted either electronically, via email sent to both of the following email addresses ylortie@gov.bm and jpburnham@gov.bm with the Subject Line RFT "Ferry Dock Rehabilitation 2016", or a hard copy delivered to the Ministry of Public Works, Department of Works and Engineering, located on the 3rd floor, Post Office Building, 56 Church Street, Hamilton. The outer envelope must be clearly marked with the title:

**Tender Submission
Do Not Open Before 3:00 p.m., December 7th, 2016
Ferry Dock Rehabilitation 2016
Attention: Mr Jeremy Burnham**

Full details and request for tender documents may also be obtained from www.gov.bm procurement notice site. Any queries must be in writing and directed to Mr Jeremy Burnham by email at



GOVERNMENT OF BERMUDA
Ministry of Public Works
Works and Engineering

Letter of Invitation
Ferry Dock Rehabilitation 2016

joburnham@gov.bm., please indicate in the subject Line "Enquiry RFT "Ferry Dock Rehabilitation 2016",

We look forward to receiving your tenders and thank you in advance for your interest in this Government procurement opportunity.

Yours sincerely,

Mr. Yves Lortie
Chief Engineer
Ministry of Public Works



Ferry Dock Rehabilitation 2016 **Hamilton and Dockyard Terminals**

Bermuda

Instructions to Bidders

Date: November 2016



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Part 1 GENERAL and INSTRUCTIONS TO BIDDERS

PUBLIC ACCESS TO INFORMATION:



Any information collected or used by or on behalf of the Government of Bermuda ("Government") under this solicitation document is subject to the Public Access to Information Act 2010 ("Act"). The information belongs to a class of information that might be made available to the general public under the Act. The person who gives information to the Government in response to this solicitation document consents to the collection and use of the information and waives any right to challenge any decision made by the Government to disclose the information. Any questions regarding the collection, use, or disclosure of the information should be directed to the public authority that issued this solicitation document.

1.1 Time

- .1 The Tender submission must be delivered no later than the date and time noted on the Letter of Invitation.
- .2 Late submission will not be considered.
- .3 The Government may change the timeline for the Procurement Process without prior notice, and will notify bidders in writing promptly of any change by addenda, that will be posted on www.gov.bm procurement notices website.

1.2 Brief Description of Scope of Works

- .1 The Government of Bermuda, Ministry of Public Works, Works and Engineering (the Government) requests experienced Contractors for the Ferry Dock Rehabilitation 2016 as outlined in the Scope of Work.

1.3 Eligibility and Qualifications Requirements

- .1 This opportunity is open to suitably experienced Contractors who can clearly demonstrate previous experience with this type of work.
- .2 The Certificate of Confirmation of Non-Collusion is a mandatory requirement from all bidders. Any forms of agreement submitted which do not include a signed copy of this Certificate will be wholly rejected and will not be included in the evaluation process.
- .3 If it is later found that the undertakings made below have been breached at any stage of the process, the Contractors will be expelled from the process immediately. In the event that this is discovered after a contract award, legal action may be taken against the Contractors and/or any party involved in the matter. False submissions may also exclude the bidder, and any other person or company involved in collusion, from involvement in future contracts with the Government of Bermuda.
- .4 The bidder shall submit with their completed tender all appropriate documents in order to demonstrate the necessary experience and expertise for this type of work. Details of project team with resumes of key personnel to be assigned to the project and the name and full details of experience of any sub-contractors. Include descriptions of relevant and similar past projects.
- .5 The bidder shall submit their health and safety records for the last three years of reporting.



- .6 The bidder shall provide a reference for a bank or other financial institution confirming the bidder's capacity to provide the necessary financial resources to complete the work in accordance with the contract and schedule.
- .7 All corporate tenderers must include, with their tenders, a copy of the company's **Certificate of Incorporation** as evidence of the fact that the company is an existing registered company at the date of tender. Failure to provide the certificate of incorporation will render the tender void.
- .8 Tenders submitted by a joint venture of two or more firms as partners shall comply with the following requirements:
 - .1 The Tender, and in the case of a successful Tenderer, the Form of Agreement shall be signed so as to be legally binding on all partners;
 - .2 One of the partners shall be nominated as being in charge; and this authorisation shall be evidenced by submitting a power of attorney signed by legally authorised signatories of all the partners;
 - .3 The partner in charge shall be authorised to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture, and the entire execution of the Contract including payment shall be done exclusively with the partner in charge;
 - .4 All partners of the joint venture shall be liable, jointly and severally, for the execution of the Contract in accordance with the Contract terms and a relevant statement to this effect shall be included in the authorisation mentioned under .2 above as well as in the Form of Tender and the Form of Agreement (in the case of a successful Tenderer); and
 - .5 A copy of the Agreement entered into, by the joint venture partners, shall be submitted with the Tender.

1.4 Cost of Tendering

- .1 The Bidder shall bear all costs associated with the preparation and submission of his Tender and the Government will in no case be responsible or liable for these costs, regardless of the outcome of the Tendering process.

1.5 Site Inspections & Tender Information

- .1 A mandatory bidder's meeting will be held, between Monday 28th and Wednesday 30th November, at a date and time to be confirmed. This meeting will be accessible via a video link. Please contact Mr. Jeremy Burnham at jburnham@gov.bm with your contact details and confirmation of attendance.
- .2 Prior to the tender closing, it is strongly suggested that the Bidder visit and inspect the site and surrounding areas where the works are to be performed.
- .3 The Bidder shall be deemed to have satisfied themselves as to the form and nature of the site, the quantities and nature of the works and materials necessary for the completion of the works, and in general to have obtained all necessary information as to



- the risks, contingencies and other circumstances which may influence or affect his Tender.
- .4 Bidders will be granted permission by the Government, upon application, to enter upon the site of the works for the purpose of inspection but only upon the express condition that such person will release and indemnify the Government from and against all liability in respect of personal injury, loss of or damage to property and any other loss.
 - .5 Bidders shall make their own assessment of existing facilities, conditions and difficulties which will attend the execution of the works called for by the proposed contract; including local conditions, constraints due to maintenance of traffic, labour conditions, uncertainty of weather, difficulties with access, and all other reasonable contingencies. Bidders shall satisfy themselves by personal examination of the site of the proposed Works and by such other means as they choose as to actual conditions and requirements, and as to the quantities required.
 - .6 The Bidder shall make and will be deemed to have made the fullest inquiries in Bermuda as to the availability of skilled and unskilled labour which he may require in the execution of the Contract and shall employ, to the extent practicable and reasonable, staff and labour from sources within Bermuda.
 - .7 No subsequent claim will be allowed or considered for any work that may be required for the proper execution and completion of the Works, due to failure by the Contractors to examine the site and make proper allowances for the conditions to be encountered.

Part 2 TENDER DOCUMENTS

2.1 Content of the Tender Documents

- .1 The set of solicitation documents issued for the purpose of Tendering includes the following documents, together with any Addenda thereto issued in accordance with Clause 2.3.
 - Letter of Invitation
 - Instructions to Bidders
 - Annex A – Scope of Work
 - Annex B – Form of Tender
 - Annex C – Specifications
 - Annex D – Drawings and Reference Documents
 - Annex E - FIDIC Short Form of Contract First Edition 1999 and Particular Conditions
- .2 The bidder is expected to examine carefully all instructions, conditions, forms, terms, specifications and drawings in the Tender documents. Failure to comply with the requirements of the Tender submission will be at the bidder's own risk.



2.2 Clarification of Tender Documents

- .1 A prospective bidder requiring any clarification of the tender documents shall notify the Government in writing, by email or by facsimile at the Government's address indicated below.
- .2 The Government will respond in writing by email or by facsimile to any request for clarification which they receive earlier than **7 calendar days** prior to the deadline for the submission of Tenders.
- .3 Written copies of the Government's response, where necessary (including a description of the inquiry but without identifying its source), will be sent to all prospective bidders who have provided contact details and posted on www.gov.bm procurement notice site.
- .4 No questions will be answered if received earlier than **3 calendar days** prior to the deadline for the submission of Tenders.

2.3 Amendment of Tender Documents

- .1 At any time prior to the deadline for submission of Tenders, the Government may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Tender documents by the issuance of an Addendum.
- .2 The Addendum will be posted on the www.gov.bm procurement notice site.
- .3 In order to afford prospective bidders reasonable time in which to take an Addendum into account in preparing their Tenders, the Government may, in its sole discretion, extend the deadline for the submission of Tenders in accordance with Clause 4.2.

Part 3 PREPARATION OF TENDER RESPONSE

3.1 Language of the Tender

- .1 The Tender prepared by the Bidder and all correspondence and documents relating to the Tender shall be written in the English language.

3.2 Documents Comprising the Tender

- .1 The following items shall be included in your Tenders, as a minimum. Additional supporting items may be included.
 - .1 Form of Tender
 - .2 Confirmation of Addenda Received
 - .3 Company Information, including Copy of Certificate of Incorporation
 - .4 Information on Eligibility and Qualifications as set out in Clause 1.3 of firms and personnel for Works and Services
 - .5 Fixed Price Schedule



- .6 Unit Rate Price Schedule
- .7 Method Statement
- .8 Health and Safety Plan
- .9 Project Schedule
 - .1 Provide a schedule of planned work activities, including milestones.
 - .2 Indicate proposed Commencement Date and Time for Completion.
- .10 Proposed Equipment List for the works as stated.
- .11 Certificate of Confirmation of Non-Collusion
- .12 Any other materials required to be completed and submitted in accordance with the instructions to bidders embodied in the tender document.
- .13 The Bidder shall use the forms found in *Annex B: Form of Tender*, for their submission, without exception.
- .14 One copy of the above is to be returned in accordance with Clause 3.6.
- .15 **Insurance** The Tenderer shall submit evidence with its Tender, such as a copy of a certificate or a letter from its insurers, confirming Third Party Insurance has been retained for the amount shown in the Schedule to the Agreement and for the duration of the Works.

3.3 Tender Prices

- .1 The Bidder shall provide a detailed schedule of values supporting the proposed **Lump Sum Price** for the Scope of Works.
- .2 Items against which no price is entered by the Bidder will not be paid for by the Government when executed and shall be deemed covered by the other **lump sum prices** in the Form of Tender.
- .3 The lump sum price shall include all labour, materials, equipment, tools, and expenses necessary to perform the Scope of Works. Include overhead and profit in the rates and prices listed. The price shall include, indicate separately, the cost of any work permits, and taxes.
- .4 All duties, taxes and other levies payable by the Contractors under the Contract, or for any other cause, as of the closing date for submission of Tender, shall be included in the rates and prices and total Tender.
- .5 Include an estimated schedule for progress payments, if any.
- .6 If this solicitation is amended, all terms and conditions that are not amended remain unchanged.



- .7 Unless stated otherwise in the Tender documents, the Contract shall be for the specific works as detailed in the tender documents and based on the completed Form of Tender.

3.4 Currencies of Tender

- .1 The fixed rates shall be quoted in Bermuda dollars.
- .2 Other currencies are available for payments and the exchange rate will be set to correspond with the date and time of tender closing.

3.5 Period of Tender Validity

- .1 All prices offered shall remain firm for one hundred and twenty (120) calendar days from the deadline for Tenders noted in the Letter of Invitation, unless the deadline is modified by an amendment to this solicitation.
- .2 In exceptional circumstances, prior to expiry of the original Tender validity period, the Government may request that the Tender validity period be extended. The request and the responses thereto shall be made in writing by email or by facsimile. A Bidder may refuse the request and withdraw his Tender. A Bidder agreeing to the request will not be required nor permitted to modify his Tender.
- .3 This validity period shall apply to all Tenders received regardless of whether a different validity period is specifically stated within a Tender.

3.6 Format and Signing of Tenders

- .1 The Bidder shall prepare one original set of the documents comprising the Tender as described in Clause 3.2.1 of these Instructions to Bidders.
- .2 The Tender shall be typed or written in indelible ink and shall be signed by a person or persons duly authorised to bind the Bidder to the Contract. All pages of the Tender where entries or amendments have been made shall be initialled by the person or persons signing the Tender.
- .3 The completed Tender shall be without alterations, interlineations or erasures, except those to accord with instructions issued by the Government, or as necessary to correct errors made by the Bidder, in which case such corrections shall be initialled by the person or persons signing the Tender.
- .4 Only one Tender may be submitted by each Bidder. No Bidder may participate in the Tender of another for the same Contract in any relation whatsoever.

3.7 Safety and Health

- .1 All works must be carried out in strict accordance with the Bermuda Occupational Safety and Health Act, 1982 and the Occupational Safety and Health Regulations of 2009.

3.8 Alcohol, Smoke and Drug-Free Policy

- .1 All Government buildings and work sites are designated as alcohol, smoke and drug-free.



3.9 Confidentiality Agreement:

- .1 The selected firm and key individuals may be required to sign a project confidentiality agreement limiting information that may be discussed outside the team.

Part 4 SUBMISSION OF TENDER

4.1 Submission of Tender

- .1 The sealed tender package shall be deposited in the Tender Box located at:
Ministry of Public Works
Department of Works and Engineering
3rd Floor, Post Office Building
56 Church Street
Hamilton HM 12, Bermuda
- .2 The following information shall be written on the outside of the tender package:
Tender Submission
Do Not Open Before 3:00 p.m., December 7th, 2016
Ferry Dock Rehabilitation 2016
Attention: Mr J Burnham
- .3 If the envelope is not sealed and marked as instructed above, the Ministry will assume no responsibility for the misplacement or premature opening of the proposal submitted.
- .4 A tender opened prematurely for this cause will be rejected by the Ministry and returned to the bidder.
- .5 Tenders may be withdrawn at any time by written notice only provided such notice is received at the office of the Ministry prior to the date/time set as the closing time for receiving Tenders.

4.2 Deadline Extension for Submission of Tenders

- .1 The Government may, at its discretion, extend the deadline for submission of Tender by issuing an amendment in which case all rights and obligations of the Government and the Bidders previously subject to the original deadline shall thereafter be subject to the new deadline as extended.

4.3 Late Tenders

- .1 Any Tender received by the Government after the deadline for submission of Tenders will be rejected and considered as nonresponsive.

4.4 Modifications and Withdrawal of Tenders

- .1 The Bidder may modify or withdraw his Tender after Tender submission, provided that the modification or notice of withdrawal is received in writing by the Government prior to the prescribed deadline for submission of Tenders.



- .2 The Bidder's modification or notice of withdrawal shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause 4.1 for the Submission of Tenders with the envelope additionally marked "MODIFICATION" or "WITHDRAWAL" as appropriate. For a modification it shall also be accompanied by an additional Non-collusion certificate.
- .3 Subject to Clause 5.3, no Tender shall be modified subsequent to the deadline for submission of Tenders.

Part 5 TENDER OPENING AND EVALUATION

5.1 Tender Opening

- .1 The Government will examine the Tenders to determine whether they are complete, whether the documents have been properly signed and whether the Tenders are generally in order. Tenders for which an acceptable notice of withdrawal has been submitted pursuant to Clause 4.4 shall not be opened.
- .2 The tender opening will be held in public.
- .3 The tender opening will be recorded with the bidders' names and tender prices.

