



**THE GOVERNMENT OF ANTIGUA AND BARBUDA**



**Department of Environment  
MINISTRY OF HEALTH AND THE ENVIRONMENT**

**REQUEST FOR PROPOSALS  
FOR THE  
CONSTRUCTION OF AN INTERPRETATION CENTER  
AT CHRISTIAN VALLEY, ANTIGUA**

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# BID DOCUMENTS



**Chairman  
Tenders Board**  
Ministry of Finance and Corporate Governance  
Government Office Complex  
Parliament Drive  
St. John's, Antigua

**Tel:** 1 (268) 562-5825/26  
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**GOVERNMENT OF ANTIGUA AND BARBUDA**

MHE 004

03 November 2017

**Request for Expression of Interest  
Construction of an Interpretation Center at Christian Valley  
Department of Environment**

**All Prospective Vendors**

On behalf of the Department of Environment, Ministry of Health and the Environment, Tenders Board of Antigua and Barbuda invites you to submit an **Expression of Interest** in response to this request for proposal (RFP), *for the construction of an Interpretation Center at Christian Valley*.

The RFP details the requirements for the construction of the center is enclosed herein for your instruction and guidance.

**Two (2) original copies (One (1) envelope each)** of your **Expression of Interest** should be submitted in sealed envelopes and marked: **"Expression of Interest for the Construction of an Interpretation Center at Christian Valley – Department of Environment"**, no later than **Friday November 10, 2017** and addressed to **"Chairman, Tenders Board Office, Ministry of Finance and Corporate Governance, Government Office Complex, Parliament Drive, St. John's, Antigua."**

Please be advised that your bid must strictly adhere to the appropriate labeling and submission date and time set out in the above, in order to be accepted.

Expression of Interest and/or Questions pertaining to this Request for Proposals should be emailed to: Attn: SPPARE Project Manager [antiguaenvironmentdivision@gmail.com](mailto:antiguaenvironmentdivision@gmail.com) and copied to [DOE@ab.gov.ag](mailto:DOE@ab.gov.ag), [tenders.board@ab.gov.ag](mailto:tenders.board@ab.gov.ag).

The Tenders Board of the Government of Antigua and Barbuda does not bind itself to accept the lowest or any other tender and will not accept liability for any cost incurred by the vendor.

The Board further looks forward to receiving your **Expression of Interest**, and thanks you in advance for your interest in this opportunity.

Sincerely Yours,

A handwritten signature in blue ink, appearing to read 'Sean Cenac', written over a horizontal line.

Sean Cenac  
Chairman

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# Request for Proposals

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# 1. Project Overview

Antigua and Barbuda, as part of its commitment to the Convention on Biological Diversity (CBD), prepared a National Systems of Protected Areas Plan and this is the basis for the work of this project. The Systems Plan provided an approach to protected areas that will include all areas of Biodiversity protection (in situ and ex situ), watershed and its associated waterways and wetlands, forest areas, marine parks, botanical gardens and the legal and institutional arrangements for the management of the system. The Systems Plan was drafted and will be updated as part of the process of the Third National Communication for Climate Change to include areas that will be protected as part of an Ecosystem based system for Adaptation (Eba).

Two of the country's International Birding Areas (IBAs) are situated within the Boggy Peak zone, namely the Christian Valley IBA (AG009) and the adjoining Walling's Forest IBA (AG008). Together, they represent Antigua's wet forest ecosystem and are ecologically important in that they support populations of nine of the eleven Lesser Antilles IBA restricted-range birds. As a matter of fact, four of these are entirely confined to these IBAs, to include, Geotrygon (mystacea), Euphonia (musica), Margarops (fuscus) and Margarops (fuscatus). Furthermore, the near-threatened white-crowned pigeon, Patagioenas leucocephala also occurs in these IBAs.

Past projects around Boggy Peak (Mount Obama) National Park have completed a bird survey and a study of the vascular plants in the area. These studies can serve as a foundation to build a biodiversity baseline. A voluntary ad hoc Boggy Peak (Mount Obama) Committee was active since 2010 and has developed a draft Business Plan and also a draft Concept Plan for the Park. Unfortunately, the issue with these documents is that they both lack conservation and sustainable financing elements. Park boundaries have been established for the park.

The Department of Environment in the Ministry of Health and the Environment, in May 2015, successfully received funding for a project from the Global Environment Facility (GEF) titled Sustainable Pathways – Protected Areas and Renewable Energy (SPPare), with a duration of January 2015 – December 2019, to enhance the financing and management of protected areas through the generation of funding through renewable energy and park fees.

The SPPare project will strengthen the protected areas system by developing the necessary legislative framework and biodiversity management requirements for Boggy Peak. Preliminary demarcation and zoning of ecologically sensitive areas of the proposed park have been developed. During the implementation of this project, a preliminary Local Area Plan (LAP), consistent with the Sustainable Island Resource Management and Zoning Plan, will be prepared for the proposed Boggy Peak and submitted to the Development Control Authority (DCA). This will be inclusive of ecologically sensitive areas and watershed areas of importance to Antigua Public Utilities Authority (APUA).

The Boggy Peak National Park is to be established as a protected site. It comprises an area just over 1,000 hectares which includes some of the last remaining wet and dry forest in Antigua and Barbuda, as well as plant and bird species of significant biodiversity value. The upper slopes consist of the country's largest and most productive watersheds, outstanding scenery and genetic material for about 28 species of mangoes and the famous Antigua Black Pineapple. All the genetic material is grown at the Agricultural Research Stations at Christian Valley and Cades Bay.

As a result of the historical background of the Boggy Peak (Mount Obama) area, it is necessary that we construct an interpretation center to coordinate activities relating to the park including participation by local, regional and international visitors.

## 2. Basis of Design

### 2.1 Overview

The design intent of the Interpretation Center as detailed below provides the explanation of the ideas, concepts and criteria that are considered to be very important to the Awarding Authority, coming out of the programming and conceptual design phases. The basis of the design, developed from the design intent, is the documentation of the primary thought processes and assumptions behind design decisions that were made to meet the design intent. The design intent evolves from more general descriptors during the conceptual design, to more specific descriptors during actual design, to in-depth and specific descriptors during the specifying stage, which are finalized during the as-built phase.

Under each area is an outline of the building construction and operation requirements to meet the needs of the Owner and the building occupants.

The basis of the design document is the compilation of the specific criteria, codes, standards, guidelines and specific project data and calculations that are the basic information that meets the Awarding Authority's requirements. This information is used to develop the design and construction documents.

The following pages included the listing of items from the design intent document followed by the basis of design to meet those requirements.

### 2.2 General building design

#### *Overview - Building Design and Function:*

The building developed with this design intent are intended to be used as an Interpretation Center facility and occasional hosting venue for public activities.

***Description of Proposed Building:***

One story structure to accommodate public and staff bathrooms, display areas internally and externally, office and recreational occupancy, storage and utility services.

**Functions and areas in the building:** (See Architectural Drawings).

The building design, construction and operation will meet the requirements for both the ADA (Americans with Disabilities Act of 1990) and the Certified Award level under the United States Green Building Council "Leadership in Energy and Environmental Design" (LEED) Green Building Rating System.

**Listing of LEED Criteria to be used: LEED Green Building Rating System 2009**

Construction materials, systems and methods will include conventionally and locally used systems that produce high-energy efficiency, facilitate the maintenance function, and reduce ozone depletion.