5.2 Process to be Confidential

- .1 Information relating to the examination, clarification, evaluation and comparison of Tenders and recommendations concerning any award of contract shall not be disclosed to Bidders or other persons not officially concerned with such process.
- .2 Any effort by a Bidder to influence the Government in the process of examination, clarification, evaluation and comparison of Tenders, and in decisions concerning any award of Contract, shall result in the rejection of the Tender.

5.3 Clarification of Tenders

- .1 To assist in the examination, evaluation and comparison of Tenders, the Government may ask Bidders individually for clarification of their Tenders.
- .2 The request for clarification and the response shall be in writing or by facsimile, but no change in the price or substance of the Tender shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Government during the evaluation of the Tenders in accordance with Clause 5.6.

5.4 Preliminary Examination – Determination of Responsiveness

- .1 Prior to the detailed evaluation, the Government will determine whether each tender is substantially responsive to the requirement of the tender document.
- .2 For the purpose of this clause, a substantially responsive Tender is one which conforms to all the terms, conditions and specifications of the Tender documents without material deviation or reservation.



- .3 A material deviation or reservation is one which affects or could affect, in any substantial way, the scope, quality, or performance of the Services or which limits, in any substantial way, the Government's rights or the Bidder's obligations under the Contract and rectification of which deviation or reservation would affect unfairly the competitive position of other tenderers presenting substantially responsive tenders..
- .4 A Tender determined as not substantially responsive will be rejected by the Government.

5.5 Correction of Errors

- .1 The Government will examine the responses to determine whether they are complete, whether any computational errors have been made, whether the documents have been properly signed, and whether the bids are generally in order.
- .2 Arithmetical errors will be rectified on the following basis:
 - .1 Where there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If the Bidder does not accept the correction of errors, its Bid will be rejected. If there is a discrepancy between words and figures the amount in words will prevail;
 - .2 Where there is a discrepancy between the amounts in figures and in words, the amounts in words will govern; and
 - .3 Where there is a discrepancy between the individual lump sums and the total amounts derived for the sum of the individual lump sum, the individual lump sum as quoted will govern, and the total amount will be corrected.

5.6 Evaluation and Comparison of Tenders

- .1 Review Process
 - .1 Each Tender will be reviewed by an evaluation committee to determine if it meets the Tender requirements.
 - .2 Failure to meet the requirements for the Request for Tenders may be cause for rejection of the Tender.
 - .3 Final selection of a company will be determined following review of all work proposals, cost Tenders and/or formal oral presentations.
 - .4 Tenders price alone will not be the sole determining factor in be selection of the Contractors for this work.
 - .5 The Ministry will consider the Tender costs for all Tender items identified herein together with the Bidder's qualifications, references, and understanding of the scope of work to form the basis for its decision on who will be selected.
 - .6 The Ministry reserves the right to reject any or all Tenders and to determine which Tender is, in the Ministry's judgment, the most responsive.



.7 The evaluation committee may, at its sole option, ask for interviews or oral presentations by any Bidder (s) participating in this process (creation of a short list). Attendance at any such interview will be at the Bidder's expense.

.2 Evaluation Criteria

.1 Tenders will be evaluated to determine the best value offered to the Government of Bermuda based on the following criteria:

.2 Phase 1 - Tenders Responsiveness - Pass/Fail

.1 Required documentation: Tenders will be reviewed to determine if all required documentation was included with Tender submittal as described in this RFP.

.2 Each Tender will be reviewed by an evaluation committee to determine if it meets the Tender requirements. Failure to meet the requirements for the Request for Tenders may be cause for rejection of the Tender.

.3 Phase 2 - Tenders Review and Evaluation

.1 The Tenders will be evaluated according to the Tenders Evaluation/Weighting Criteria below.

.2 The evaluation committee may seek written clarification from any or all prospective Contractors in order to better understand and evaluate the Tender.

.4 Phase 3 - Presentations/Oral Interviews

.1 Tenders determined to have scored in the competitive range **may** be invited to present oral presentations for the purpose of introducing key members of the evaluation team, and allowing the Ministry to fully understand the prospective Contractor's ability to meet the evaluation criteria. Oral presentations will not be scored separately. Instead the Ministry may modify Tender scores and resulting rankings based on the oral presentation.

.2 The project manager identified in the Tender must be the lead presenter in the oral presentation. This process may not be used as an opportunity to submit missing documentation or to make substantive revisions to the original Tender.

.5 Phase 4 - Cost Tenders

.1 After the technical and oral presentations, cost Tenders will be evaluated.



5.7 Tender Evaluation/Weighting Criteria

ITEM	EVALUATION CRITERIA	WEIGHTING
1	Mandatory Requirements	
1.1	Attendance at the Mandatory Bidders Meeting	Pass/Fail
1.2	Form of Tender Completed and signed	Pass/Fail
1.3	Certification of Confirmation of Non-Collusion form signed	Pass/Fail
2	Experience & Capability:	
2.1	Has the bidder provided documentation that clearly demonstrates their understanding of the works and their ability to deliver the requirements of the tender?	/20
2.2	Has the bidder provided documentation that clearly confirms their personnel have the experience and qualifications to performing this type of work?	/10
2.3	Has the bidder provided documentation that clearly demonstrates that the bidder has the availability and capacity to perform the services to meet the schedule described in the tender documents?	/10
2.4	Were the bidder's referees positive about their experience of working with the bidder?	/10
2.5	Has the bidder performed well for the Government in previous projects?	/10
2T	Total Score - Section 1	60%
3	Financial Analysis	
3.1	Tender price (include all costs)	/20
3.2	The bidder is in a stable financial position.	/5
3.3	The bidder has no outstanding Government debt.	/5
3T	Total Score - Section 2	30%
4	Social, Environmental & Economic criteria	
4.1	Percentage of workforce that is Bermudian or has Bermudian status.	/5
4.2	Does the bidder provide documentation or other evidence that they are providing apprenticeships/training positions or that they are willing to offer them?	/5
4T	Total Score - Section 3	10%



The final award recommendation will be based on the highest scoring Tender as determined by total points and rank using criteria and weights as stated above.

Part 6 AWARD OF CONTRACT

- .1 Subject to Clause 5.3, the Government will award the Contract to the Bidder whose Tender has been determined to be substantially responsive to the Tendering documents and who, in the opinion of the Government, has offered the best overall submission. This may not be the lowest priced tender received.
- .2 The Government may award contracts to multiple Bidders pursuant to this Invitation to Tender. Additionally, a Bidder may be awarded multiple works packages.
- .3 Prior to expiration of the period of the tender validity, the Government shall award a single or multiple contract(s) to the qualified Bidders with the highest total score based on the evaluation method indicated herein.
- .4 The Government does not bind himself to accept the lowest or any Tender and reserves the right to reject any Tender and, and to annul the Tendering process and reject all Tenders, at any time prior to Award of Contract, without thereby incurring any liability to the affected Bidder, or Bidders or any obligations to inform the affected Bidder or Bidders of the grounds for the Government's action.
- .5 Where multiple works packages are available, the Government does not bind himself to accept the lowest Tender of each package. The Government reserves the right to award the works packages in their entirety to a single Contractor or to separate Contractors.
- .6 The Government may declare the Tendering process void when it is evident that there is a lack of competition or there has been collusion.
- .7 All Tenders may be rejected if substantially higher than the budget.

Notification of Award

- .8 Prior to the expiration of the period of Tender Validity prescribed in clause 3.5 of these instructions to bidders, the Government will notify the successful Bidder by email and/or by registered letter that its Tender has been accepted.
- .9 This letter, hereinafter, and in the Conditions of Contract called "Letter of Acceptance", shall name the sum which the Government will pay to the Contractors in consideration of the execution, completion and maintenance of the Works by the Contractors as prescribed by the Contract, hereinafter, and in the Conditions of Contract, called "the Contract Price".
- .10 The successful tender together with the letter of acceptance will constitute the formation of a binding Contract, unless and until a form agreement is executed.
- .11 The Government will promptly notify the unsuccessful Bidders that their Tenders have been unsuccessful.



Signing of Contract Agreement

- .12 At the same time that the Government notifies the successful Bidder(s) that that his Tender has been accepted, the Government will send the successful bidder the form of agreement provided in the tendering documents, incorporating all agreement between the parties.

END OF INSTRUCTIONS TO BIDDERS



Ferry Dock Rehabilitation 2016

Hamilton and Dockyard Terminals

Bermuda

Annex A

Scope of Work

Date: November 2016



Part 1 GENERAL

1.1 Scope of Work

- .1 The Works consists of:
 - .1 The work involves refurbishing the existing floating barges at the Hamilton Ferry Terminal and the Dockyard Ferry Terminal.
 - .2 The Contractor shall prepare a work plan, in consultation with Marine and Ports, to refurbish the floating barges in a safe and sequential manner while minimizing the disruption to the ferry service.
 - .3 For the Pink Route Ferry docking area, remove the existing platforms, ramps, fender sections and barges for refurbishment. Prepare the barges for a new paint system, fixing holes or damaged parts of the barges, repairing access hatches, adjusting the existing ballast, replacing the zinc cathodic protection bars, replacing damaged fendering, replacing damaged or missing connection pins, fixing damaged pin connection plates, and other refurbishments as needed. It is expected that the ferry service for the Pink Route will be relocated to the nearby wharf.
 - .4 The floating barge sections and fender sections currently stored at the Government Quarry will need to be refurbished. This will include preparing the barges for a new paint system, fixing holes or damaged parts of the barges, repairing access hatches, supplying and installing new ballast, replacing the zinc cathodic protection bars, replacing damaged fendering, replacing damaged or missing connection pins, fixing damaged pin connection plates, and other refurbishments as needed.
 - .5 Two passenger loading areas currently service three ferry routes from the Hamilton Ferry Terminal, the Blue Route, the Orange Route, and the Green Route. The floating barges for each passenger loading area are to be removed one at a time to reduce the disruption to the ferry service.
 - .6 The floating barges are to be removed, including the canopies, the canopy supports, the platforms, the ramps, and floating barges while maintaining one passenger loading area.
 - .7 Repair any damage to the platforms, the ramps, fenders, pin connections, and/or canopy supports.
 - .8 Install the rehabilitated sections from the Government Quarry in place of the sections removed from the Hamilton Ferry Terminal; reinstall the existing platforms, ramps, and canopy supports to allow the passenger loading area to be reinstated.
 - .9 Install new canopy fabric on the exiting canopy support frames.



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- .10 Rehabilitate the removed floating barges including new paint, repair damaged pin connections, repair damaged access hatches, fix any damaged barge plates, adjust the ballasting, install new zinc cathodic protection bars, so that these sections can then be installed for the second passenger loading area.
 - .11 Use a similar approach to the Pink Route Ferry docking area. It is expected that the ferry service for the Pink Route will be relocated to the nearby wharf.
 - .12 The Dockyard Ferry Terminal will be rehabilitated using refurbished sections from the Hamilton Ferry Terminal to maintain the ferry service as much as possible.
 - .13 Temporary arrangements may be needed to secure the barges, ramps and platforms while the barges are being refurbished.
 - .14 Maintenance/reinstatement of any utility ducts within the existing dock areas.
 - .15 Project completion date is April 30, 2017.
 - .2 Removal of the arising shall be in accordance with the latest editions of the Ministry of Public Works Waste Management Plan.
 - .3 The Contractor shall pay particular attention to the environmental requirements of this Specification.
 - .4 The Contractor shall phase their works to minimize disruption to the ferry service through a safe and effective project management methodology.
 - .5 Coordination with the Ferry Service is a key part of this project. All parties must coordinate their work schedules with Marine and Ports.

END OF SCOPE OF WORK



Ferry Dock Rehabilitation 2016

Hamilton and Dockyard Terminals

Bermuda

Annex B

Form of Tender

Date: November 2016



Form of Tender

(Note: all sheets form part of the tender)
(To be completed by bidder)

TO: Permanent Secretary, Ministry of Public Works

1. We declare that this tender is made without any connection, comparison of figures or arrangements with or knowledge of any other corporation, firm or person making a tender for the same work and is in all respects fair and without collusion or fraud.
2. We confirm that we have submitted a bona fide tender, intended to be competitive and we have not fixed or adjusted our Price by or under or in accordance with any agreement or arrangement with any other bidder.
3. Having examined the tender documents, the Conditions of Contract, the Site, the Drawings and Specifications, and Addenda Nos. _____ to _____ inclusive for the execution of the above named Project, we, the undersigned, offer to execute and complete the whole of the said works and remedy any defects therein in conformity with the Conditions of Contract, Specifications, Drawings, and Addenda for the lump sum of

_____ (words)

_____ (figures)

Tenders will only be accepted in respect of the entire scope of works and not on individual elements.

4. We acknowledge that the Request for Tenders form is part of our Tender submittal.
5. We undertake, if our Tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Appendix to the Tender.
6. We confirm that our Tender shall remain open for acceptance by the Government of Bermuda for a period of one hundred and twenty (120) calendar days from the date of this undertaking and shall not withdraw this Tender during this period.
7. Unless and until a formal Agreement is prepared and executed this Tender, together with your written acceptance thereof, shall constitute a binding contract between us.
8. We understand that you are not bound to accept the lowest or any tender that you may receive.
9. We confirm having received and complied with addenda number _____ to _____ (if any).
10. We confirm that we, the undersigned, are conducting business as a proper legal entity and are not delinquent in making payments for outstanding debts to the Government for Social Insurance contributions, Payroll Tax or other debt recorded by the Accountant General Debt Collection section.
11. Unless and until a formal agreement is prepared and executed, this Tender, together with your written



acceptance thereof, shall constitute a binding contract between us.

- 12. We undertake to commence the work within **FOURTEEN (14) calendar days** of the date of the acceptance of this tender.
- 13. We consent to the collection and use of any information we give to the Government in response to this solicitation document and waive any right to challenge any decision made by the Government to disclose the information.
- 14. We certify that we are aware of the terms and conditions of the FIDIC Short Form of Contract First Edition 1999, and Particular Conditions which include amendments and additions to the General Conditions.

Dated this _____ day of _____, 2016.

SIGNED:

(signature) _____ in the capacity of _____

(block letters) _____

Duly authorized to sign tenders for and on behalf of:

(firm) _____

(address) _____

WITNESS:

(signature) _____ in the capacity of _____

(block letters) _____



Form COP24

CERTIFICATE OF CONFIRMATION OF NON-COLLUSION

Notes for the tenderer/bidder

The essence of Open Tendering is that the Government of Bermuda shall receive bona fide competitive Tenders from all persons tendering. In recognition of this principle, all companies submitting a tender will be required, by way of the signature of the Company Principle, state their agreement to the statements below, which indicates that the tender has been submitted without any form of collusion.

The Certificate of Confirmation of Non-Collusion is a mandatory requirement from all bidders. Any bids submitted which do not include a signed copy of the Certificate will be wholly rejected and will not be included in the evaluation process.

If it is later found that the undertakings made below have been breached at any stage of the process, the bidder will be expelled from the process immediately. In the event that this is discovered after a contract award, legal action may be taken against the bidder and/or any party involved in the matter.

False submissions may also exclude the bidder, and any other person or company involved in collusion, from bidding for future contracts tendered by the Government of Bermuda.

Confirmation of non-collusion

I/We certify that this is a bona fide Tender, intended to be competitive and that I/We have not fixed or adjusted the amount of the Tender or the rates and prices quoted by or under or in accordance with any agreement or arrangement with any other person.

I/We confirm that we have not received any additional information, other than that contained within the tender pack, or supplementary information provided to all bidders.

I/We also certify that I/We have not done and undertake that I/We will not do at any time any of the following acts:

- (a) communicating to a person other than the tender administrator the amount or approximate amount of my/our proposed Tender (other than in confidence in order to obtain quotations necessary for the preparation of the Tender for insurance) or
- (b) entering into any agreement or arrangement with any other person that he shall refrain from tendering or as to the amount of any Tender to be submitted; or
- (c) offering or agreeing to pay or give or paying any sum of money, inducement, gift /hospitality or valuable consideration directly or indirectly to any person in relation to this tender.

Signed

(1) _____ Status _____ Date _____

(2) _____ Status _____ Date _____

for and on behalf of



COMPANY INFORMATION/QUALIFICATIONS AND REFERENCES

Name of Company: _____

THE COMPANY SHALL COMPLETE THE FOLLOWING STATEMENTS:

1. Principal(s) and Director(s) of the Company:

Physical Address:

Email: _____

Website: _____

2. Company Insurance Details:

Workers Compensation Insurance carried: BD\$ _____
Professional Indemnity Insurance carried: BD\$ _____
Commercial Grade Liability Insurance carried: BD\$ _____

3. Company Payroll Tax No.: _____

4. Company Social Insurance No.: _____

5. Company Banking Details:

Name and address of primary bankers:



6. Do you have any involvement with other entities that may be seen as a conflict of interest? If so, please provide details:

7. The Company has been engaged in business, under the present business name for _____ years.

8. Experience in work of a nature similar to that covered in the proposal documents extends over a period of _____ years.

9. The following contracts have been satisfactorily completed in the last three (3) years for the persons, companies or authorities indicated:

	Year	Type of Work	Contract Amount	Location and for Whom Performed
(a)				
(b)				
(c)				

10. The following person may be contacted for information concerning the work listed above (list a reference for each contract named):

	Name	Title	Address	Telephone
(a)				
(b)				
(c)				

11. The following contracts are no longer current but have been satisfactorily completed in the last five (5) years for the persons, companies or authorities indicated:

	Year	Type of Work	Contract Amount	Location and for Whom Performed
(a)				
(b)				
(c)				



11.

Total Number of Staff	
Number of Bermudians	
Number of Non-Bermudians	
Percentage of Bermudians	

12. All of the above statements as to experience, financial qualifications are submitted in conjunction with the proposal, as a part thereof and the truthfulness and accuracy of the information is guaranteed by the Company.

13. Attach a copy of the Company's Certificate of Incorporation.

Signed: _____

Print Name: _____

Title: _____

Company: _____

Date: _____



Fixed Price Schedule

ITEM	DESCRIPTION	QUANTITY	SUM
1.	General Conditions	1	
2.	Rehabilitation Type I Barge	1Quarry + 2HT + 1DY	
3.	Rehabilitation Type II Barge	1Quarry + 2HT	
4.	Rehabilitation Type III Barge	1Quarry + 2HT + 2DY	
5.	Rehabilitation Type IV Barge	1Quarry + 1HT + 1DY	
6.	Rehabilitation Type I Pile Guide	1	
7.	Rehabilitation Type II Pile Guide	1	
8.	Rehabilitation Type III Pile Guide	1	
9.	Rehabilitation Bow Loader Unit	1Quarry + 2HT + 1DY	
10.	Rehabilitation Mooring Pile at Dockyard	1	
	TOTAL SUM	Lump Sum	



Unit Rate Schedule

ITEM	DESCRIPTION	QUANTITY	SUM
1.	Project Manager	Hour	
2.	Site Superintendent	Hour	
3.	Skilled Labour	Hour	
4.	Unskilled Labour	Hour	
5.	Welder	Hour	
6.	Tug, Barge, Crane	Hour	
7.	Rehabilitation High Fender HM / HF / HMS	Each	
8.	Rehabilitation Low Fender LM / LF	Each	
9.	Rehabilitation Ladder	Each	
10.	Rehabilitation Wall Fender	Each	
11.	Connection Pins – Long	Each	
12.	Connection Pins - Short	Each	
13.	Rehabilitation Typical Aluminum Platform	Each	
14.	Rehabilitation Typical Aluminum Gangway	Each	
15.	Rehabilitation Typical Aluminum Ramp	Each	
16.	Rehabilitation Typical Aluminum Stairs	Each	
17.	Blast cleaning - Externally	\$/ft ²	
18.	Blast Cleaning - Internally	\$/ft ²	
19.	Painting - Externally	\$/ft ²	
20.	Painting – Internally	\$/ft ²	

All unit rates above shall be considered fully inclusive of delivery, preparation, placing and finishing.

For variations to the contract not covered in the preceding price break down rates or the above schedule of unit rates, the price may be determined on the basis of the base material and installation cost plus _____% for overhead and _____% for profit and applied to the base cost.

END OF FORM OF TENDER



Ferry Dock Rehabilitation 2016
Hamilton and Dockyard Terminals

Bermuda

Annex C:
Specifications

Date: November 2016



Part 1 GENERAL

1.1 Work Covered By Contract Documents

.1 Project Identification:

This project consists of the rehabilitation of the Hamilton and Dockyard Ferry Terminals.

.2 Project Locations:

Hamilton Ferry Terminal, Pembroke Parish, Bermuda.

Dockyard Ferry Terminal, Sandy's Parish, Bermuda

Government Quarry, Hamilton Parish, Bermuda

.3 Project Owner:

Ministry of Public Works,
56 Church Street,
Hamilton, Bermuda, HM12.

.4 Project Engineer:

Ministry of Public Works,
Department of Works and Engineering
3rd Floor, 56 Church Street,
Hamilton, Bermuda, HM12.

1.2 Form of Contract

.1 Project will be constructed under the FIDIC Short Form of Contract First Edition 1999.

1.3 Work Sequence

.1 Contractor shall schedule the works coordinating all tasks and elements.

1.4 Contractor Use of Site

.1 Ascertain boundaries of Site within which work must be confined.

.2 Use of Site is to be coordinated through the Ministry of Public Works.

1.5 Drawings and Specifications Furnished

.1 Owner Responsibilities:



- .1 Provide 2 paper and 1 electronic copy of drawings and specifications to Contractor.
- .2 Contractor Responsibilities:
 - .1 Pay for additional copies of drawings and specifications if required.
 - .2 Maintain at Site one complete set of up to date drawings and specifications. Make available to Engineer at any time.

1.6 Supplementary Drawings

- .1 Engineer may furnish supplementary drawings to assist proper execution of work. Such drawings will be issued for clarification only and will have same meaning and intent as if included with plans referred to in Contract Documents.

END OF SECTION



Part 1 GENERAL

1.1 Related Sections

- .1 Section 01010 – General Requirements

1.2 Requirements

- .1 Unit prices may be used to vary Contract Price when authorised by Owner's Representative.

1.3 Conditions of Unit Prices

- .1 Unit price quantities will be checked and measured by Owner's Representative.
- .2 Unit prices entered on Tender Form will remain in force until Substantial Completion and issuance of Interim Certificate of Completion.

END OF SECTION



Part 1 GENERAL

1.1 Utilities and Services

- .1 Existing Cables are known to exist within the site.
- .2 The Contractor is responsible for locating and protecting these and any possible other services within the works area.

1.2 Setting Out Stations

- .1 The Ministry of Public Works will establish sufficient survey stations for the Contractor to undertake the works.
- .2 The coordinates and levels of these stations shall be provided to the Contractor at least 1 week prior to commencement of site works.

1.3 Setting out and Dimensions

- .1 Upon taking possession of the site, the Contractor shall verify all levels, angles, grades, rises and dimensions.
- .2 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
- .3 The Contractor shall be responsible for the maintenance of all bench marks on the site.

1.4 Use of Site

- .1 Limit use of site to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated. Confine construction and operations to within the boundary shown on drawings.
- .2 Keep driveways and entrances serving all adjacent premises and public property clear and available to the public, owners, owner's employees, guests, and both service and emergency vehicles at all times. These areas shall not be used for parking or storage of materials.
- .3 The roadway shall remain passable by one lane of traffic at all times. The Contractor shall provide temporary ramps onto temporary surfaces, advance warning signage and steel decking plates to span temporary excavations in the carriageway.

1.5 Working Hours

- .1 Normal working hours shall be Monday to Saturday 8.00am through to 6.00pm and Sunday working shall be permitted within the hours of 9.00am and 6.00pm.

END OF SECTION



Part 1 GENERAL

1.1 Requirements Included

- .1 Works schedule
- .2 Cash flow forecast
- .3 Work Plans including but not limited to the following:
 - .1 Drawings and calculations showing details of staging required.
 - .2 Drawings showing details of enclosures for confinement of lead waste and protective enclosures for painting.
 - .3 Methods for surface preparation of steelwork
 - .4 Methods for handling and disposal of waste materials
 - .5 Methods for application of paints.
- .4 Traffic Control Plan
- .5 Quality Control Plan
- .6 Health and Safety Plan
- .7 Product data
- .8 Samples

1.2 Administrative

- .1 Provide to Engineer for review the submittals specified. 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 reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by the submittal until review is complete.
- .3 Review submittals prior to submission to the Engineer. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with the requirements of the Work and Contract Documents. Submittals not stamped, signed, dated and identified as to the specific project will be returned without being examined and will be considered rejected.
- .4 Contractor's responsibility for errors and omission in submission is not relieved by Engineer review of submittals.
- .5 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Engineer review.
- .6 Keep one review copy of each submission on Site.



1.3 Works Schedule

- .1 Prepare schedule in the form of a horizontal bar chart in electronic Microsoft Project format. If other equivalent critical-path scheduling software is used, provide the Engineer with a copy of the software.
- .2 Provide a separate bar for each trade or operation. Show proposed progress of all activities for main work items and sub trades of Contract. Where applicable, indicate labour, Works crews, plant and equipment to be employed.
- .3 No progress payments will be approved until a schedule acceptable to the Engineer is received.

1.4 Work Plans

- .1 Provide Work Plan for each key activity, as requested by Engineer, to show methods and general methodology for carrying out the Work. Relate Work Plan to activities shown on Works Schedule.
- .2 Work Plans shall identify, among other things:
 - Sequencing of works
 - Access details
 - Temporary works
 - Temporary staging
 - Events affecting traffic, both road and marine
 - Events requiring work at night if necessary.
 - Tasks involving lifting, hoisting, and/or specified crane set-ups.
 - Methods to ensure appropriate environmental protection including containment and disposal of lead paint debris.
 - Safety procedures for dealing with lead based paints.
 - Safety procedures for working at height, over water, and in confined spaces.
 - Other key tasks as requested by the Engineer.
- .3 Work plans must include, where necessary, drawings and calculations.

1.5 Traffic Control Plan

- .1 Submit a Traffic Control Plan, per Section 01570.

1.6 Quality Control Plan

- .1 Submit a Quality Control Plan, per Section 01400.



1.7 Shop Drawings and Product Data

- .1 The term “shop drawings” means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of any portion of the Work including temporary access platforms.
- .2 Indicate materials, methods of Work and attachment or anchorage, erection, diagrams, connections, explanatory notes and other information necessary for completion of Work.
- .3 Adjustments made on shop drawings by the Engineer are not intended to change the Contract Amount. If adjustments affect the value of Work, state such in writing to the Engineer prior to proceeding with the Work.
- .4 Make such changes in shop drawings as the Engineer may require, consistent with Contract Documents. When resubmitting, notify the Engineer in writing of any revisions other than those requested.
- .5 Submit two (2) copies of product data sheets or brochures for requirements requested in specification Section and as the Engineer may reasonably request.
- .6 Submit two (2) prints of shop drawings for each requirement requested in specification Sections and as the Engineer may reasonably request. Engineer will return one print marked as follows:
 - .1 “REVIEWED” - Make and distribute additional copies as required for own execution of the Work.
 - .2 “REVIEWED AS MODIFIED” - Drawings will be marked “REVIEWED AS MODIFIED” when the Engineer requires revision or correction to the details shown on the drawing, but does not require resubmission of the drawing. This procedure will not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the Contract. Revise the drawing as noted, and make and distribute additional copies as required for own execution of the Work.
 - .3 “REVISE & RESUBMIT” - Make the necessary revisions and resubmit revised drawings for review. Show the drawing number of the first such revised drawing and show the latest revision number applicable to the drawing by adding a suffix to the drawing numbers as – “REV. 1”, “REV .2”, etc.
 - .4 “NOT REVIEWED” - This notation indicates when the Engineer has not reviewed the drawing. It may also be used in combination with the notation to revise and resubmit the drawing where the Engineer lacks sufficient information to complete his review and required to resubmit the drawing for review after revision.
- .7 Use only those shop drawings on the work that bear the “REVIEWED” or “REVIEWED AS MODIFIED” notation.
- .8 Do not revise shop drawings marked “REVIEWED” unless resubmitted to the Engineer for further review.



- .9 Catalogue pages or drawings applicable to an entire family or range of equipment or materials will not be accepted as shop drawings unless they are clearly marked to show the pertinent data for the particular materials.
- .10 Submissions that are illegible or unclear will not be accepted and they will be returned to the Contractor unreviewed.
- .11 Submit all submissions under cover of a transmittal listing the individual items in the submission, and indicating whether or not they are revisions to a previous submission.
- .12 Owner may deduct, from payments due to Contractor, costs of additional Engineering work incurred if correct shop drawings are not submitted after one review by Engineer.
- .13 Review by the Engineer is for the sole purpose of ascertaining conformance with the general design concept. This review does not mean that the Engineer approves the detail design inherent in the shop drawings, responsibility for such remains with the Contractor, and such review does not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job-site, for information that pertains solely to fabrication processes or to techniques of Work and installation and for co-ordination of the work of all sub-trades.

1.8 Samples

- .1 Submit for review samples as requested in respective specification Sections. Label samples as to origin and intended use in the Work.
- .2 Deliver samples prepaid to Engineer's or testing company's business address as directed.
- .3 Notify the Engineer in writing, at the time of submission, of deviations in samples from requirements of Contract Documents.
- .4 Adjustments made on samples by the Engineer are not intended to change the Contract Amount. If adjustments affect the value of Work, state such in writing to the Engineer prior to proceeding with the Work.
- .5 Make changes in samples which the Engineer may require, consistent with Contract Documents.

1.9 Certificates

- .1 Immediately after award of Contract, submit certificates of insurances.



Part 2 PRODUCTS

.1 None

Part 3 EXECUTION

.1 None

END OF SECTION



Part 1 GENERAL

1.1 Required Submittals

- .1 The Contractor shall submit the following documents to the Engineers Representative:
 - .1 Schedule of Work
 - .2 Construction Method Statements
 - .3 Construction Safety and Health Risk Assessments
 - .4 Environmental Method Statements
 - .5 Samples
 - .6 Certificates

1.2 Administration

- .1 Provide to the Engineer for review the submittals specified. 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 reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by the submittal until review is complete.
- .3 Review submittals prior to submission to the Engineer. 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 Work and Contract Documents. Submittals not stamped, signed, dated and identified as to the specific project will be returned without being examined and will be considered rejected.
- .4 Verify that field measurements and affected adjacent Work are coordinated.
- .5 Contractor's responsibility for errors and omission in submission is not relieved by Engineer review of submittals.
- .6 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Engineer review.
- .7 Keep one review copy of each submission on Site.