Material Selection Criteria: Durable Architectural Wood, low volatile organic compound (VOC) finishes, Concrete, Concrete Blocks, Stone and Porcelain tiles and Roof Assemblies. Glazing with high u-values, low shading coefficients and high visible light transmission. White Corrugated roofing. Utilize CFC-free refrigerants and no HCFC or Halon fire suppressants.

The interior office systems will be designed to facilitate the interaction of the resident personnel by means of an open space plan.

The exhibition hall will be designed to facilitate flexibility. By means of unfixed millwork and displays, the hall can be transformed for lectures, presentations and films.

Public Bathroom will include Universal Design features to provide for public functional accommodations with an option of closing off the area by use of roll-down shutter to the exhibition hall.

General principals used for design and layout: Open environment that is relatively free of structural columns to maximize flexibility. Wide spaces to facilitate and promote circulation within a security perimeter.

***Sustainable Construction and Environmental Compatibility:***

The presence of the building on site should be quiet and professional while projecting a modern yet cultural image. The building should not be too expensive or ostentatious and should complement the site in an environmentally responsive manner.

Description of Selection and use Criteria: Stone, Sand, Wood, Concrete Blocks, Roof sheeting, Rebar selections are to be quarried or manufactured within a 500-mile radius of the site.

The site should be protected with the least disturbance practical. Control erosion where required; the site has sloping topography and the design must use existing drainage systems to maximize soil retention. Reduce pollution and impacts from the automobile. Conserve natural areas by limiting extensive development onsite. Restore damaged areas to provide re-use. Manage wastewater through an environmentally manner, reduce waste and promote recycling as part of a physically public display of LEED.

Utilization of best management practices in EPA's Storm Water Management for Construction Activities. Items included are prevention of soil loss and prevention of sedimentation in storm sewers or drains.

Provide for bicycle parking.

Reduce the building and pavement footprints; impervious surfaces should be minimal.

Use Illuminating Engineering Society of North America (IESNA) "Recommended Practices Manual" for interior and exterior lighting to eliminate direct beam illumination and or local codes whichever is applicable.

Develop and implement a waste management plan and provide facilities for recycling and composting by the building occupants.

See Architectural Plans

The LEED program should be used as guidance in the selection of materials and methods on sustainable construction.

**Description of Criteria for Materials and Methods:**

The project is to utilize both regional materials and materials with recycled content where possible to achieve LEED credits. Certified wood based materials will be used where possible.

**Description of Water Efficiency within the buildings:**

Low flow water fixtures will be utilized. Fixtures will meet at minimum the Energy Policy Act.

**Indoor Environmental Quality:**

The facility shall provide a healthy and comfortable environment for the occupants and visitors alike using natural ventilation and daylight views.

With the thermal loads commonly expected in an educational and office environment with multiple computers in some workstations, projectors etc. the temperature and humidity conditions should meet the current requirements in ASHRAE Standard 55. Individual control of temperatures by the occupants is not required. Individuals however will have access to personal lighting controls within the office space.

The air quality in the facility should utilize controlled outside air ventilation as required in ASHRAE Standards and or local ventilation building codes.

A Carbon Dioxide sensor will be utilized to monitor ventilation levels based on occupancy.

Smoking will not be permitted within the building. Materials will be protected from moisture damage.

An air quality plan will not be required due to the natural ventilation criteria of the building design. Low emission and low volatile organic compounds (VOC) paints will be used.

Air distribution will be from ceiling mounted fans accompanied by large volumes of window and door openings. Split Unit AC will be used occasionally with inclement weather.

Exhaust will be provided for rest rooms.

Exhaust design criteria will be based on ASHRAE Handbook data and building codes for the restrooms.

Acoustical quality shall be designed to meet the requirements of ASHRAE standards or be based on local building codes whichever is practical base on the geographical context.

Visual quality shall conform to Illumination Engineering Society Lighting Handbook or local OECS Building Codes.

Day lighting is to be optimized in all regularly occupied areas.

General methodologies for lighting control include electronic control systems, individually for office spaces.

***Landscaping:***

The landscape design shall include the maximum use of native and local vegetation requiring the minimum of irrigation. Storm water is to be retained on site in cisterns, treated and used for the operation of plumbing fixtures.

Limit disruption of natural water flows and drainage. Reduce heat islands by ensuring adequate tree canopy cover and biodiversity.

Specific criteria proposed for design and materials selection will be based on site requirements and civil engineering drainage criteria. Use light colored materials. Use Energy Star compliant roofing.

Use minimum irrigation and captured rain for reuse.

## **2.3 HVAC System**

**Overview:**

Air distribution for general building areas (office, server room and exhibition hall) will be provided by split system wall mounted AC units with external condensers mounted on concrete platforms at ground level.

**Design Conditions:**

The HVAC systems shall comply with ASHRAE standards

Listing of conditions to be used: as listed in the ASHRAE Handbook and ASHRAE Standard 90 or local building regulations.

Ventilation, temperature and humidity shall meet the ASHRAE Standard 55 and or local building regulations.

Carbon Dioxide and smoke detection monitoring shall be included.

Listing of conditions to be used: Maximum average of 730 parts per million of carbon dioxide above the outdoor level.

Methodologies for CO2 control: CO2 sensors will monitor the CO2 average level.

The refrigerant system shall meet current environmental regulations and the requirements of the LEED Program. Natural ventilation intake via operable windows will meet or exceed 4% per Square feet for each regularly occupied spaces and service areas.

Description of proposed refrigerant: R410-A

## 2.4 Electrical System

**Overview:**

The project electrical system shall include a utility substation. The incoming power will be transformed to 110/ 220 volts three phase power for distribution to the buildings.

The electrical system will be developed based on the requirements of OECS Building Code to meet the needs of the equipment and functions installed.

Each space shall have 110 volts and 208 volts with a general three-phase panel in a central core electrical closet for local distribution. Server room to accommodate Audio, Video, Security and IT equipment.

**Design Conditions:**

The LEED program and ASHRAE Standard shall be utilized for guidance on allowable loads. All required local electrical codes shall be met.

A lightning protection system shall be implemented as required by code.

Grounding systems shall be provided for computer, telecommunications and any other such systems as required by the installed equipment.

## 2.5 Commissioning

A complete commissioning process shall be included in the project in accordance with LEED requirements. This process shall include:

- a. Assistance in the development of Design Intent and Basis of Design documents,
- b. Assistance in development of commissioning specifications,
- c. Development of initial Commissioning Plan,
- d. Review of mechanical and electrical design documents,
- e. Review of selected MEP submittals,

- f. Verify MEP construction and installation,
- g. Verify start-up of MEP systems,
- h. Verify and report on Carbon and smoke alarm systems,
- i. Assist with the compilation of O&M MEP manuals,
- j. Test the HVAC System,
- k. Verify training in MEP systems for building manager,
- l. Provide a commissioning report,
- m. Provide a post occupancy review.

Appropriate specification sections will be included in the construction documents.

## 2.6 Training

An overview training will be provided by specialist subcontractors to the operating and maintenance personnel for the facility based on the systems installed and the skills of the personnel. Thereafter, a written instruction will be developed and approved Mechanical, Electrical and Plumbing (MEP) systems based on the project submittals, and operation and maintenance documentation.

## 2.7 Documentation

Project documentation and systems manuals will be provided based on the requirements of Organization of Eastern Caribbean States (OECS) Building Codes and the Department of Environment Regulations.