1.3 Schedule of Work

- .1 Prepare schedule in the form of a linked bar chart. All events, activities and constraints shall be numbered and shall be given a title. Details to be given for each event, activity or constraint should include:



- .1 its title
 - .2 its scheduled start and finish dates
 - .3 its duration
 - .4 any relevant “must” start or finish dates
- .2 Provide a separate bar for each event, activity, operation or constraint, show proposed progress of all activities. Where applicable, indicate labour, construction crews, plant and equipment to be employed.
 - .3 The key milestones in the construction process shall also be identified. Schedule milestones will include but not be limited to the following:
 - .1 Start of construction
 - .2 Placement of orders for critical equipment items
 - .3 Delivery dates (to site) for critical equipment items
 - .4 Final handover (final completion)
 - .4 Revise and resubmit schedule every two weeks to reflect actual progress of the Works.
 - .5 With schedule updates, provide written explanations to Engineer as to why previously reviewed schedule is not being met (if applicable).
 - .6 Show changes in operations proposed (if required), to complete construction works within Contract Time.
 - .7 No progress payments will be approved until receipt of schedule updates acceptable to the Engineer.

1.4 Method Statements

- .1 Provide Method Statement for each key activity and additionally as requested by Engineer, to show construction methods, equipment and general methodology for carrying out the Work. Relate Method Statement to activities shown on Construction Schedule.
- .2 Method Statements shall identify, among other things:
 - .1 Sequencing of works
 - .2 Methods to ensure appropriate environmental protection
 - .3 Other key tasks as specified in the Contract Documents, and/or as requested by the Engineer.



1.5 Certificates

- .1 Submit certificates of insurances within 10 days after award of Contract and before any work begins at the Site.

END OF SECTION



Part 1 GENERAL

1.1 Related Sections

- .1 Environmental Protection Section 01561
- .2 Traffic Control Section 01570

1.2 Temporary Staging Area

- .1 The Contractor shall make arrangements for a temporary staging area for carrying out the works. Staging area is for trailers, storage, parking, and all other Contractor activities required for the works.
- .2 Entry to and exit from the staging area shall be in accordance with the Contractor's traffic Control Plan, per Section 01570.

1.3 Access

- .1 Provide and maintain adequate access to project site.
- .2 Maintain roads and bridge in safe and clean condition for duration of Contract and make good any damage resulting from Contractor's use of roads and bridge.

1.4 Storage Sheds

- .1 Provide adequate weatherproof sheds with raised floors, for storage of materials, tools and equipment which are subject to damage by weather.

1.5 Enclosures

- .1 To prevent material from entering the water and where required for protection of adjacent property and traffic, erect temporary barriers or enclosures. Any damages to adjacent property, vehicles and public shall be made good by the Contractor at his own expense to the satisfaction of the Engineer.

1.6 Power

- .1 The Contractor shall make all necessary arrangements with the Bermuda Electric Light Co., Ltd. for the temporary supply of electricity necessary for the proper completion of the Contract and he shall be responsible for paying all charges and fees in connection therewith

1.7 Water Supply

- .1 The Contractor shall be responsible for an adequate supply of water for the Works and pay and bear all costs associated therewith.



1.8 Drainage

- .1 Refer to Section 01561 - Environmental Protection for site drainage and pumping requirements.

1.9 Site Signs and Notices

- .1 Except for notices related to traffic control, instruction, public safety, etc. as required elsewhere in these specifications, no signboards or other advertising will be permitted on this project.
- .2 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or earlier if directed by Engineer.

1.10 Scaffolding

- .1 Design, construct and maintain scaffolding in rigid, safe and secure manner.
- .2 Remove promptly when no longer required.

1.11 Removal of Temporary Facilities

- .1 Remove temporary facilities from site when directed by Engineer.
- .2 When project is closed down at end of Work, keep temporary facilities operational until close down or removal is approved by Engineer.
- .3 Make good all surfaces, including roads, walls, permanent buildings, parking areas and lawns which have been affected by temporary facilities.

Part 2 PRODUCTS

- .1 None

Part 3 EXECUTION

- .1 None

END OF SECTION



Part 1 GENERAL

1.1 Environmental Measures

- .1 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

2.1 Fires

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

2.2 Disposal of Arisings

- .1 Collect all rubbish and waste material and dispose of in accordance with the latest editions of the Ministry of Public Works Waste Management Plan.

2.3 Drainage

- .1 Provide temporary drainage and pumping as necessary to keep site free from water. Do not pump water containing suspended materials into waterways, sewer or drainage systems. Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with Bermuda authority requirements.

2.4 Environmental Protection

- .1 When, in the 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.

2.5 Pollution Control

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

2.6 Storage And Handling Of Fuels And Dangerous Fluids



- .1 Locate fuel storage facility a minimum of 100 m from any water body in an area approved by the Engineer and construct impermeable dykes so that any spillage is contained.
- .2 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.
- .3 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.
- .4 Collect and dispose of used oil filter cartridges and other products of equipment maintenance at industrial waste facility to satisfaction of Engineer.

END OF SECTION



Part 1 GENERAL

1.1 Related Sections

- .1 Section 01010 – General Requirements
- .2 Section 01300 - Submittals

1.2 References

- .1 Specification and Standard for the Painting of Metal Surfaces – Issued by the Ministry of Public Works.

1.3 Description

- .1 This section outlines the requirements for the provision and installation of painting.
- .2 All painting shall be completed in strict accordance with the procedures outlined in the reference document Specification and Standard for the Painting of Metal Surfaces – Issued by the Ministry of Public Works.

1.4 Samples

- .1 No paints shall be used on project without approval from the Engineer.
- .2 Submit test certification and test results to Engineer at least 1 week prior to commencement of painting confirming that paint meets all specification requirements including requirements of the manufacturer.
- .3 Ensure test results can be correlated with actual paint shipped to site.
- .4 Colours to be approved by Engineer.
- .5 Enable Engineer to take two ½ gallon samples of each paint delivered to site, one sample from manufacturer's containers and one sample from painters' pot, if required.

1.5 Submittals

- .1 Submit in accordance with Section 01300 Submittals.
- .2 The Contractor shall submit a detailed method statement for controlling and monitoring the painting process.
- .3 Product Data: Submit manufacturer's instructions, printed product literature and data sheets for the paint and include product characteristics, performance criteria, physical size, finish and limitations.
- .4 Provide Owner's Representative with a daily copy of field records.



1.6 Quality Assurance

- .1 The latest editions of the following specifications and standards.
 - .1 Steel Structures Painting Council (SSPC): Surface Preparations Specifications, specifications and standards herein referred to.
 - .2 American Society for Testing and Materials (ASTM): Specifications and standards herein referred to.

Part 2 PRODUCTS

2.1 Materials

- .1 All coatings shall be from the same manufacturer.
- .2 All coatings shall be the same be two part epoxy, mixed immediately prior to installation.
- .3 All coatings shall meet the requirements of SSPS-PS 13.01
- .4 Coatings shall be from the same manufacturer utilized by the Fabricator unless otherwise agreed by the Engineer.
- .5 Coating preparation and application shall meet the manufacturer's recommendations and the requirements of SSPC-PS 13.01.
- .6 All barge decks or other steel walking surfaces repairs shall have a non-skid finish.

2.2 Paint Schedule

- .1 The interior of the barges shall be coated with Amercoat 236 two part epoxy with 80% solids or approved equal. There shall be a minimum of two coats at 4 - 8 mils per coat, for a dry film thickness of 12 mils (minimum, not average) plus stripe coat over sharp edges, cut-outs and welds. There shall be contrasting colours for each coat with off white as the final colour.
- .2 The exterior sides and bottoms of the barges shall be coated with Amercoat 235 two part epoxy with 68% solids or approved equal. There shall be a minimum of two coats with a final dry film thickness of 16 mils (minimum, not average). There shall be a strip coat over sharp edges, cut-outs and welds. There shall be contrasting colours for each coat with the final colours dark grey above the waterline and light blue below the waterline.
- .3 The decks of the barges shall be coated with Amercoat 238 two part epoxy with 77% solids or approved equal. There shall be a minimum of two coats with a final dry film thickness of 16 mils (minimum, not average). The final coat shall contain Ameron Fine Grit 886 aluminium oxide or approved equal. There shall be a strip coat over sharp edges, cut-outs and welds. There shall be contrasting colours for each coat with the final colours light grey.
- .4 All other steel fabricated items shall be coated with Amercoat 235 two part epoxy with 68% solids or approved equal. There shall be a minimum of two coats with a final dry



film thickness of 16 mils (minimum, not average). There shall be a strip coat over sharp edges, cut-outs and welds. There shall be contrasting colours for each coat with the final colours dark grey.

- .5 No coating of stainless steel is required.
- .6 All surfaces must be inspected prior to coating.

Part 3 EXECUTION

3.1 Preparation of Surfaces

- .1 Clean surfaces in accordance with the “Specification and Standard for the Painting of Metal Surfaces” and the manufacturer’s instructions.
- .2 All steelwork shall be prepared for painting in accordance with the “Specification and Standard for the Painting of Metal Surfaces” and the manufacturer’s instructions.
- .3 Any field welded or damaged surfaces shall be painted with Amercoat 68HS or a zinc rich primer to the approval of the Engineer.
- .4 Provide a copy of paint manufacturer’s instructions to Engineer.
- .5 Gritblasting shall meet the requirements of SSPS=SP10 “Near White Blast-Cleaning”.
- .6 The contractor shall follow all recommendations of the manufacturer.

3.2 Protection of Surfaces

- .1 Protect surfaces not to be painted in accordance with the “Specification and Standard for the Painting of Metal Surfaces”.
- .2 Coat prepared surfaces as soon as surface is clean and dry in accordance with the “Specification and Standard for the Painting of Metal Surfaces” and prior to any deterioration in standard.
- .3 Prevent contamination of prepared surfaces in accordance with the “Specification and Standard for the Painting of Metal Surfaces”. If any contamination occurs, test and clean prepared surfaces in accordance with the “Specification and Standard for the Painting of Metal Surfaces”.

3.3 Mixing Paint

- .1 Mix paint in accordance with the “Specification and Standard for the Painting of Metal Surfaces” and the manufacturer’s instructions.
- .2 Provide a copy of paint manufacturer’s instructions to Engineer.

3.4 Application



- .1 Apply paint in accordance with the “Specification and Standard for the Painting of Metal Surfaces” and the manufacturer’s instructions.

3.5 Inspection

- .1 Inspection procedures shall be in accordance with the “Specification and Standard for the Painting of Metal Surfaces”.

3.6 Inspection by Paint Manufacturer

- .1 Arrange to have a representative of the coating manufacturer on site to approve the method of preparation of surfaces and application of coatings, and provide written certification of same to the Engineer.

END OF SECTION

**Specification and Standard
for the
Painting of Metal Surfaces.**

Issued by: The Ministry of Public Works

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Revision	Section	Page	Description	Date
1			General revision, typos and content.	July 16, 2003
2	4.4.1	15	Reference clauses changed.	Nov. 28, 2003
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Amendments Reissue and Distribution

This Specification is subject to periodical review to reaffirm its adequacy and conformance with current requirements. The maximum period for review of this specification is one year.

Amendments to the specification are made as required to reflect current painting practice. The amendments are made by replacement page(s). An amendment number and date of amendment identify each amended page.

Amendments are numbered consecutively until such times as a new issue incorporates all such changes. When changes affect a considerable number of pages, and in any case after not more than ten amendments to one issue, the manual is reissued. Issues are identified by numbers in numerical sequence. Each issue cancels and replaces all previous issues and amendments.

The amendment list indicates all the amendments to the latest issue of the specification.

It shall be the responsibility of all registered holders to update the specification assigned to them and destroy obsolete copies of all amended pages.

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Foreword - General

This Standard is controlled by the Ministry of Public Works. A reference in this Standard to other codes and standards invokes the latest published issue or amendment unless otherwise stated

Paint application shall be done according to the paint manufacturer's recommendations. In case of conflict between this Standard and the manufacturer's recommendation, the more stringent shall apply.

Use of Language

Throughout this document, the words "will", "may", "should", "shall" and "must" when used in the context of actions, by others, have specific meanings as follows: -

- a) "Will" is used normally in connection with an action by the Ministry of Public Works, rather than by a Contractor or supplier.
- b) "May" is used where alternatives are equally acceptable.
- c) "Should" is used where provision is preferred.
- d) "Shall" is used where provision is mandatory.
- e) "Must" is used only where a provision is a statutory requirement.

List of Reference Codes and Standards

ISO 8501-1	Preparation of Iron & Steel – incl 7079 Supplement
Guide to SSPC-VIS 1-89	Visual Standard for Abrasive Blast Cleaned Steel
Guide to SSPC-VIS 2	Standard Method of Evaluating Degree of Rusting on Painted Steel Surfaces
Guide to SSPC-VIS 3	Visual Standard for Power- and Hand-Tool Cleaned Steel
Guide to SSPC-VIS 4/NACE No. 7	Visual Reference Photographs for Steel Cleaned by Water Jetting
SSPC-SP 1	Solvent Cleaning
SSPC-SP 2	Hand Tool Cleaning
SSPC-SP 3	Power Tool Cleaning
SSPC-SP 5/NACE No. 1	White Metal Blast Cleaning
SSPC-SP 10/NACE No. 2	Near-White Blast Cleaning
SSPC-SP 11	Power Tool Cleaning to Bare Metal
SSPC-SP 12/NACE No. 5	Surface Preparation and Cleaning of Steel and Other Hard Materials by High- and Ultrahigh-Pressure Water Jetting Prior to Recoating
SSPC-AB 1	Mineral and Slag Abrasives
SSPC-PA 1	Shop, Field, and Maintenance Painting of Steel
SSPC-PA 2	Measurement of Dry Coating Thickness with Magnetic Gages
SSPC-PA Guide 3 SSPC-PA Guide 5	A Guide to Safety in Paint Application Guide to Maintenance Painting Programs
SSPC-Guide 6	Guide for Containing Debris Generated During Paint Removal Operations
SSPC – Guide 7	Guide for the disposal of lead contaminated surface preparation debris
SSPC-Guide 12	Guide for the Illumination of Industrial Painting Products
SSPC-Guide 14	Guide for Repair of Imperfections in Galvanized or Inorganic Zinc- Coated Steel Using Organic Zinc-Rich Coating
ASTM A123	Zinc (hot galvanised) coatings on products fabricated from rolled, pressed and forged shapes, plates, bars and strip.

The Health and Safety of Work Act 1982

Paint Manufacturers Product Safety Sheets, Data Sheets and Specifications

Paintmakers Association of Great Britain Ltd. - Personnel Protection Advice for the use of Marine Paints and Compositions.

The Control of Lead at Work Regulations (S1. 1980 No. 1248) HMSO.

Health and Safety Commission, Control of Lead at Work. Approved Code of Practice. HMSO.

Health and Safety Executive Guidance Note EH28 Control of Lead. Air Sampling Techniques and Strategies.

Health and Safety Executive. Guidance Note EH29 Control of Lead. Outside Workers.

Abbreviations and Units

BS British Standard

CP Code of Practice (appropriately prefixed)

ASTM American Society for Testing and Materials

SSPC The Society for Protective Coatings

NACE National Association of Corrosion Engineers

ISO International Standards Organization

This Standard employs SI (Système International d'Unités) metric units, but the Imperial equivalents given in brackets are equally applicable.

Definitions

For the purposes of this specification the following definitions apply.

Amplitude	Peak to valley height in a steel surface profile following surface preparation.
Atmospheric Zone	The part of a structure above the splash zone.
Company	The Ministry of Public Works
Company representative	Any person appointed by the Company who is responsible for ensuring work is carried out in accordance with the specification
Contaminated water	Any water other than “Potable” or Seawater
Contractor	The person or firm or Company with whom the Ministry of Public Works enters into contract to which this specification applies, and include the Company’s personal representative, successors and permitted assigns.
Dewpoint	The temperature of a given air-water vapour mixture at which condensation starts, that is the temperature at which air has reached saturation point.
DFT	The dry film thickness of a coating in its dry state.
E.A.R.	Manufacturer of foam earplug inserts for noise suppression. Any OSHA or HSE approved inserts may be substituted or in noisy conditions ear defenders should be worn. Blast cleaning processes constitute a noise hazard.
Engineer	Any person in the employment of the Company responsible for the project.
Holidays	Pinholes and small size defects in the coating system which penetrate through the thickness of the paint film.
Hot Dip Galvanised	A process whereby steel articles are Zinc coated by immersion in a molten Zinc.
Induction Time	For certain two pack materials the mixed materials must be allowed to stand for a period of time before they are applied to the substrate. Manufacturers data sheets should be referred to as this time period will vary from product to product and will also be influenced by ambient temperature.
Inspector	As Company Representative.

Microns	One thousandth of a mm.
M.I.O.	Micaceous Iron Oxide Pigment (A specular Haematite)
Pigment	Solid colouring agent in a paint.
Potlife	The length of time that a 2-pack paint will remain usable at a given temperature.
Profile	Cross section of a steel surface contour.
shall	Indicates a mandatory requirement.
Site	The location of painting operations approved by the Ministry of Public Works
Shelf Life	The manufacturers recommended maximum storage time for a given product under recommended storage conditions. In the case of two component materials this also refers to the materials before mixing.
Shop	The work carried out in a Vendor's, or his sub-contractors, factory.
Substrate	The surface to be coated or be prepared.
Submerged	Continuously immersed steel work
Thinner	Liquid added to ease application of paint or adjust viscosity.
Vendor	The supplier of materials or equipment.
VOC	Volatile Organic Compound – Any organic compound which participates in atmospheric petro-chemical reactions or that is measured by approved measures.
W.F.T.	The wet film thickness of a coating prior to evaporation of any solvent.

1. Scope.

- 1.1. This Standard specifies the general requirements of the Ministry of Public Works for the protection of iron, steel and galvanised steel surfaces from corrosion by the use of paint coatings, and includes requirements for both new construction and maintenance coating.
- 1.2. In all applications covered by this Standard, iron surfaces shall be treated in an identical manner to steel surfaces subjected to the same conditions.
- 1.3. The contents of this Standard define essential requirements of surface preparation and painting. In addition, the Contractor shall carry out the work in accordance with good practice generally, but not in exclusivity, as laid down in such publications as the SSPC manual - volume 1.
- 1.4. This specification is divided into sections to facilitate indexing, however it shall be read and interpreted as a document and not on an individual section basis.

2. General

- 2.1. Reference to any action by the Ministry of Public Works shall be taken to include action by an agent of the Ministry of Public Works.
- 2.2. **Prior to the commencement of the work the Contractor shall submit for the approval of the Ministry of Public Works fully detailed proposals as to how he intends to carry out the work within the framework of this Standard.**
- 2.3. A quality plan containing these details shall include the manufacturers minimum recommended cure time (after final coat application) prior to transportation and handling. The Contractor shall provide full details regarding the use of subcontractor, location of work, choice of materials and any such further information that the Ministry of Public Works may request to clarify his work intentions.
- 2.4. All work shall be carried out in strict compliance with any safety regulations made by the Ministry of Public Works for the site and any relevant requirements of national or local law. In particular, when working in restricted areas. The Contractor shall ensure that all plant, equipment and tools meet the appropriate regulations controlling work in such areas and are approved by the Ministry of Public Works. It shall be the Contractor's responsibility to ensure by whatever means appropriate that all precautions to prevent grit, dust, solvents, and cleaning agents are contained within the designated work areas. It is of paramount importance that contaminated water is prevented from entering any body of water.
- 2.5. Blast Cleaning and spray-painting equipment, working in locations where an explosive atmosphere may be present at any time, shall be continuously bonded from the nozzle to the compressor, which shall be earthed. Compressors used in these locations, which will be subject to approval by the Ministry of Public Works, shall meet any safety requirements that may be specified by the Ministry of Public Works.
- 2.6. Compressors and any associated pressure vessels shall be protected against over-pressure. Pressure test certificates shall be held on site for inspection. Note also that any local statutory requirements in this respect shall be complied with.
- 2.7. The Contractor shall provide and maintain in good condition all plant, equipment and tools necessary to carry out the work in an efficient manner and provide lubricating oils, greases, consumable materials and parts as necessary to maintain the plant, equipment and tools in good working order.
- 2.8. The Contractor shall provide and select, unless otherwise instructed, all equipment, paints and thinners as necessary to carry out the works in accordance with this Specification.

- 2.9. The Contractor shall purchase such paint from a list of approved manufacturers provided by the Ministry of Public Works. The Contractor shall provide all blasting abrasives necessary to carry out the work.
- 2.10. The Contractor shall provide skilled and experienced personnel to carry out the work together with competent and qualified supervision. The size of the work force may at their discretion be regulated by the Ministry of Public Works to the requirements and the scheduling of the work.
- 2.11. The Contractor shall comply fully with this Standard, unless otherwise approved by the Ministry of Public Works. Additionally, the work may be subject to continuous inspection by the Ministry of Public Works who will be at liberty to check every stage of the work is being carried out in accordance with all aspects of this Standard.
- 2.12. Unless otherwise specified by the Ministry of Public Works stainless steel and non-ferrous alloys shall not be painted.

3. Paints

3.1. Generalised Composition

- 3.1.1. All paints used shall conform to the following generalised composition clauses. In meeting these composition clauses, the paint manufacturer shall produce premium quality paint with the full performance required by this Standard.
- 3.1.2. Zinc Phosphate two-pack primer may be based on polyamide cured two-pack epoxy media and may contain a minimum of 40% Zinc Phosphate pigment, and a minimum of 20% Zinc Phosphate by weight in the dry film.
- 3.1.3. Two pack epoxy finishing paints may be based on polyamide or amine adduct cured two pack epoxy media and may be pigmented with suitable light fast coloured pigments to provide the necessary opacity, film build and weather resistance. A matt finish is required unless otherwise specified.
- 3.1.4. Alternative curing agents shall be allowed where necessary to provide low temperature cure.
- 3.1.5. Two component Polyurethane materials shall utilise “Bayer™” raw materials. Aliphatic Poly Iso-cyanate curing agents i.e. Desmodur 75™ to be reacted with OH containing Polyacrylic resin i.e. Desmophen™ series.
- 3.1.6. Wherever possible materials shall be VOC compliant

3.2. Thinners

- 3.2.1. Only thinners as specified by the paint Vendor shall be used. Mixing and thinning directions as furnished by the paint Vendor shall be followed.

4. Surface Preparation by Abrasive Blasting Cleaning.

4.1. General.

- 4.1.1. Steel surface preparation prior to painting shall be by dry grit blasting or slurry blasting unless otherwise specified by the Ministry of Public Works.
- 4.1.2. Manual or power tool preparation shall only be used where blast cleaning is not permitted and with specific approval of the Ministry of Public Works.
- 4.1.3. Steel surfaces shall be prepared to ISO8501-1, BS 7079, NACE or SSPC to the preparation grades detailed in these specifications and attached schedules.
- 4.1.4. Ministry of Public Works approved mastic sealant material compatible with the selected coating system shall be used on all components, fittings, attachments or bonds where a surface is likely to create an intimate contact.
- 4.1.5. In crevices or intimate metal contact points where dismantling is not possible, desirable or at the discretion of the Ministry of Public Works, suitable Ministry of Public Works approved penetrating oil or corrosion inhibitive grease shall be injected into the crevice. Inhibitive grease shall be suitable for use at ambient temperatures up to 40 deg C.
- 4.1.6. Friction grip surfaces shall not be sealed or treated with oil/grease injection.

4.2. Environmental Conditions.

- 4.2.1. Surface preparation shall not take place at temperatures below 5 deg C and above 35 deg C, when the relative humidity is greater than 95% or when the metal surface temperature is less than 3 deg C, above the ambient dew point or outside daylight hours or exterior locations. (Except when a paint system is recommended by a manufacturer at these temperature and humidity levels). Coatings shall not be applied to surfaces exceeding 40 deg C.
- 4.2.2. Items on which blasting is to be carried out shall be enclosed and protected from the environment.

4.3. Preparation prior to blasting.

- 4.3.1. Surface preparation of steel/iron surfaces shall remove all irregularities together with all rust and surface contaminants, such as grease, dirt and solid pollution.
- 4.3.2. Heavy scale and corrosion deposits shall be removed by suitable and appropriate impact tools.

- 4.3.3. Prior to surface preparation for painting, all steel work shall be inspected for any surface irregularities. Surface laminations and laps shall be immediately reported to the Ministry of Public Works and shall at their discretion be removed or made smooth prior to commencement of surface preparation.
- 4.3.4. The responsibility for the removal of such irregularities shall be defined by the Ministry of Public Works. Such irregularities, which become apparent after surface preparation by blast cleaning or any other method, shall be similarly treated.
- 4.3.5. Grease and oil contamination shall be removed by either wiping or scrubbing the surface with rags or brushes wetted with an approved Biodegradable degreaser, the surface then washed down with clean potable water. Surfaces contaminated with chlorides shall receive a wash down with potable water prior to abrasive blast cleaning. The surface shall be allowed to dry out before proceeding with further preparation and painting.

4.4. Preparation prior to blasting - Previously Coated Steelwork.

- 4.4.1. Prior to commencement of any surface preparation of previously painted surfaces, the existing paintwork shall be thoroughly examined and all areas of deterioration, loosened paint and rust formation noted, so that the work can be concentrated on such areas. If such areas cannot be exactly defined or extent of breakdown in the area precludes spot or patch blasting, overall preparation shall be carried out, or as specifically defined in specific Government of Bermuda Project Specifications.
- 4.4.2. The preparation of the surface shall ensure that all loosened paintwork is removed and feathered back to a firm edge and that all other surface irregularities and contaminants are also removed as specified in 4.3, or as specifically defined in specific Government of Bermuda Project Specifications.
- 4.4.3. Surface preparation of areas of existing sound paintwork prior to blasting shall comprise of removing any oil or grease contamination followed by scrubbing with a non-flammable proprietary emulsifying agent and rinsing with fresh potable water.
- 4.4.3. In areas where this is not possible the contamination should be solvent washed and shall be recorded for future reference. This shall be conducted prior to blasting or mechanical cleaning.

4.5. Grit containment and equipment protection.

- 4.5.1. All equipment, structures, electrical cabling and any other item required or defined by the Ministry of Public Works shall be fully protected from overblast and grit and dust contamination.
- 4.5.2. Items on which blasting is to be carried out shall be enclosed, dust extraction, water collection facilities and equipment should be employed to eliminate contamination of the site, adjacent plant, protective coatings, etc. and injury to all persons on or near the site.
- 4.5.3. Blast cleaning shall not be done in areas close to painting operations or wet coated surfaces to prevent dust and grit contamination.
- 4.5.4. The Contractor shall be responsible and take such action for preventing blast abrasive ricochet damaging, or interfering with vehicular movement on or under bridge structures.

4.6. Blasting Standard.

- 4.6.1. Steel surfaces shall be prepared by blast cleaning to ISO 8501-1. A Sa 2.5 preparation grade shall be achieved for all paint schedules in this specification where blasting is specified.
- 4.6.2. The surface amplitude or profile shall be as specified in the paint schedules in this specification. However, the profile shall be generally within the range of 50-70 microns with rogue peaks of maximum amplitude of 100 microns.
- 4.6.3. Where surface preparation is carried out in such a manner that the edge will butt up to the existing coating then the surface preparation shall extend 50mm into sound paintwork or at least until a firm feathered edge is found. A further 50mm shall then be lightly blasted to etch the surface.
- 4.6.4. When the Contractor is satisfied that the surface preparation meets the requirements of the Specification he shall inform the Ministry of Public Works Inspector who shall inspect the blast cleaned area.
- 4.6.5. Any areas not conforming to the Specification shall be re-cleaned to the original standard and reinspected.
- 4.6.6. After acceptance of the blast standard by the Ministry of Public Works Inspector, the work and containment area including but not limited to deck and floors shall be cleaned down thoroughly.
- 4.6.7. Spent abrasives and dust residues shall be completely removed from the prepared surface by brushing and vacuum cleaning or blowing with clean, dry compressed air.

- 4.6.8. Following blast cleaning the surfaces shall be tested for the presence of soluble iron salts in the form of Fe⁺⁺ and Fe⁺⁺⁺. The approved test method is that defined in ISO 8025 Bresle method. The maximum permitted tolerance is 25mg/ltr. Any surfaces found in excess of this level will require high-pressure water washing as defined in clause 4.11.1 followed by a reblast in accordance with 4.6.
- 4.6.9. Within four hours of commencement of blast cleaning and before any deterioration of the blast standard occurs, paint application shall be carried out.

4.7. Abrasives and Air Supply.

- 4.7.1. Selection of abrasives for blast cleaning shall give a surface profile or anchor pattern generally in the range of 50-75 microns with rogue peaks of maximum amplitude 100 microns.
- 4.7.2. Abrasives used for blasting shall be Garnet or approved equivalent. The abrasive shall be free from dust, salts, silica and other impurities and shall be used only once.
- 4.7.3. The pressure and volume of the compressed air supply for blast cleaning shall meet the work requirement and shall be sufficiently free from oil and water contamination to ensure that the cleaning process is not impaired. Traps, separators and filters shall be emptied and purged regularly.

4.8. Equipment and Operation.

- 4.8.1. All equipment used for blasting shall be conductive and earthed to prevent a build up of static electricity.
- 4.8.2. An after cooler may be employed with each compressor and shall have adequate and efficient water traps. The after cooler shall be suitable for the size of compressor employed.
- 4.8.3. Dead man handles shall be fixed and fully functioning to the blast line as close as is practical to the blast nozzle and any person found securing these handles in the on position by any other means than normal hand pressure shall be removed from the site immediately. The dead man shall be held by the blaster and NOT by any other person.
- 4.8.4. The nozzles used for blast cleaning should ideally have a maximum orifice size of 12mm and shall be of the venturi design. Any nozzles that are worn or damaged should be replaced to maintain efficient cleaning and pressures.

Should the bore of the nozzle be worn to the degree that the bore is elliptical, it shall be discarded.

- 4.8.5. For maintenance work nozzle liner materials should normally be of the tungsten or silicon type.
- 4.8.6. To achieve specified finish as detailed in 4.6.1, blasting will generally be carried out at 90-120 psi at the nozzle and under these circumstances the Contractor should consider the employment of receivers between the compressor and the site of actual blasting.
- 4.8.7. Nozzle blasting pressure shall be measured at the blast nozzle by the use of the Hypodermic Needle Gauge. This need only be performed if there are problems attaining consistent surface profile readings or progress.
- 4.8.8. Prior to blasting all equipment to be used shall be inspected and any defective equipment shall be replaced.
- 4.8.9. The Contractor shall ensure that all compressed air and blast hose coupling seals are replaced when a defect is discovered. All couplings shall be wired together to prevent hose burst.
- 4.8.10. The Contractor shall employ angle blast nozzles where necessary to successfully blast difficult areas to the required standard.