The content and scope of the systems manuals is defined as the following:

### SYSTEMS MANUAL HVAC SYSTEM INDEX

1. As-built documents and Specifications
2. Operating procedures for all normal, abnormal, and emergency modes of operations

3. Sequence of operations as actually implemented, with control system data including all set points, calibration data, etc. Seasonal start-up and shutdown procedures
4. Control Systems:
  - a. System Description
  - b. Control schematics and computer graphics
  - c. Location of all control sensors and test ports.
5. A list of recommended operational record keeping procedures including sample forms, trend logs, or others, and a rationale for each.
6. Maintenance Procedures, Schedules and Recommendations.
7. Operations and maintenance manuals.

The content and scope of the O&M Manual is proposed as the following where applicable:

#### OPERATION AND MAINTENANCE MANUAL HVAC SYSTEM

##### INDEX

1. Description of system
2. Procedures and control sequences for starting, operation, and shutdown including all required emergency instructions and safety precautions
3. Installation instructions.
4. Wiring and control diagrams, with data to explain detailed operation and control.
5. Maintenance and overhaul instructions and schedules.
6. Lubricating schedule including type, grade, temperature, and frequency range.
7. Other pertinent data applicable to the operation and maintenance and/or other data specified in technical sections of the specification.
8. Corrected shop drawings.
9. Test procedures
10. Approved certifications and laboratory test reports.
11. Parts list, including source of supply and recommended spare parts.
12. Copies of warranties.
13. Name, address, and 24-hour telephone number of each subcontractor who installed equipment and systems and local representative.

The format of the commissioning report is proposed as follows:

### COMMISSIONING REPORT HVAC SYSTEM

#### INDEX

1. Design Intent and Basis of Design Document.
2. Final Commissioning Plan.
3. Records of commissioning meetings and coordination
4. Pre-start/start-up manufacturer/contractor checklists.
5. Commissioning Authority checklists.
6. Electrical Checklists
7. Verified testing and balancing report.
8. Mechanical Equipment Log
9. List of deficiencies of the HVAC system that impact HVAC system performance.
10. Training

## 2.8 Scope of Works

The Contractor should provide all necessary estimates and supporting documentation related to the full construction of the Interpretation Center.

The Contractor should perform the following functions:

- Construct the facility with adequate use of natural resources, natural lighting and ventilation as designed.
- Utilize all approved drawings pertaining to the construction of the interpretation center to include Conceptual Drawings, Site Plans, Architectural Drawings and Engineering Drawings
- Construct on site a facility that is able to withstand a category five hurricane with adequate water storage facilities.
- Execute all finishing work required for the full completion of the interpretation center
- Provide a safety plan for all employee on site and show proof of insurance

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### *Installation Work – General Instructions*

All work shall be done at such times, as the Department of Environment shall deem appropriate. The Contractor will coordinate the day-to-day work schedule. Work shall not begin in any area without specific notification of, and approval by, the Department of Environment.

Contractor will be responsible for all excavation work and the construction of the Interpretation center.

## **2.9 Project Management**

### ***Direction:***

The Department of Environment will provide supervision to oversee the work of the contractor to ensure construction is performed according to the approved standard.

It is expected that informal weekly progress and facilitation meetings will be held with the Contractor, and that a formal concise written progress report will be required from the Contractor on a no more frequent than a monthly basis in a format approved by the Department of Environment.

### ***Schedule:***

The Department of Environment intends to have work commence in FEBRUARY 2018 and have this work completed as soon as professionally possible, no later than SEPTEMBER 2018.

The contractor will provide a detailed schedule for the construction period not to exceed six months.

## **2.10 Submission and Opening of Bids**

The proposal process will be for the duration of eight (8) weeks.

- 1) RFP transmitted to prospective bidders Friday November 3, 2017
- 2) Expression of Interest Friday November 10, 2017
- 2) Informational meeting and site visits Wednesday November 15, 2017

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- |    |                        |   |
|----|------------------------|---|
| 3) | Proposal Due           | Wednesday December 13, 2017 at 12:00 PM |
| 4) | Public Bid Opening     | Wednesday December 13, 2017 at 12:30 PM |
| 5) | Final Contract Awarded | Wednesday January 10, 2018              |

Expression of Interest and/or Questions pertaining to this Request for Proposals should be emailed to:

Attn: SPPARE Project Manager

[antiguaenvironmentdivision@gmail.com](mailto:antiguaenvironmentdivision@gmail.com)

CC: [DOE@ab.gov.ag](mailto:DOE@ab.gov.ag) and [tenders.board.@ab.gov.ag](mailto:tenders.board.@ab.gov.ag)

Envelopes containing an original and three copies of the proposal must be sealed and clearly marked in large letters "*SPPARE Project Tender for the Construction of the Interpretation Center Building*".

All proposals must be received prior to 12:00 NOON on WEDNESDAY DECEMBER 13<sup>TH</sup> 2017 by:

THE CHAIRPERSON  
ANTIGUA AND BARBUDA  
TENDERS BOARD  
MINISTRY OF FINANCE BUILDING  
PARLIAMENT DRIVE  
ST JOHN'S  
ANTIGUA

The Bid Opening shall take place at the Tenders Board office at 12:30 PM on WEDNESDAY DECEMBER 13<sup>TH</sup> 2017.

## 2.11 Evaluation Criteria

Proposals will be evaluated based on a combination of the following factors:

	Evaluation Criteria	Score
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1.	Qualifications and relevant experience of the firm's project management team	<b>15 points</b>
2.	Qualifications and relevant experience of the firm's staff	<b>10 points</b>
3.	The firm's track record of successful completion of assignments similar to this proposal	<b>15 points</b>
4.	Quality of references from similar work completed recently	<b>5 points</b>
5.	Understanding of the Environmental Impact during and after construction and the quality of the proposed Work Plan	<b>10 points</b>
6.	The extent to which the proposal matches the needs of the Project	<b>10 points</b>
7.	Quality of the proposed plan for testing and acceptance of the implemented infrastructure	<b>10 points</b>
8.	Quality of the contractor's approach to knowledge transfer	<b>5 points</b>
9.	Reasonableness of cost of labour rates and of products and associated services requested	<b>20 points</b>
	Total Score	<b>100 Points</b>

## 2.12 Requirements and Format of the Proposal

Contractors responding to this RFP shall submit their proposals in accordance with the outlined format below:

Part 1 – Letter of Transmittal

Part 2 – Understanding of the Scope of Work

Part 3 – Proposed Work Plan and Schedule

Part 4 – Detailed Bills of Quantities; Labour, Material and Equipment Cost

Part 5 – Proposed Project Team, Safety Plan and Proof of Insurance

Part 6 – Relevant Experience and Three Client References

Accuracy and completeness are essential. Since the successful proposal will be incorporated into the contract, contractors are cautioned not to make claims or statements to which they are not prepared to commit contractually.

### ***Part 1 – Letter of Transmittal***

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Part 1 of the Proposal must consist of a letter of transmittal signed by an individual authorized to bind the Contractor contractually. It shall:

- Concisely identify the services offered in the proposal.
- State that the proposal will remain in effect for a period of [30] calendar days after the deadline for submission of proposals.
- Include the name, title, address, and telephone number and email address of one or more contact individuals.
- Include the name, title, address, telephone number and email address of one or more individuals who are authorized to sign a contract.

### ***Part 2 – Understanding of the Scope of Work***

Contractor shall provide a concise presentation of its understanding of the elements required in implementing the scope of work described above. Contractor should notify the Department of Environment of potential difficulties that might arise in implementing the work, and of major managerial or operational decisions that will have to be made during the term of the contract.

### ***Part 3 – Proposed Work Plan and Schedule***

The Contractor will describe the approach and tasks to be undertaken in order to successfully complete the requested work. A proposed schedule by task is to be included in tender submission.

### ***Part 4 – Detailed Bills of Quantities: Labour, Material and Equipment Cost***

In this section, Contractor shall provide detailed cost estimates for labour, materials, equipment and transportation, and all other expenses related to the Scope of Work.

Labour hours should be identified by type of labour and hourly rates, and broken down by tasks described in the Work Plan. Other expenses are to be broken down in a similar fashion (when possible), by tasks described in Work Plan.

Please provide adequate details of how cost estimates and totals were calculated.

***Part 5 – Proposed Project Team, Safety Plan and Proof of Insurance***

Staff members that will be assigned to Project should be identified, as well as their title, labour category and roles in carrying out the proposed Work Plan. This section should highlight why Contractor feels that the selected team members are ideally suited for this Project. Team member biographies (detailing relevant experience and qualifications) must be provided, as well as biographies of any alternative member if any.

***Part 6 – Relevant Experience and Three Client References***

A description of relevant work experience is to be provided, detailing the timeframe over which services were provided to specific clients. Contractors should provide a minimum of three references and indicate the name of company, contact person, address, telephone number and role of the contact person in relation to the services provided. Information of relevance to the Scope of Work should be presented to allow the Department of Environment to assess the Contractor's experience, highlighting in particular experience with LEED construction and incorporating sustainable development principles into construction practices.

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## 2.13 Limitations

The Department of Environment reserves the unqualified right to waive defects in any proposal:

- To choose or accept or reject any or all proposals submitted in response to this RFP for any reason whatsoever without explanation or justification;
- To select any firm as the party with whom it would be willing to enter into an agreement regardless of whether such party shall have submitted a proposal pursuant to this RFP at any time including the deletion, addition, modification or other changes hereto
- To make any decision in any manner as the Department of Environment may choose in its sole discretion in the determination of its own interests and irrespective of the position of any interested party that in the Department of Environment's determination is unreasonable, unfair, arbitrary, discriminatory or capricious.

The Department of Environment may consult references familiar with Contractor, regarding prior projects, management, financial resources, reputation or otherwise. Submission of a proposal in response to this RFP shall constitute permission for the Department of Environment to make such inquiries and authorization to third parties to respond thereto.

The Department of Environment makes no representations, warranties or guarantees that the information contained herein is accurate, complete or timely. The furnishing of such information by the Department of Environment shall not create, nor be deemed to create any obligation or liability upon it for any reason whatsoever, and each organization by expressing its interest and submitting its proposal expressly agrees that it has not relied upon foregoing information and that it shall not hold the Department of Environment liable or responsible therefore in any manner whatsoever.

## 2.14 Public Records Requirements

The Department of Environment shall seek to hold all proposals and subsequent submissions in confidence, to the extent consistent with applicable law, until a final decision has been made or the selection processes is terminated. Respondents are advised, however, that pursuant to LAW, all materials received by the Department of Environment which fall within the definition of "public record" as set forth in LAW, shall be disclosed by the Department of Environment upon request.

## 2.15 Addenda

All interpretations of RFP specifications, supplemental instructions and responses to individual questions will be in the form of written Addenda to these proposal documents which, if issued, will be publicly posted online on the Department of Environment's website, available to all prospective contractors: <http://www.environmentdivision.info/news.php/group/19>

## **3. Tender Document**

### **3.1 Bill of Quantities**



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All recipients of tender documents and drawings for the proposed contract (whether you submit a tender or not) shall treat the details of the documents and drawings as private and confidential. Failure to do so will result in disqualification from this and future tenders.

### 3.2.1 Dispatch of Tenders

The Tender shall be delivered before the day and hour of tender closing stated in the Invitation to Tender and in *Section 2.10 Submission and Opening of Bids*. Any bid received by the Awarding Authority after the prescribed deadline for the submission will be returned unopened to the tenderer.

The completed Tender shall be submitted using the Form of Tender, in the copy of the Tender Document provided. The drawings must also be returned at this time.

The Tender and all supporting documents shall be enclosed in a sealed envelope bearing only the words "*SPPARE Project Tender for the Construction of the Interpretation Centre Building*" with no indication of the identity of the sender. The envelope must be addressed to the following:

THE CHAIRPERSON  
TENDERS BOARD  
MINISTRY OF FINANCE BUILDING  
PARLIAMENT DRIVE  
ST JOHNS  
ANTIGUA

Below is a summary of the documents, which must be submitted and attached to the Form of Tender:

- a) Schedule A - Labour Rates
- b) Schedule B - Construction Materials
- c) Schedule C - Construction Equipment
- d) Schedule D - List of proposed Sub-Contractors.

This Tender is based on the Drawings, Specifications, and Conditions of Contract for Construction (ABIA) and Bills of Quantities hereinafter referred to as the Contract Documents.

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No unauthorized alteration or addition should be made to the Form of Tender, to the Bills of Quantities or to any other component of the Tender Document. If any such alteration or addition is made or these instructions are not fully complied with, the Tender may be rejected.

Any neglect or failure on the part of the Tenderers to obtain reliable information upon any matters affecting the cost, execution, construction, completion and maintenance of the Works and the Contract shall not relieve the persons whose Tender is accepted from any risks of liabilities for the completion of the Works, nor will any claim for increase of the Contract be entertained as a result of such neglect or failure. Quantities contained within the Bills of Quantities do not necessarily indicate conclusively the amount or the extent of works to be performed. The Contractor must inform himself, as no claims for increases will be entertained on this basis.

Tenderers are required to visit the site of the works to obtain for themselves, on their own responsibility, any information they may require prior to submitting a tender and entering into a contract. Each Tenderer, in submitting a proposal, warrants that he has investigated and is acquainted with the requirements of the Contract. Submission of a tender shall be considered conclusive evidence that the Tenderer has made such examination and knows all the conditions that will affect the Works.

Tenders must be submitted on the Form provided. All prices shall be quoted in *Eastern Caribbean Dollars (EC\$)*. Each form shall be completely filled out. Tender prices must be completed in ink. Erasures or other changes must be noted over with the signature of the Tenderer.

Each Tender must contain the name, residence and place of business of the person or persons making the Tender and must be signed by the Tenderer with his or her usual signature. Tenders by partnership MUST furnish the full names of all partners and must be signed with the partnership name by one of the members of the partnership or by an authorized representative followed by the signature and designation of the person signing. Tenders by corporations MUST be signed with the legal name of the corporation followed by the name of the Nation of Incorporation and by the signature and designation of the President, Secretary or other person authorized to bind it in the matter. Satisfactory evidence of the authority of the signer on behalf of the firm shall be furnished. All pages of the tender where entries made are to be initialed by the person signing the tender

Award of Contract will be made, if at all, to the tenderer whose Tender the Awarding Authority deems most advantageous to the Antigua and Barbuda Department of Environment. The Tenders Board can annul the tendering process at any time and is not bound to accept any tender. This can be done prior to the award of the Contract without incurring any liability to the affected tenderers.

The Tenderer to whom the award is made will be required to enter into an agreement with the Awarding Authority. This agreement will be of the same/similar form as that in the Conditions of Contract.

The Tenderer to whom the award is made will be required to furnish, and deliver to the Awarding Authority, a written Bond of Indemnity, as provided in Appendix B, in the amount of ten percent (10%) of the proposed Contract Price, and with surety thereon acceptable to the Awarding Authority. The Bond shall be furnished and maintained at the expense of the Contractor. This Performance Bond must be presented within 48 hours of the receipt of a formal notification in writing of the award of tender. Failure to provide the Performance Bond within 5 days of award of tender would lead to nullification of the agreement unless the Awarding Authority grants an extension. Within 3 days of the formal notification of the award of tender, the accepted Contractor will be required to execute a formal contract embodying the substance of the contract documents.