4.9. Areas which cannot be blasted.

- 4.9.1. For areas where blast cleaning is impractical or cannot be permitted, power tool cleaning shall be employed. Needle gunning, scraping, chipping and sheet wire brushing using power driven tools cannot remove firmly adherent mill scale and shall only be used with the approval of the Ministry of Public Works Engineer.
- 4.9.2. Power tool cleaning shall be performed in accordance with the section 5 in this standard.

4.10. Slurry Blasting.

- 4.10.1. The use of slurry blasting (abrasive injection into air/water stream) shall be subject to approval by the Ministry of Public Works prior to use. The equipment to be utilized shall be the “Falcon 60 Kwikblast System®” or approved equivalent.
- 4.10.2. Alternative equipment should have the following technical specification: -

Water Consumption rate 1 – 1.5ltrs per minute

Abrasive consumption	1kg per minute
Water pressure feed	Standard potable water mains pressure
Air pressure –supply	100psi /250cfm
Nozzle size	1 inch
Fittings	In line water filtration, air and water pressure gauges. Suitable shutdown-failsafe devices compliant with OSHA or other recognised international safety legislation authorities.

4.11. High Pressure Water Jetting/Hydro blasting

4.11.1. Surface preparation by High Pressure Water Jetting (10000 psi /680 Bar) and Ultra High Pressure Water Blasting (>30,000 psi/2000 Bar) shall be undertaken in accordance with SSPC SP-12 in certain environments, subject to the approval of the Ministry of Public Works. Similar standards to those defined in 4.6. should be achieved. Where possible selection of High Pressure Water Jetting equipment shall take into account individual control of all variables including air pressure, and water media. Special attention shall be paid to all pressure rated equipment.

Important Note

The manufacturers guidelines and operating instructions together with any safety instructions shall be strictly adhered to. Only **skilled and trained** operatives approved by the Ministry of Public Works may be permitted to use this equipment.

4.12. Galvanised Surfaces.

- 4.12.1. Galvanised surfaces shall not be treated unless specifically required by the Ministry of Public Works or as specifically defined in specific Government of Bermuda Project Specifications.

5. Power and Manual Surface Preparation.

5.1. General.

- 5.1.1. For areas where blast cleaning is impractical or cannot be permitted, power tool cleaning shall be employed. Needle gunning, scraping, Flap Wheels TM chipping and steel wire brushing using power driven tools cannot remove firmly adherent mill scale and shall only be used with the approval of the Ministry of Public Works.

5.2. Preparation Prior to Power Tool Cleaning.

- 5.2.1. Preparation prior to power tool cleaning on new and previously coated steelwork shall be as detailed in section 4.3. of this specification.

5.3. Preparation Standard.

- 5.3.1. Steel surfaces shall be prepared by power tool cleaning to SSPC SP 3 and 11 preparation grades this shall be achieved for all paint schedules in this specification where power tool cleaning is specified.
- 5.3.2. Where welds occur within the area to be prepared or where a power disc or power wire brush cannot be used, impact tools shall be applied (vibratory or rotary hammers, needle guns, chisels etc.) followed by brush cleaning.
- 5.3.3. Misuse of some power tools can produce a burnished slick on the surface and care shall be taken to ensure that this is avoided and that the substrate does not become polished during power tool cleaning.
- 5.3.4. Where surface preparation is carried out in such a manner that the edge will butt up to the existing coating then the surface preparation shall extend 50mm into sound paintwork or at least until a firm edge is found. A further 50mm shall then be lightly abraded to reveal fresh material and provide a suitable key for further coating. This joint area edge shall be carefully feathered out to prevent lifting of the coating.
- 5.3.5. When the Contractor is satisfied that the surface preparation meets the requirements of the Specification he shall inform the Ministry of Public Works who shall inspect the mechanically prepared area. Any areas not conforming to the Specification shall be re-cleaned to the original standard.
- 5.3.6. After acceptance of the preparation standard by the Ministry of Public Works Inspector the area shall be cleaned down thoroughly. Loose material and dust

residues shall be completely removed from the prepared surface by brushing and vacuum cleaning or blowing with clean, dry compressed air.

- 5.3.7. Following cleaning the surfaces shall be tested for the presence of soluble iron salts in the form of Fe^{++} and Fe^{+++} . The approved test method is that defined in ISO 8502-6 Bresle method. The maximum permitted tolerance is 25mg/ltr. Any surfaces found in excess of this level will require high-pressure water washing as defined in clause 4.11.1 followed by re-cleaning in accordance with 5.3.
- 5.3.8. Paint application shall be carried out as soon as practical after mechanical cleaning and before the onset of fresh surface rusting.

5.4. Equipment and Operation.

- 5.4.1. All equipment used for power tool cleaning shall be air driven. All items including but not limited to grinding wheels and power wire brushes shall not be used in excess of their designed specification.
- 5.4.2. All power equipment shall be used in a manner that no burns, sharp edges or cuts are left on the surface.

5.5. Areas That Cannot Be Power Tool Cleaned.

- 5.5.1. For areas which blast cleaning or power tool cleaning is impractical or cannot be permitted, hand tool cleaning shall be used.
- 5.5.2. Preparation prior to painting shall be as detailed in section 5.3.
- 5.5.3. Loose mill scale, loose rust, weld flux, spatter and loose paint shall be removed from the surface by hand brushing, scraping, chipping or other hand impact tools or by a combination of these methods. Stratified rust or scale shall be removed by chipping or hammering. When prepared surfaces are taken up to an existing painted surface the joint shall be carefully feathered out to prevent lifting of the old coating and provide a sound base for new coating. Final preparation standard shall be as detailed in section 5.3

6. Application of Coatings.

6.1. General.

6.1.1. The paint shall only be applied in the manner detailed by the manufacturer (e.g. brush, roller, conventional or airless spray). Roller application does not 'wet' the surface as efficiently as spray or brush application and this method shall only be used if it is the sole application method recommended by the manufacturer.

6.2. Spray Application.

6.2.1. Lines and pots shall be thoroughly cleaned before addition of new materials with the manufacturers' recommended cleaner. The spray gun shall be held between 450mm and 600mm from the surface to be coated at right angles to the surface. Uniform, parallel passes shall be made with the spray gun. In application of material, each spray pass shall overlap the previous pass by 50%. Large surfaces shall always receive passes in two directions at right angles to each other. Spray width adjustments on the gun and the re-adjustment of atomising pressure at the regulators shall be made until an acceptable spray pattern is found.

6.2.2. A complete range of tips with the varying spray angles and orifices, as recommended by the paint manufacturers' for each specific steel configuration to be coated, shall be available.

6.2.3. Each Coat is to be applied uniformly and completely over the entire surface. All runs and sags shall be brushed out immediately.

6.3. Brush Application.

6.3.1. Coatings shall, with the prior approval of the Ministry of Public Works be brushed onto all areas that cannot be properly spray coated.

6.3.2. Brushes used in paint application shall be of a type and quality that will permit proper application of paint. Round or oval brushes generally are considered most suitable for rivets, bolts, irregular surfaces and rough or pitted steel. Wide flat brushes are suitable for large flat areas but they should not have a width of over 120mm. No extending handles shall be allowed on paintbrushes.

6.3.3. The brushing shall be done so that a smooth coat, as nearly uniform in thickness as possible, is obtained. There should be no deep or detrimental brush marks. Paint shall be thoroughly worked into all crevices, corners or previously coated surfaces. Runs or sags shall be brushed out.

- 6.3.4. When brushing any of the solvent type coatings, care must be taken so that no lifting of coats occurs.
- 6.3.5. Where brush application is the main method of paint application e.g. maintenance painting of congested steelwork, paint shall be delivered only in no greater than 5 litre containers.

6.4. Coating thickness.

- 6.4.1. Minimum DFT's (Dry Film Thicknesses) are specified in the paint schedules attached to this Specification (unless otherwise stated).
- 6.4.2. All Contractors personnel shall possess and use wet film thickness gauges and it shall be their responsibility to ensure that the specified wet film thickness is achieved. These gauges shall be of the metal variety.
- 6.4.3. If the minimum dry film thickness of each coat is not achieved then subsequent coats of the same generic type shall be applied until the specified thickness is reached.
- 6.4.4. The maximum dry film thickness of each coat should not exceed the specified thickness for each coat by more than 30%. If excessive film thickness is found the area should be re-prepared and re-coated to specification.

7. Painting.

7.1. Manufacturers' Recommendations.

- 7.1.1. All painting shall be carried out in conformity both with this Standard and with the paint manufacturers' recommendation. In the event of divergences or discrepancies the Ministry of Public Works will decide the requirements probably after reference to the manufacturer. All paints in any one particular system, shall originate from one paint manufacturer.
- 7.1.2. Particular attention shall be paid to the manufacturers' instructions on storage, mixing, thinning and pot life. The paint shall only be applied in the manner detailed by the manufacturer e.g. brush, conventional or airless spray and shall be applied under the manufacturers' recommended conditions.
- 7.1.3. Minimum and maximum time intervals between coats shall be closely followed. This is of particular importance at high ambient temperatures (around or above 35 deg. C). In general, over coating time should be kept to a minimum to prevent contamination. If maximum over coating times are exceeded, reference should be made to the manufacturer.

7.2. Environmental Conditions.

- 7.2.1. Coating operations shall not take place at temperatures below 5 deg C and above 40 deg C, when the relative humidity is greater than 95% or when the metal surface temperature is less than 3 deg C, above the ambient dew point or outside daylight hours (Except when a paint system is recommended at these temperature and humidity levels). Coatings shall not be applied to surfaces exceeding 40 deg C. Painting may also be suspended due to wind speed or at the direction of the Ministry of Public Works.
- 7.2.2. Items on which painting is to be carried out shall be enclosed and protected from the environment whenever possible.

7.3. Protection of Equipment.

- 7.3.1. The Contractor shall ensure that adequate masking and protection is given to all items not being coated to prevent contamination from overspray. (Refer to 4.5.)
- 7.3.2. The Contractor shall avoid contamination of any adjacent items of plant from overspray, drips or spillage, and provide appropriate protection where necessary. If any such contamination does occur the Contractor shall remove it in a manner that is acceptable to the Ministry of Public Works ensuring that no defect in the system occurs in consequence. Should this not be possible then the surface is to

be suitably re-prepared and coated to the Ministry of Public Works's satisfaction.

7.4. Surface Preparation Prior to application of any Coating.

- 7.4.1. Prior to over coating any surface the substrate shall be inspected for the presence of contamination and, in particular, chlorides. If, after testing, levels above 25mg/ltr are found the substrate shall either be cleaned using a water pressure washer or in another manner acceptable to the Ministry of Public Works.
- 7.4.2. Ministry of Public Works approved mastic sealant material compatible with the selected coating system shall be used on all newly assembled components, fittings, attachments or bonds where a surface is likely to create an intimate contact.
- 7.4.3. In crevices or intimate metal contact points where dismantling is not possible, desirable or at the discretion of the Ministry of Public Works, suitable Ministry of Public Works approved penetrating oil or corrosion inhibitive grease shall be injected into the crevice. Inhibitive grease shall be suitable for use at ambient temperatures up to 40 deg C.
- 7.4.4. Friction grip surfaces shall not be sealed
- 7.4.5. Washing should take place where required by the Ministry of Public Works and practicably between all coats of paint. Atmospheric contaminated surfaces shall be rinsed with potable water.
- 7.4.6. Where surfaces have been contaminated by hydrocarbon containing fluids surfaces shall be cleaned with solution of non-flammable Biodegradable degreaser (or equivalent) followed by rinsing with clean potable water.
- 7.4.7. Prior to application of any paint films, damage to preceding coats shall be repaired to the requirements of this specification.
- 7.4.8. The surface preparation and painting specification on previously painted surfaces shall be specified in the specific Government of Bermuda Project Specifications.
- 7.4.9. Where previously painted surfaces are to be over painted for maintenance coating purposes, the dry film thickness shall be measured and recorded prior to coating.

7.5. Mixing.

- 7.5.1. Hand mixing or “boxing” of paints shall only be permitted for containers up to 5 litres. All larger containers shall be mixed by mechanical agitators and brought to a uniform consistency.
- 7.5.2. Two-pack paints shall be mixed in strict accordance with manufacturers’ instructions. The pot life and Induction times of such paints shall be specifically noted. Any mixed paint that has exceeded its pot life shall be discarded, irrespective of its apparent condition.
- 7.5.3. Paint that has livered, gelled or otherwise deteriorated during storage shall not be used however; thixotropic materials that have to be stirred to normal consistency are acceptable.

7.6. Painting Procedure.

- 7.6.1. Application of primer or any subsequent coat shall not be carried out until the Ministry of Public Works is satisfied that all requirements relating to surface cleanliness, surface condition, mixing, environmental conditions, methods or application equipment and the Ministry of Public Works’s safety procedures are being strictly adhered to.
- 7.6.2. The methods of application shall be selected to ensure that the paint is applied in a uniform manner to the prescribed film thickness without any runs, sags, drips or other imperfections.
- 7.6.3. The pressure and volume of the compressed air used for spray application shall meet the work requirement and be free from oil and water contamination. Traps, separators and filters shall be emptied and cleaned regularly. Brush application of primers shall be carried out on mechanically prepared surfaces.
- 7.6.4. During maintenance painting, the first coat applied to a mechanically prepared substrate where the surface has been roughened by external corrosion shall be brush applied. The primer shall be thoroughly brushed into the surface to ensure adequate wetting of pitted or rough areas.
- 7.6.5. The paint system shall be as detailed in the schedules, which show the minimum dry film thickness unless otherwise specified.
- 7.6.6. A brush applied stripe coat of the specified coating material shall be applied to all areas of restricted access, bolt holes, edges of flanges, ends of sections, rivets, irregular surfaces, rough or pitted surfaces, mouse holes, weld areas, abutments, welds and corners prior to application of the first coat. Subsequent coating will be carried out with the stripe coat being applied before the full coat.
- 7.6.7. Following the application of each further coat, a stripe coat will be applied in a contrasting shade. Under no circumstances will it be permitted for a full coat or stripe coat to receive a coating of identical shade.

- 7.6.8. Stripe coats shall be applied for each coat of paint specified and they shall be subjected to the same conditions of application and inspection that applies to any other coating process.
- 7.6.9. In all instances where two or more coats of the same paint are specified, such coatings shall be of contrasting colours so that each stage of the work can be readily identified and film thickness determined accordingly.
- 7.6.10. A holding primer or temporary protective primer may be used to facilitate protection of a blast-cleaned substrate. Such primers shall in no way replace the function or part of the film thickness of the priming coat and shall be subject to approval by the Ministry of Public Works prior to use.

7.7. Colour Coding.

- 7.7.1. The final colour of all coatings shall be as detailed in the “the Ministry of Public Works Identification Colours” of Section 11 of this specification.