### **3.2.2 Increase/Decrease in Cost of Labour and Materials**

Increases/decreases in the current cost of labour and certain materials subsequent to the date for closing of Tenders will not result in an adjustment to the Contract Price.

Basic unit costs of labour and certain materials upon which the Tender is based and upon which day-works and variations will be considered shall be listed in Schedule A, B, C and D of the Form of Tender. These Schedules shall be completed and submitted with the Tender. Failure to submit them may lead to disqualification of the Tender.

Increases/decreases in the current cost of labour and materials subsequent to the date for closing of the Tenders due to Government levies and/or taxes will be considered as legitimate and binding on the Awarding Authority.

Should there be any doubt or obscurity as to the meaning of the Tender Documents or as to anything to be done or not be done under the Contract or concerning these instructions, or any other matter or thing, Tenderers shall set forth in writing such doubts or obscurity and submit them to the Chairman of the Tenders Board not later than one week (1 week) before the date for submission of Tenders. These and any other outstanding matters will be answered in writing within 3 (3) days of the date of the request for clarification.

Tenderers are to fill in all blank spaces in the Form of tender including the appendix, except where specifically instructed otherwise.

### **3.2.3 Pricing**

Tenderers are to insert rates or prices inclusive of both Materials and Labour against each item in the Bills of Quantities. Items against which no rate or price is entered by the Tenderer will be deemed to be covered by the rates or prices set against other items in the Bills.

Prices inserted shall be based on Customs Duty free imports (i.e. subject to Customs Duty of 0%, Customs Service Charge of 0% and ABST of 0%) from abroad of materials and goods required specifically for this project and shall be deemed to include for the provision of all labour, materials and plant, for transport, for deliveries to Site (where not specifically mentioned in the description), for temporary storage of materials and return of empties, for the erection, maintenance and removal of scaffolding, temporary staging, plankways, protection, etc. and for all other things necessary for the completion of the Works in accordance with the Drawings, Specifications, Conditions of Contract and Bills of Quantities.

### **3.2.4 Import Duty Concessions**

The tenderer must familiarize himself with the workings of the Customs Department and shall allow for the costs of and shall accept responsibility for preparing and processing the necessary documents involved in the importation of materials, etc. to be incorporated into the Works.

The Tenderer is to assist Nominated Sub-Contractors (if any) in the preparation of their documents so that a uniform presentation is made to the Awarding Authority's representatives.

The Tenderer must allow for all Wharfage Dues, Importer's Licenses (where applicable), Stamp Duties, taxes and charge that may be required.

### **3.2.5 Mistakes in Tenders**

Arithmetical errors discovered in the Contractor's Priced Bills of Quantities would be dealt with as follows:

- The Contractor will be given details of such errors and afforded an opportunity to confirm or withdraw his or her offer.
- If the Contractor withdraws, the tender of the second most advantageous tenderer will be examined, and if necessary this Contractor will be given a similar opportunity.
- In either case, if the tender is confirmed, an endorsement will be added to the priced tender indicating the corrective insertions and their effect on the proposed price.

### **3.2.6 Compliance with Instructions**

No tender will be considered unless it complies with the conditions set out in these instructions.

All Addenda issued by the Awarding Authority prior to the date stated for the closing of Tenders shall be attached to and form part of the Tender.

The Awarding Authority will not be responsible for any expenses or losses that may be incurred by any Tenderer in the preparation of his Tender.

The Tenderer shall be bound by his Tender except for any scope outside of the tender documents provided.

The tender shall remain valid and open for acceptance for a period of thirty (30) days from the date of the submission of the tender

The contractor must satisfy himself as to the sources of supply, the sufficiency of and means of obtaining and delivering all materials, labour, plant, equipment, etc., that are required for the successful execution, completion and maintenance of the works.

The ABIA Conditions of Contract apply to this project whether included in this Document or not, and the Contractor must therefore be familiar with them.

## **3.3 Forms and Appendices**

### **3.3.1 Form of Tender**

(Notes: The Appendix forms part of the Tender. Tenderers are requested to fill up all blank spaces in this Tender Form and Appendix).

To: The Chairman  
Antigua and Barbuda Tenders Board Ministry of Finance Building Parliament Drive  
St Johns

Sir,

Having examined the Drawings, Conditions of Contract, Specifications, Bills of Quantities and the other schedules, the attached appendix for the construction of the above-named Works, we, the undersigned,

offer to construct, complete and maintain the whole of the said Works in conformity with the said Drawings, Conditions of Contract, Specification and Bills of Quantities for the sum of:

.....  
.....(EC\$.....)

or such other sum as may be ascertained in accordance with the said conditions.

We undertake, if our tender is accepted, to commence the Works within seven calendar days (7 days) of receipt of the Project Manager’s order to commence and/or notice to proceed, and to complete and deliver the whole of the Works comprised in the Contract within ..... calendar days calculated from the last day of the aforesaid period in which the Works are to be commenced.

If our Tender is accepted we will, if required, obtain the guarantee of an Insurance Company or Bank or alternatively provide one (1) good and sufficient surety (to be approved by you) to be jointly and severally bound with us in a sum not exceeding ten percent (10%) of the above-named sum for the due performance of the Contract under the terms of a Bond to be approved by you.

We agree to abide by this tender for the period of thirty (30) days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

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.

We understand that you are not bound to accept the lowest or any tender you may receive.

Signature \_\_\_\_\_ in the capacity of \_\_\_\_\_ duly  
authorized to sign tenders for and on behalf of \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Behalf of \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_  
\_\_\_\_\_

### 3.3.2 Appendix to Form of Tender

Amount of Bond.....10 percent of contract price.

Minimum Amount of Third Party Insurance .....EC\$ 100,000.00

Period for commencement from

Project Manager's order to commence. ....7 Calendar Days

Time for completion.....Calendar Days \*\*

Amount of Liquidated Damages.....EC\$500 per calendar day

Period of Maintenance .....180 Calendar Days

Percentage for Adjustment of

Provisional Sums ..... \_\_\_\_\_ percent\*\*

Percentage of Retention . . ....5 percent of Contract Sum

Limit of Retention Money . . . ....5 percent of Contract

Sum Period of Interim Valuations .....28 days

Period of certificate approval by Project Manager ..... 5 days

Time within which payment is to be

made by Awarding Authority after Certificate is approved by PM.....15 Calendar Days

Governing Law.....Laws of Antigua & Barbuda

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Language of the Contract.....English

Mobilization – Advance Payment.....10%

Currency of contract.....Eastern Caribbean Dollars

Date for possession of site.....7 days after signing agreement

### **3.3.3 Name and Address of Awarding Authority**

The Department of Environment

Ministry of Health and the Environment

#1 Victoria Park, Botanical Gardens

Factory Road

St John's

Antigua

Tel # 268-462-4625

DOE@ab.gov.ag

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### 3.3.4 Name and Address of Contractor

To be completed by the Tenderer

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 2017

Signature \_\_\_\_\_ in the capacity of \_\_\_\_\_  
\_\_\_\_\_

Duly authorized to sign tenders for and on the behalf of \_\_\_\_\_

(IN BLOCK CAPITALS)

Address \_\_\_\_\_  
\_\_\_\_\_

Witness Signature \_\_\_\_\_ in the capacity of \_\_\_\_\_  
\_\_\_\_\_

Address \_\_\_\_\_ Occupation \_\_\_\_\_  
\_\_\_\_\_

### 3.3.5 Appendix A – Form of Board

BY THIS BOND WE ..... of.....

(hereinafter called "The Contractor") and .....

of ..... (Hereinafter called "The Surety") are held and firmly

bound unto the ..... of

..... (Hereinafter called "The Awarding Authority")

in the sum of .....

..... dollars (EC\$.....) for the payment of which sum the Contractor and the Surety bind themselves their successors and assigns jointly and severally by these presents.

Whereas the Contractor by an Agreement made between the Awarding Authority of the one part and the Contractor of the other part has entered into a Contract (hereinafter called "the said Contract") for the construction, completion and maintenance of certain Works as therein mentioned in conformity with the provisions of the said Contract.

NOW THE CONDITION of the above-written Bond is such that if the Contractor shall duly perform and observe all the terms, provisions, conditions and stipulations of the said Contract on the Contractor's part to be performed and observed according to the true purport intent and meaning thereof or if on default by the Contractor the Surety shall satisfy and discharge the damages sustained by the Awarding Authority thereby up to the amount of the above-written Bond then this obligation shall be null and void but otherwise shall be and remain in full force and effect but no alteration in terms of the said Contract made by agreement between the Awarding Authority and the Contractor or in the extent or nature of the Works to be constructed, completed and maintained thereunder and no allowance of time by the Awarding Authority under the said Contract nor any forbearance or forgiveness in or in respect of any matter or thing concerning the said Contract on the part of the Awarding Authority or the Project Manager shall in any way release the Surety from any liability under the above written Bond.

SIGNED SEALED AND DELIVERED by the said .....

..... In the presence of: -

SIGNED SEALED AND DELIVERED by the said .....

.....In the presence of: -

### 3.3.6 Appendix B – Form of Agreement

THIS AGREEMENT made the ..... day of ..... 2017

Between the Antigua and Barbuda Department of Environment (hereinafter called "The

Awarding Authority") of the one part and .....

of.....

(Hereinafter called "The Contractor") of the other part WHEREAS the Awarding Authority is desirous that certain Works should be constructed, viz. CONSTRUCTION OF THE INTERPRETATION CENTRE BUILDING and has accepted a Tender by the Contractor, for the construction, completion and maintenance of such Works for this agreement witnesses as follows:

1. In this agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
  - (a) The Form of Tender dated .....
  - (b) The Letter of Acceptance dated.....
  - (c) The Addenda Nos .....
  - (d) The Bond
  - (e) The Drawings
  - (f) The Conditions of Contract
  - (g) The Specifications
  - (h) The Bills of Quantities
  - (j) The completed Schedule of Rates and Prices
3. In consideration of the payments to be made by the Awarding Authority to the Contractor as hereinafter mentioned the Contractor hereby covenants with the Awarding Authority to

construct, complete and maintain the Works in conformity in all respects with the provisions of the Contract.

- 4. The Awarding Authority hereby covenants to pay the Contractor in consideration of the construction, completion and maintenance of the Works the Contract Price at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties have hereunto set their respective hands and seals the day and year first above-written.

SIGNED SEALED AND DELIVERED by the said ..... In the

presence of: - ..... For and on

behalf of the Awarding Authority in the presence of:

Witness: .....

Name:.....

Address:.....

Date:.....

SIGNED SEALED AND DELIVERED by the said ..... In the

presence of: - .....

for and on behalf of the Contractor in the presence of:

Witness: .....

Name:.....

Address:.....

Date:.....

## 3.4 Schedules of Labour, Materials, Equipment Rates and Subcontracting Listing

### 3.4.1 Schedule A – Labour rates

I (We) hereby certify that to the best of my (our) knowledge and belief the wages, hours of work, and conditions of labour of all work people proposed to be employed by me (us) on this project for which I (we) am (are) offering myself (ourselves) as a Contractor are fair and reasonable having regard to the statutory provisions regulating rates of wages as are in force in Antigua and Barbuda on the date of this my (our) Tender and I (we) will accept responsibility for the observance of these regulations by subcontractors employed by me (us) in the execution of the works.

The above-mentioned wages and hours of work are as listed on the following pages:

The Tenderer shall list the labour, by classification, which he proposes to have on the site for performing all of the work, together with the applicable hourly rates. The rates stated shall include all fringe benefits, overhead and profit.

Type and Class of Work	Rates of Wages (EC\$)*	Hours of Work**

\* per hour

\*\* In a normal working day

I (We) shall pay ..... Times the above rates of wages for normal overtime work in excess of ..... hours per workday and ..... times the above rates of wages for work on Sunday and Statutory Holidays.

Schedule A comprises pages      to      inclusive

Dated this ..... day of ..... 2017

.....(Signature)

(Name in Block Letters)

---

being an officer of, and duly authorized to sign on behalf of

.....

.....(Business Address)

.....

(Telephone)

(Corporate Seal)

Witness .....

Occupation .....

Address .....

.....



Address .....  
.....



Witness ..... Occupation .....

Address .....

.....



Witness ..... Occupation .....

Address .....

.....

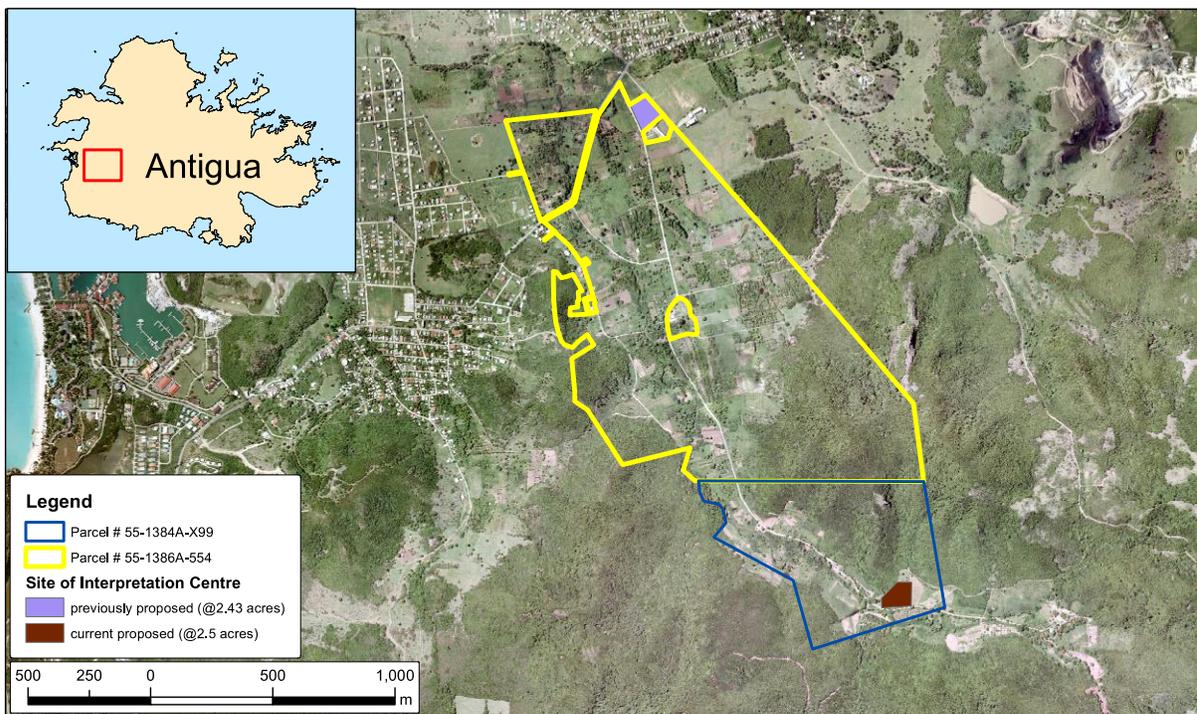
## 3.5 Preliminaries & General Matters/Conditions

### 3.5.1 Description of site

The Site is located within Christian Valley, Antigua. The site has a fair slope and reduced level excavations have been done.