7.8. Patch Repairs.

- 7.8.1. All points of damage to paintwork incurred at any stage of the work, including site welding operations, shall be re-prepared by blast cleaning with the specified priming coat and finish coat to restore the film thickness. In all such instances preparation shall extend 50mm (2 ins) into the sound paintwork and a further 50mm (2 ins) of sound paintwork shall be lightly blasted to etch the surface. All coatings shall be feathered back to a firm edge. Repainting shall then cover the prepared surface and the etched paintwork. Where blast cleaning cannot be carried out surface preparation of points of damage by scraping and power tool cleaning is acceptable providing specific approval is given by our the Ministry of Public Works In such instances, modification of the originally specified primer may be necessary to suit the changed method of surface preparation

8. Inspection.

8.1. Delineation of Responsibility.

- 8.1.1. The Contractor is responsible for all quality control on the project including inspection, testing, laboratory services and supervision, as well as carrying out special quality control test set-ups and measures, as described herein.
- 8.1.2. Full time or part-time inspection of the entire preparation and paint application process may be undertaken by the Ministry of Public Works. Such Inspection shall not relieve the Contractor from his quality control responsibilities.
- 8.1.3. The Ministry of Public Works may during the contract inspect plant; equipment, accessories etc. associated with any aspect of the contract and shall reject any item considered unserviceable, unsuitable or inadequate.
- 8.1.4. The Contractor shall replace to the satisfaction of the Ministry of Public Works such rejected equipment.
- 8.1.5. All inspections by the Ministry of Public Works will be carried out when in the opinion of the Ministry of Public Works such inspections are justified.
- 8.1.6. The Contractor shall give the Ministry of Public Works 24 hours notice prior to commencement of surface preparation and/or painting operations.

8.2. Hold Points.

- 8.2.1. The Ministry of Public Works operate a system of “Hold Points” - a system whereby a Contractor may not proceed until clearance by the Ministry of Public Works is given. The following “Hold Points” shall be established.

Hold Point

- a) The Contractor shall submit a detailed work plan including but not limited to surface preparation methods and equipment, painting methods and equipment quality control methods and equipment and environmental controls to be undertaken.
- b) Approval of dust preventive and equipment protection measures.
- c) Before surface preparation and before first coat application.
- d) Before application of each succeeding coat.
- e) After application of the final coat and Spark testing where appropriate.
- f) On completion of the remedial works.

- 8.2.2. All “Hold Points” shall be strictly observed and any surface preparation or coating undertaken without “Hold Point” clearance shall be re-worked at the Contractor’s expense.
- 8.2.3. Hold points shall be clearly detailed on any quality plans submitted.

8.3. Inspection Equipment and Calibration.

- 8.3.1. Every contractor’s employee in the position of painter, chargehand, foreman Inspector, and above will possess a metal wet film gauge of a type acceptable to the Ministry of Public Works. Plastic wet film gauges shall not be permitted to be used.
- 8.3.2. The Contractor shall have a comprehensive range of inspection equipment and traceable calibration plates at the site of any work in progress, which will be adequate to carry out inspection to a degree acceptable to the Ministry of Public Works on all surfaces being coated.
- 8.3.3. The Contractor shall have sufficient “sets” of inspection equipment to obviate any delays in inspection at any work site.
- 8.3.4. The Contractor shall on demand permit the Ministry of Public Works to use any inspection equipment. If the equipment is deemed inadequate or unsuitable to carry out inspections, alternative equipment will be provided by the Contractor to the satisfaction of the Ministry of Public Works.
- 8.3.5. The Contractor will provide a calibration certificate for instrumentation, if required by the Ministry of Public Works.
- 8.3.6. Inspection equipment, which cannot be calibrated, shall, if considered unserviceable or unsuitable by the Ministry of Public Works be replaced by the Contractor.
- 8.3.7. The Contractor and the Ministry of Public Works’s inspector when inspecting the dry film thickness of a paint film applied to a blasted surface will set up gauges using the relevant thickness of an insulative shim over a blasted surface i.e. a specimen plate or the blasted substrate which will be reblasted as required. The specimen plate will be of the similar material as the surface to be painted.
- 8.3.8. The thickness gauge shall be calibrated prior to use each day, using foils in the film thickness range being checked over the type of surface being coated. If used on a continuous basis, calibration shall be performed every two hours.

8.4. Physical Measurements.

- 8.4.1. The following physical measurements shall be carried out:
 - a. Surface Amplitude on blasted steel.
 - b. Relative Humidity - Dewpoint.
 - c. Wet Film Thickness.
 - d. Dry Film Thickness.
 - e. Soluble contaminants.
 - f. Holiday Detection.
- 8.4.2. Measurements are to be made jointly with a Ministry of Public Works Inspector. All results shall be accurately recorded and submitted to The Ministry of Public Works.
- 8.4.3. For field measurements of surface amplitude on blasted steel, replica tape (“Testex” ® or approved equivalent) and a portable micrometer shall be used. Alternatively Surface Profile Comparators may be used. Testex replicas shall be taken on commencement and ceasing blasting work each day or at each shift change. The frequency of additional profile readings shall be at the discretion of the Ministry of Public Works
- 8.4.4. A sling psychrometer or whirling hygrometer shall be used to measure relative humidity.
- 8.4.5. The wet film thickness shall be spot checked in random areas as an initial indication of the required film thickness.
- 8.4.6. The dry film thickness of individual coats and of the total coating system shall be checked by means of a suitable electronic thickness gauge with a recording facility or the Ministry of Public Works approved alternative instrument. However, below 50 microns, dry film thickness cannot be measured accurately. In the event that low dry film thickness cannot be recorded a “PIG or Tooke ”destructive gauge may be utilised.
- 8.4.7. Dry film thickness measurements shall be taken covering each coat prior to application of following coats. The frequency of measurement shall be taken in accordance with SSPC PA2 (revised edition) or at the discretion of the Inspector but shall not be less than one (1) reading per five (5) square metres of flat surface, with additional readings on more complicated items and particularly at changes in section, corners or edges.
- 8.4.8. Surfaces washed by a Biodegradable degreaser and subsequently washed with potable water, or those washed after detecting high levels of soluble iron salts may be tested in order to ascertain the degree of soluble chlorides on the washed surface, the Contractor will provide “Quantab’s or Merckoquant ®” test papers to facilitate testing.

- 8.4.9. Holiday Detection will be carried out at the direction of the Ministry of Public Works to ascertain coating integrity. The calibration voltage shall be 125v per 25 microns of coating. All safety guidelines/rules shall be complied with when utilising this equipment. The Holiday Detector shall be of the DC non-pulse type unless otherwise authorised by the Ministry of Public Works
- 8.4.10. Surface cleanliness can be established via a “dust tape” test.

8.5. Adhesion Tests.

- 8.5.1. Paint adhesion tests shall be conducted on painted surfaces as directed by the Ministry of Public Works. Adhesion testing shall generally be applied to the completed, cured paint system, but with additional intermediate tests carried out at the Ministry of Public Works’s option wherever concern that adhesion may be inadequate due to improper surface preparation, contamination, inadequate or excessive curing between coats, or other reasons.
- 8.5.2. The adhesion test method shall be subject to approval of the Ministry of Public Works, and the acceptance level shall be set for each coating system by reference to panel test results and the paint manufacturer’s recommendations.

9. Safety.

9.1. General.

- 9.1.1. When the Contractor supplies paints, solvents or chemicals he shall ensure that product data sheets and product safety sheets (MSDS) are available at the worksite at all times.
- 9.1.2. The paint and equipment manufacturer's safety precautions for their products shall be considered as part of this specification. In cases of conflict, the manufacturer's recommendations apply.
- 9.1.3. All air hoses, blast hoses, spray lines and any other hoses that are subjected to any internal pressure shall be marked with cable identification digits showing the date they were first brought into service. Those hoses shall be provided with certificates of conformity or test certificate stating the safe working pressure, which shall NOT be exceeded.
- 9.1.4. The Contractor shall be responsible for checking all hoses and pressure items on at least a once weekly basis to establish wear and electrical conductivity. Any items showing signs of wear or a breakdown of its conductivity shall be replaced so as to prevent any possibility of bursts or static discharge etc.
- 9.1.5. The Contractor shall maintain a log that records the date, findings and action taken on all safety inspections carried out by his personnel on his equipment.
- 9.1.6. The Contractor shall ensure that all required fire-fighting equipment for development in high-risk areas including but not limited to paint mixing areas and close to any diesel driven plant is always in a position approved by the Ministry of Public Works
- 9.1.7. Where it is impossible to maintain the atmosphere free of flammable gas, extreme care shall be exercised to prevent ignition by the action of tools uses. Low energy-sparking tools are recommended, however even they can, under certain conditions, cause ignition of flammable or explosive atmospheres.
- 9.1.8. Impact of any metallic tool against iron or steel, which has been coated with a light metal such as aluminium, can be particularly hazardous. Surfaces known or suspected of being of this nature shall be kept wet while being brushed, scraped or chipped.

9.2. Personnel Protection.

- 9.2.1. The Contractor shall provide all items required by his personnel to ensure that they are adequately protected whilst carrying out their duties. Contractors' personnel working above water shall wear at all times a suitable life vest or approved flotation vest.
- 9.2.2. The recommendations for personal protection and for protective equipment, as given in the publication "Personal Protection Advice for the use of Marine Paints and Compositions" (published by the Paintmakers Association of Great Britain) shall be met in full.
- 9.2.3. Eye protection shall be worn at all times.
- 9.2.4. All persons employed in the blasting and spraying of coatings shall wear air-fed masks or helmets that shall be coupled to a clean air supply fed by an independent filtered source. The mask shall be ventilated by clean, cool air served through a regulator filter to prevent blasting residues or vapour from being inhaled by the operator. Filters shall be changed at suitable intervals and at least as recommended by equipment manufacturers. Masks or helmets shall be provided by the Contractor. The minimum requirement shall be one mask or helmet for each individual likely to perform blasting or spray-painting operations during normal working.
- 9.2.5. The blaster shall wear suitable ear protection E.A.R. earplugs or an approved equal.
- 9.2.6. Blast helmets and hoods will be cleaned and disinfected and action logged weekly.
- 9.2.7. All persons engaged in the mixing and application of paint shall wear appropriate protective clothing at all times, nylon overalls are not permitted.

9.3. Surface Preparation Operations.

- 9.3.1. Blast hoses shall be inspected prior to use on a daily basis by visual means and any defects assessed and repaired or hose replaced.
- 9.3.2. The deadman handle shall be attached to the blast hose as close to the blast nozzle as is practical and shall not in any circumstances be held in the "on" position by any means other than hand pressure.
- 9.3.3. The work area shall be adequately roped off and appropriately signed, such as "DANGER - GRIT BLASTING IN PROGRESS".

- 9.3.4. Precautions shall be taken to ensure that drains are protected to avoid blockage or be contaminated with flammable materials. The Contractor shall take all necessary precautions and shall ensure that no damage will occur to adjoining structures, paintwork or plant by ricochet blast abrasives.
- 9.3.5. Spent grit shall be removed from the workplace in a timely and neat fashion and disposed of in a manner, which will not result in a safety hazard. Disposal methods shall be approved by the Ministry of Public Works. The Contractor shall assume that spent abrasive disposal will be shipped off island unless otherwise agreed.

9.4. Painting Operations.

- 9.4.1. Handling, mixing, and application of the paints and coating materials shall be done strictly in accordance with the Vendors recommended procedures to ensure personnel safety. Safety precautions shall be clearly described on the technical data sheets of paints and coating materials supplied, as well as on the containers. Where this Standard indicates restrictions on the use of certain materials, these limitations shall be adhered to strictly.
- 9.4.2. Solvent drums shall be grounded and containers receiving solvents shall be electrically bonded to the drums by a suitable cable and clamp.
- 9.4.3. The work area shall be adequately roped off and appropriately signed, such as 'DANGER - EXPLOSION RISK MIXING AND APPLICATION OF PAINT IN PROGRESS'.
- 9.4.4. All oil, solvent or paint soaked rags shall be stored in closed containers. Clothes, overalls and other like materials shall be stored to prevent fire from spontaneous combustion.
- 9.4.5. In areas where power tools are being used to remove coatings or rust, precautions shall be taken to eliminate contamination of adjacent areas, and injury to personnel in close proximity to the operation.
- 9.4.6. Empty paint containers shall be stored and disposed of in a manner and place as required by the Waste Management Section of the Ministry of Public Works. All storage and disposal to be at the Contractor's expense.

10. Vendor and Contractor Responsibility.

10.1. Vendor Responsibilities.

10.1.1. The Vendor (which may be the paint manufacturer) shall ensure that all Contractors and Inspectors and the Ministry of Public Works are supplied with up to date data sheets before any painting and coating commences. The Ministry of Public Works shall be notified immediately when changes to data sheets, product number etc. occur.

10.2. Contractor Responsibility.

10.2.1. The painting Contractor shall ensure that up to date data sheets and MSDS sheets are obtained from the paint Vendor before commencing painting and coating.

11. Colour Codes

11.1. Primers and Holding Primers

Red Oxide or Yellow Colour

11.2. 1st Coats

Dark Grey

11.3. 2nd Coats (where defined)

Dark Red/Green

11.4. Finish Coats

Light Grey



Ferry Dock Rehabilitation 2016
Hamilton and Dockyard Terminals

Bermuda

Annex D:
Drawings and Reference Documents

Date: November 2016



Reference Drawing List

General

61/01/01/T1	Title Sheet
61/01/01/T2	General Notes
61/01/01/T3	Standard Barge Units
61/01/01/T4	Standard Barge Attachments
61/01/01/T5	Standard Aluminium Platforms
61/01/01/T6	Standard Aluminium Gangways & Ramps

Hamilton Terminal

13/26/02/HT2	Site Plan
13/26/02/HT3	Barge Assembly Plan
13/26/02/HT4	Aluminium Assembly Plan
13/26/02/HT5	Assembly Connection Details
13/26/02/HT6	Ballasting Plan
13/26/02/HT10	Gangway Pier Extension
13/26/02/HT11	Wall Fender
13/26/02/HT12	Mooring Piles
13/26/02/HT13	Misc. Details

Dockyard Terminal

61/45/01/DY3	Barge & Aluminum Assembly Plan
61/45/01/DY4	Assembly Connections
61/45/01/DY5	Ballasting Plan
61/45/01/DY6	Gangway Notch Plan & Details
61/45/01/DY7	Wall Fender
61/45/01/DY8	Not Included
61/45/01/DY9	Fender Details
61/45/01/DY10	Misc. Details
61/45/01/DY11	Mooring Layout



61/45/01/DY12 Mooring Details

Market Wharf

61/46/01/SG2 Site Layout

61/46/01/SG3 Barge & Aluminium Assembly Plan

61/46/01/SG4 Assembly Connections

61/46/01/SG5 Ballasting Plan



Component List

Note: The component list contains items used in the original works. Items may have changed since then so this list is to be used as a guide only. The Contractor is advised to confirm this list.