The Contractor is requested to attend a subsequent informational meeting and site visit prior to final bid submission.

### Site of the Boggy Peak Interpretation Site



Created by:  
Jason Williams - Data Manager, Department of Environment

Purpose: To identify the block & parcel for the proposed BPNP Interpretation Centre  
Date Created: 10 October 2017

Data sourced from the Environmental Information Management & Advisory System - EIMAS and/or data points collected in the field using GPS Technology. Base Map source: 2010 Aerial Imagery

Published by the Department of Environment, Ministry of Health & the Environment, Government of Antigua & Barbuda



### 3.5.2 Description of Building

The building is a single story. The foundations are to be constructed and reinforced concrete elements. A cistern is included in the substructure works. The main building is a portal frame using reinforced concrete structural columns and beams as the main superstructure structural support.



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## 3.6 Tender Documents

Tenders are invited for these Works on the basis of the information contained on the Drawings, Specifications, Bills of Quantities and Conditions of Contract, etc., which are hereinafter referred to as the Tender Documents.

The Contractor shall allow in his tender for all the provisions of these documents. The information contained in the Specifications and Drawings, in scope, quantum and quality, shall take precedence respectively over that indicated in the Bills of Quantities.

Additional Tender Documents are issued per Tenderer via this link below:

<https://www.dropbox.com/s/keyogpzrpd7y8et/SPPARE%20Interpretation%20Center%20Project%202017.pdf?dl=0>

Note that the conceptual designs were developed for the initial site as illustrated in the map of Boggy Peak Interpretation Center previously shown; however, the building site has been relocated to a higher elevation with sloping topography. The full Tender Document is to be completed and returned as instructed in the Instructions to Tenderers on or before the closing date of Tenders, duly priced and with the Form of Tender fully completed.

Additional copies of the above documents may be supplied to the Contractor, if requested and charged for at cost.

CARRIED TO COLLECTION

## Conditions of Contract

A copy of the Conditions of Contract is available for inspection at the Department of Environment during normal office hours.

CARRIED TO COLLECTION

Preliminaries and General Matters: Page 2

A Exchange Controls

Payments to the Contractor shall be made in Eastern Caribbean Currency. The Contractor shall have the right to transfer monies for purposes related to this Contract only, from the island should he/she so desire, and no form of exchange control restriction will be applied providing the Contractor abides by all the Conditions of the Contract and Form of Agreement.

B Errors

Arithmetical errors discovered in the Contractor's Priced Bills of Quantities/Bills of Quantities would be dealt with as follows:

The Contractor will be given details of such errors and afforded an opportunity of confirming or withdrawing his offer. If the Contractor withdraws, the tender of the second most advantageous tenderer will be examined, and if necessary this Contractor will be given a similar opportunity. An endorsement will be added to the priced tender indicating that the corrective insertions and their effects on the proposed price.

C Registration

After execution of the Contract documents, the Contractor shall register the same with the Registrar at The Court House, Antigua and Barbuda and pay all registration fees.

D Tests and Samples

Allow the Provisional sum of EC \$6,000 to cover the cost of providing examples and any testing materials or workmanship which the Awarding Authority may direct the Contractor to have carried out in accordance with the Conditions of Contract

E Safety, Health and Welfare of Workpeople

The Contractor shall comply with all local regulations in force relating to the work people (including those employed by sub-contractors) on the site or in places where work is being prepared for incorporation into the Works and shall include all costs in connection therewith inclusive of payment to the Social Security Scheme. All Contractor's personnel must be donned in hard hats, safety boots with steel tips, safety vests, goggles, harnesses above 10'0" and ear

plugs when and as necessary to ensure the safety of site operatives. A safety program must be submitted to the Awarding Authority within 14 days of the Letter of Acceptance.

F Site Management Costs

Provide for all on and off-site management costs, including costs of foreman or competent person in charge.

**G Labour**

The Contractor shall make his own arrangement for the engagement of all labour local or otherwise, and save insofar as the Contract otherwise provided, for the transport, housing, feeding and payment thereof.

In all dealings with labour in his employ, the Contractor shall have due regard to all recognized festival days of rest and religious or other customs.

CARRIED TO COLLECTION

Provide as necessary all skilled, semi-skilled and unskilled labour required for the execution and completion of the Works. Engage all necessary unskilled labour and as much skilled labour as possible from the territory in which the project is being carried out.

If the Works necessitate any labour from outside the country, the Contractor shall bear all responsibility for providing same inclusive of making service agreements with the persons concerned and containing and paying for Work Permits as well as necessary visas, and complying with Immigration and other laws in force.

The Contractor shall, in like manner, ensure repatriation of these persons on completion of the Contract or before completion where departure of these persons is deemed necessary for public security reasons.

Work permits for overseas workers must be obtained prior to them arriving in Antigua and Barbuda and the necessary application forms can be obtained from the Labour Office, Government of Antigua and Barbuda.

All personnel engaged upon the Works should be issued with such identification documents as are necessary to identify themselves to senior Government, police or other competent authority.

Antiguan and Barbudan operatives should be given preference for employment opportunities.

A Labour On-costs

Provide for all costs in respect of all work people for: -

- a. National Insurance Contribution
- b. Pensions
- c. Annual and Public Holidays
- d. Traveling time, expenses, fares and transport e. Guaranteed Time
- f. Non-productive time and other expenses in connection with overtime necessary to complete the Contract within the date for completion N.B. When specifically requested by the Project Manager the NET extra cost of non-productive time only will be added to the Contract Sum
- g. Incentive and bonus payments

h. Sick leave

i. Costs of living allowance

j. Subsistence allowance

k. Any other disbursements arising from employment of labour within the State of Antigua and Barbuda or as required by law.

**B. General and Special Attendance**

Provide for general and special attendance on all sub-trades/subcontractors. This involves the making available of small items such as ladders, etc., to aid in their work including cleaning and making good after these subcontractors.

CARRIED TO COLLECTION

#### A. Fair Wages

The Contractor shall pay rates of wages and observe hours and conditions of labour that are not less favorable than: -

- (a) Those established under any Collective Bargaining Agreement between Employees' and Employers' Association and works organization representative respectively of substantial proportions of Awarding Authority's and works engaged in the trade or industry, whether or not the Contractor is a party to such agreement.
- (b) those established in the absence of, or subsequent to any collective agreement, under any collective agreement, under any arbitration award for work of the same character in trade or industry, whether or not such award is binding on the Contractor.
- (c) The minimum rates of wages and hours, and conditions of labour established by any law.
- (d) Those established for government employees for work of the same character in the trade or industry in the absence of any collective agreement, arbitration award or provision of law.

#### B Safeguarding the Works

Safeguard the Works, materials and plant against damage of theft including and necessary watching, fencing and lighting for the security of the Works and the protection of the public. Provide shelter for any watchman so required.