<u>Components</u>	<u>Hamilton Terminal</u>	<u>Dockyard</u>	<u>St. Georges</u>	<u>Totals</u>
Barges				
Type I	2	1	1	4
Type II	2		1	3
Type III	3	2		5
Type IV	2	1		3
Barge Connectors				
Long pins	60	33	25	118
Short pins	53	30		83
Special connector	1			1
Pile Guides				
Type I	2			2
Type II	2	1		3
Type III	1		2	3
Type IV				0
Bow Loader Unit				
	2	1	1	4
Fenders				
Type H	2			2
Type L	17	10		27
Wall fenders				0
Fender Panels				0
Gangways				
Type I				0
Type II	2	2	2	6
Type III				0
Type IV	1			1
Ramps				
Type A	2	1		3
Transition Ramp	1	1		2



HT - Type I	1			1
DY - Type I		1		1
DY - Stairs		1		1
SG - Stairs			1	1
Platforms				
Type A	4			4
HD - Type I				
HD - Type 2				
HD - Type 3				
HT - Type 1	2			2
HT - Type 2	1			1
Type B		1	1	2
DY - Type 1		1		1
DY - Type 2		1		1
SG - Type 1			2	2

END OF SECTION



Ferry Dock Rehabilitation 2016
Hamilton and Dockyard Terminals

Bermuda

Annex E:
Short Form of Contract

Note: This document is completed and signed at the time of contract award; it does not need to be completed for the Tender submittal

Date: November 2016

Table of Contents

AGREEMENT

OFFER

ACCEPTANCE

APPENDIX

CONDITIONS OF CONTRACT

1.0 Short Form of Contract - GENERAL CONDITIONS

2.0 Short Form of Contract - PARTICULAR CONDITIONS

A. References from Clauses in the GENERAL CONDITIONS

B. Additional Clauses to be Added to the GENERAL CONDITIONS

AGREEMENT

The Employer is the Ministry of Public Works,
PO Box HM 525, Hamilton, HM CX, Bermuda

The Contractor is _____

The Employer desires the execution of certain Works known as _____
Ferry Dock Rehabilitation 2016 at Hamilton and Dockyard Ferry Terminals, Bermuda

OFFER

The Contractor has examined the documents listed in the Appendix which forms part of this Agreement and offers to execute the Works in conformity with the Contract for the sum of
(in words) _____

(in figures) _____

Or such other sum as may be ascertained under the Contract.

This offer, of which the Contractor has submitted two signed originals, may be accepted by the Employer by signing and returning one original of this document to the Contractor before
(insert date) _____

The Contractor understands that the Employer is not bound to accept the lowest or any offer received for the Works.

Signature: _____ Authorised to sign on behalf of the Contractor
Name: _____ Date: _____
Capacity: _____

ACCEPTANCE

The Employer has by signing below, accepted the Contractor's offer and agrees that in consideration for the execution of the Works by the Contractor, the Employer shall pay the Contractor in accordance with the Contract. This Agreement comes into effect on the date when the Contractor receives one original of this document signed by the Employer.

Signature: _____ Authorised to sign on behalf of the Ministry of Public Works
Name: _____ Date: _____
Capacity: _____

APPENDIX

This Appendix forms part of the Agreement.

[Note: with the exception of the items for which the Employer's requirements have been inserted, the Contractor shall complete the following information before submitting his offer.]

Sub-Clause	Item	Data
1	General Provisions	
1.1.1	Documents forming the Contract listed in order of priority (delete if not applicable)	Document Identification
	(a) The Agreement	_____
	(b) Letter of Acceptance	_____
	(c) Client's Request for Proposal	_____
	(d) Addenda	_____
	(e) Particular Conditions	_____
	(f) General Conditions	_____
	(g) The Specification	_____
	(h) The Drawings	_____
	(i) The Contractor's tendered design	_____
1.1.9	Time for Completion	_____ days
1.4	Law of the Contract	Laws of Bermuda
1.5	Language	English
2	The Employer	
2.1	Provision of Site	On the Commencement Date
3	Employer's Representatives	Jeremy Burnham
3.1	Authorised Person	Chief Engineer
3.2	Name and address of Employer's representative (if known)	Chief Engineer Ministry of Public Works, 56 Church Street, Hamilton, HM12

Sub-Clause	Item	Data
4	The Contractor	
4.4	Performance Security (if any):	
4.4	Amount	<u>Not applicable</u>
4.4	Form	<u>Not applicable</u>
5	Design by Contractor	
5.1	Requirements for Contractor's design (if any)	<u>Not applicable</u>
7	Programme	
7.2	Time for submission	<u>Within 14 days of the Commencement Date</u>
7.2	Form of programme	<u>Microsoft Project – Electronic & Paper formats</u>
7.4	Amount payable due to failure to complete	<u>N/A per day up to a maximum of 10% of sum stated in the Agreement</u>
9	Remedying Defects	
9.1	Period for notifying defects	<u>365 days calculated from the date stated in the notice under Sub-Clause 8.2</u>
10	Variation Procedure	
10.2	Day work rates	<u>Attach hourly rates for labour materials and equipment (details)</u>
11	Valuation of the Works	
11.1	Lump sum price	<u>Not applicable (details)</u>
11.1	Lump sum price with schedules of rates	<u>(details)</u>
11.1	Lump sum price with bill of quantities	<u>Not applicable (details)</u>
11.1	Remeasurement with tender bill of quantities	<u>Not applicable (details)</u>
11.1	Cost reimbursable	<u>Not applicable (details)</u>
11.2	Percentage of value of Materials and Plant	Materials <u>80%</u> Plant <u>90%</u>

Sub-Clause	Item	Data
11.3	Percentage of retention	10%
11.5	Period for notifying defects	365 days calculated from the date stated in the notice under Sub-Clause 8.2
11.7	Currency of payment	Bermuda Dollars
11.8	Rate of interest	0.5 % per annum
14	Insurances	
14.1(a)	The Works, Materials, Plant and fees	The sum stated in the Agreement plus 15%
14.1(a)	Contractor's Equipment	Full replacement cost
14.1(b)	Third party injury to persons and damage to property	\$ 1,000,000.00
14.1(c)	Workers	\$ 1,000,000.00
	Other Cover	
	Exclusions	None
15	Arbitration	
15.3	Rules	Bermuda Arbitration Act 1986 In accordance with the Bermuda Arbitration Act 1986
15.3	Appointing authority	Bermuda Arbitration Act 1986
15.3	Place of Arbitration	Bermuda

CONDITIONS OF CONTRACT

1.0 Short Form of Contract - GENERAL CONDITIONS

The conditions of contract are the **Conditions of Contract for the Short Form of Contract, First Edition 1999**, published by the Federation Internationale des Ingenieurs-Conseils (FIDIC).

The General Conditions of Contract are amended by the Particular Conditions of Contract.

2.0 Short Form of Contract - PARTICULAR CONDITIONS

Preamble

These Particular Conditions supplement the General Conditions, and shall modify, delete and/or add to the General Conditions. Where any clause, paragraph, or sub-paragraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such clause, paragraph, or sub-paragraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any clause, paragraph, or sub-paragraph in the General Conditions is amended, deleted or superseded by any of the following paragraphs, the provisions of such clause, paragraph, or sub-paragraph, not so amended, deleted or superseded shall remain in effect.

Clause numbers herein refer to the same clause numbers as in the General Conditions.

A. References from Clauses in the GENERAL CONDITIONS

2.0 The Employer

2.2

Permits and Licences

2.2.1

Add the following Sub-Clauses:

Where the work of the Contractor is subject to the approval or review of an authority, department of Government, or agency other than the Engineer, such applications for approval or review shall be the responsibility of the Contractor, but shall be submitted through the offices of the Employer and unless authorised by the Engineer in writing, such applications for approval or review shall not be obtained by direct contact by the Contractor with such other authority, department of Government or agency.

2.2.2

The Contractor shall ensure that a valid work permit is in place for all non- Bermudian staff working in Bermuda.

4.0 The Contractor

4.5

Facilities

Add the following Sub-Clauses:

The Contractor shall make his own arrangements for all local accommodation he may require for offices, yards, stores, labour, etc., all buildings and all services in connection therewith which are required for the efficient execution of the Works. The Contractor shall pay proper regard to the prevention of obstruction of public roads and walkways and the avoidance of nuisance to the public and to residents.

4.6

Electricity, Water and Gas

The Contractor shall be responsible for the provision of all, power water and other services that he may require for the Works and shall pay and bear all costs associated therewith.

4.7 Protection of Utilities	The Contractor shall carry out the Works so that there is the minimum of interruption to the supply of water, telephone, electricity and other services through existing mains and services. Work involving interference with existing works of any kind shall only be carried out with the permission of and during such times and in such a manner as are agreed in writing by the Engineer or competent Authority.
4.8 Reporting of Errors	The Contractor shall examine and compare the Contract Documents and shall report any errors, inconsistencies, or omissions he may find to the Engineer immediately.
4.9 Damage to Persons and Property	The Contractor shall, immediately on occurrence of any incident involving loss or injury at or about the Site, or in connection with the execution of the Works, report such incident to the Engineer or the Engineer's Representative. The Contractor shall also report such incident to the appropriate Authority whenever such report is required by Law.
4.10 Rates, Wages, Hours and Conditions of Labour	The Contractor shall pay to all Foremen, Craftsmen, and Labourers not less than the rates of wages for the various Foremen, Craftsmen, and Labourers that prevail in Bermuda, and comply with such requirements relating to hours of work and conditions of labour as are or may be laid down from time to time by the Laws of Bermuda.
4.11 Facilities for Staff and Labour	<p>The Contractor shall provide such accommodation and amenities as he may consider necessary for all his expatriate staff and labour, employed for the purposes of or in connection with the Contract.</p> <p>The Contractor shall comply with all local statutes and regulations and any amendments thereto with regard to the health and safety of his employees and others, and shall provide adequate latrines for his workers on the Site to conform with the requirements of the Department of Health.</p>
4.12 Display of Notices	The Contractor shall post notices to inform the workers of their conditions of work in conspicuous places at the establishments and work places concerned.

**4.13
Alcoholic Liquor and
Drugs** The Contractor shall not, otherwise than in accordance with the Statutes, Ordinance and Government Regulations or Orders for the time being in force, import, sell, give, barter, or otherwise dispose of any alcoholic liquor, or drugs, or permit, or suffer any such importation, sale, gift, barter, or disposal by his sub-contractors, agents, or employees.

**4.14
Arms and Ammunition** The Contractor shall not give, barter, or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same aforesaid.

**4.15
Festivals and Religious
Festivals** The Contractor shall in all dealings with labour in his employment have due regard to all recognised festivals, public holidays, days of rest, and religious or other customs.

**4.16
Epidemics** In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders, and requirements as may be made by the Government, or the local medical or sanitary authorities for the purpose of dealing with and overcoming the same.

**4.17
Supply of Drinking
Water** The Contractor shall so far as is reasonably practicable having regard to local conditions provide on the site, to the satisfaction of the Engineer's Representative, an adequate supply of drinking water and other water for the use of the Contractor's staff and work people.

15.0 Resolution of Disputes

**15.1
Adjudication** Delete Clause 15.1 in its entirety.

**15.2
Notice of
Dissatisfaction** This clause is deleted in its entirety and replaced by:

If a dispute arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer, a notice of dissatisfaction shall be issued by either Party to the other Party. Where such notice is given both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise,

arbitration may be commenced on or after the fifty-sixth day after the day on which notice of dissatisfaction was given, even if no attempt at an amicable settlement has been made.

**15.3
Arbitration**

This clause is deleted in its entirety and replaced by:

Unless settled amicably, any dispute shall be finally settled by arbitration, unless otherwise agreed by both Parties:

(a) the dispute shall be finally settled in accordance with the Bermuda Arbitration Act 1986

(b) the dispute shall be settled by arbitrators appointed in accordance with the said Act, and

(c) the arbitration shall be conducted in the English language.

The arbitrator(s) shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute. Nothing shall disqualify the Engineer from being called as a witness and giving evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute.

Neither Party shall be limited in the proceedings before the arbitrator(s) to the evidence nor did arguments previously put before the Engineer to obtain his decision, or to the reasons for dissatisfaction given in its notice of dissatisfaction. Any decision of the Engineer shall be admissible in evidence in the arbitration.

Arbitration may be commenced prior to or after completion of the Works, by mutual agreement. The obligations of the Parties and the Engineer shall not be altered by reason of any arbitration being conducted during the progress of the Works.

B. Additional Clauses to be added to the GENERAL CONDITIONS

**16.0
Arithmetical Accuracy
of Proposal**

The Client accepts no responsibility for the arithmetical or other accuracy of the Consultant's Proposal. Should it transpire after the Agreement has been executed that there are arithmetical mistakes in the accepted Proposal which would have increased or decreased the total amount of the Proposal had such mistakes not been made, the items affected will be paid for in accordance with the actual measurements of Services performed and with the unit prices inserted against the said items.

**17.0
Taxation**

The Contractor shall be required to pay Bermudian Taxes on all Contractor's Equipment (except as described in the Fifth Schedule, Section 2 of the Customs Tariff Act 1970) materials and other things of whatsoever nature brought into Bermuda for the purpose of Contract.

**18.0
Bribery**

Any commission, advantage, gift, gratuity, reward, or bribe given, promised, or offered by or on behalf of the Contractor or his agent or servant or any person on his or their behalf to any officer, servant, representative, or agent of the Employer or of the Engineer or to any person on their behalf or on behalf of any of them in relation to the obtaining or to the execution of this or of any other Contract with the Employer shall in addition to any criminal liability which may be thereby incurred subject the Contractor to the cancellation of this and of all other contracts which he may have entered into with the Employer and also to the payment of any loss or damage resulting from such cancellation.

**19.0
Debt Recovery**

The Employer shall be entitled upon a certificate in writing of the Engineer to deduct the amounts so certified from any monies or otherwise due to the Contractor under this or any other contract or to recover the said amounts as a debt due or partly the one and partly the other as the Employer shall deem advisable.

**20.0
Strikes and Lock-Outs**

The Contractor shall forthwith notify the Engineer of the commencing of any strike or lock-out and the Engineer on account of any delay caused thereby may, after consultation with the Employer, grant such extension of time as he considers reasonable without prejudice to the right of the Employer to exercise after the expiration of such reasonable extension of time the rights and powers under these Conditions in case of default by the Contractor.

**21.0
Members and Staff of
Employer and Engineer
not Personally Liable**

Neither the members nor the staff of the Employer or the Engineer shall be in any way personally bound or liable for the acts or obligations of the Contractor under the Contract or answerable for any default or omission in the observance or performance of any of the acts, matters or things which are herein contained.

22.0
Details to be
Confidential

The Contractor shall treat the details of the Contract as private and confidential, save in so far as may be necessary for the purposes thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the previous consent in writing of the Employer or the Engineer. If any dispute arises as to the necessity or disclosure for the purpose of the Contract the same shall be referred to the decision of the Employer whose award shall be final.

23.0
Rights and Remedies
Not Waived

In no event shall the making by the Employer of any payment to the Contractor constitute or be construed as a waiver by the Employer of any breach of Contract, or any default which may then exist, on the part of the Contractor, and the making of any such payment by the Employer while any such breach or default exists shall in no way impair or prejudice any right or remedy available to the Employer in respect of such breach or default.

24.0
Patents

All concepts, products or processes produced by or resulting from the Services rendered by the Consultant in connection with the Project, or which are otherwise developed or first reduced to practice by the Consultant in the performance of his Services, and which are patentable, capable of trademark or otherwise, shall be and remain the property of the Consultant.

The Client shall have permanent non-exclusive royalty-free license to use any concept, product or process, which is patentable, capable of trademark or otherwise produced by or resulting from the Services by the Consultant in connection with the Project and for no other purpose or project.