#### C Adverse Weather Conditions, including volcanic eruptions and all other associated naturally occurring phenomena.

The Contractor shall take all steps necessary to adequately protect the Works and ensure the safety of his labour and materials on site during periods of adverse weather conditions, including high winds, torrential rains etc. Provision shall be made for adequately covering and securing all loose materials, items of plant etc., securing all temporary buildings, constructing the Works in such a way as to provide the maximum bracing against high winds etc., at all times and all necessary temporary supports to the structure during such conditions.

CARRIED TO COLLECTION

Preliminaries and General Matters: Page 5

A Maintenance of Roads etc.

Maintain public and private roads, footpaths, curbs etc., and keep the approaches to the site clear of mud and other debris. The Contractor shall use every reasonable means to prevent the highway communicating with or en-route to the Site from being damaged or injured by any traffic of the Contractor's or any of his sub-contractors and in particular shall choose routes, use

vehicles and restrict and distribute loads so that any such extraordinary traffic as may arise from the moving of plant or materials shall be limited as far as reasonably possible. The Contractor is to make good any damage caused by his or any sub-contractor's or supplier's transport at his own expense or pay all costs and charges in connection therewith.

B Observance of Laws and Regulations

The Contractor shall allow for respecting and observing all laws and regulations in force Antigua and Barbuda. He shall abide by all police, health, labour or other Government Department regulations and obtain at his own expense and responsibility such license or permit required by any laws, public or municipal regulations or by-laws in force

C Protection of Public and Private Services

Protect, uphold and maintain all pipes, ducts, sewers, service mains, overhead cables etc. during the execution of the Works. The Contractor is to make good any damage due to any cause within his control at his own expense or pay any costs and charges in connection therewith.

D Area of Operations

Provide for taking reasonable precautions to prevent workmen including those employed by sub- contractors, from trespassing on adjoining property or any parts of the premises that are not affected by the Works.

E Protection of Waterways

Provide for taking all reasonable precautions to ensure the efficient protection of all streams and waterways against pollution arising out of or by reason of the execution of the Works.

G Water for the Works

Provide clean, fresh water for use on the Works, pay all charges in connection therewith, providing all temporary storage, plumbing services, connections etc. and clear away and make good on completion

CARRIED TO COLLECTION

A Lighting and Power

Provide all artificial lighting and power for use on the Works, pay all charges in connection therewith, provide all temporary connections, leads, fittings, distribution points etc. and clear away and make good on completion.

B. Fire Precautions

Before any works is carried out the Contractor is to discuss his proposals with the Chief Fire Officer to ensure that he is fully aware of any fire hazard that may be involved. He is to draw the attention of all his workmen and sub-contractors' workmen to the dangers involved in the careless disposal of matches and cigarettes, etc.

C Commencement & Mobilization Period

The Contractor will be required immediately upon acceptance of Tender and during the mobilization period to prepare and submit to the Awarding Authority a fully detailed schedule of the execution of the proposed Works, a Gantt chart, indicating programme for ordering materials for the whole Works (including Sub-contractors) together with a letter from his bank manager confirming he has sufficient collateral to finance the project and insurance certificates in accordance with the relevant contract clauses, all in an approved form to meet the completion date.

The contractor will be required to negotiate and agree the programme with all sub-contractors and after approval or negotiated amendment by the Awarding Authority. The contractor will also be responsible for the control and enforcement of the programme as necessary to ensure completion in accordance with the Conditions of Contract. No work will be allowed to start on site until the Awarding Authority has approved these programmes. Failure to provide these programmes within the mobilization period will not allow an extension of time and may result in the suspension and/or termination of the Contract.

E Liability to Taxes etc.

The Contractor shall be subject to all taxes, dues and duties imposed according to local laws, excepting Import dues, ABST & RRC on construction materials and equipment, providing that all such imports are consigned to the Interpretation Centre and clearly marked for this project and orders placed by the Contractor should therefore be counted signed by a Government Officer. Duty is not recoverable on small quantity items purchased

from local merchants. With regard to Import Duty on Contractor's Plant reference should be made to the Customs Duties Ordinance

CARRIED TO COLLECTION

Preliminaries and General Matters: Page 7

The Comptroller of Customs may give permission to any person to bring into Antigua and Barbuda any goods without payment of duty thereon, upon being satisfied that such goods are so brought in for temporary use only. Such permission shall be subject to the following conditions:

- (a) That such goods shall be taken out of the island within three months of the date of such permission; that the person to whom such permission is given shall deposit with the Comptroller of Customs the amount of duty on such goods;

If such goods are not taken out of the island within three months, the deposit in the hands of the Comptroller of Customs shall be forfeited. If such goods are taken out of the island as aforesaid, such deposit shall be refunded. Provided that the Comptroller of Customs in his discretion allow any additional period where he is satisfied that the articles are the bona fide property of any such person on a temporary visit to the island.”

If the Plant is sold rather than removed, duty will be payable. If the Plant is destroyed (with knowledge of consent of the Comptroller of Customs) duty will not be payable.

CARRIED TO COLLECTION

Preliminaries and General Matters: Page 8

## TEMPORARY WORKS

### A Temporary Road

Provide and maintain all necessary temporary roads, hard standings and crossings on and to the site, including removing access road and reinstating ground on completion.

### B Temporary and Permanent Site Buildings

(a) Provide temporary offices and sanitary accommodation for the Contractor's staff and temporary offices for construction professionals employed on the project and visiting officials, also watertight sheds for the storage of materials, tools and tackle and the use of the work men employed on the site in positions to be agreed with the Awarding Authority. Alter, shift and adapt as necessary from time to time. The office is to be equipped with adequate table, chairs, stools and shelving and a toilet complete with a minimum of one water closet compartment, one wash hand basin complete with cold running water, service connections, soap and towels. The whole office is to be adequately lit and ventilated and supplied with electrical outlets and attendance for cleaning.

(b) Include for any costs that may be incurred by the payment of taxes on temporary buildings

Allow for maintaining, including electrical charges and cleaning the above for the duration of the contract and for removal of the temporary accommodation and services connections on completion

CARRIED TO COLLECTION

Preliminaries and General Matters: Page 9

A Temporary Telephones

Provide and maintain telephone service to the office and to such other of the Contractor's and Sub-contractor's staff as may be necessary for the full period of the Works and pay all charges.

B Temporary Hoardings

Provide and maintain all necessary temporary fencing, hoardings, fans, guardrails, and the like for the proper execution of the Works, for the protection of the public and the occupants of the adjoining premises and for meeting the requirements of any local or other authority. Alter, shift and adapt from time to time as necessary. The display of notices or advertisements on hoardings and the like will not be permitted without the sanction of the Awarding Authority.

C Notice Boards

- (a) Provide and maintain for the period of the contract a suitable notice board in a position, as agreed by the Awarding Authority. It will contain the name of the Awarding Authority, Contractor, Project Manager, Architect, Quantity Surveyor and Engineer.

D General Scaffolding

Provide all necessary temporary scaffolding for the proper execution and completion of the Works.

E Mechanical Plant, Small Plant and Tools

Provide all necessary mechanical plant, including cranes, hoists, transport, concrete mixers and the like for the proper execution and completion of the Works. Provide all necessary small plant and tools for the proper execution and completion of the Works.

PROTECTING & CLEANING THE WORKS

F Protecting from the weather

Provide for carefully covering up and protecting the Works, and any adjoining property exposed by these Works from inclement weather.

G Removing Materials and Rubbish

Provide for removing all rubbish from the site and deposit in an approved dump site both as it accumulates from time to time and on completion, and for generally keeping the Works and the site clean and tidy at all times.

H Cleaning the Buildings

Provide for cleaning the buildings inside and out, removing stains and touching up paintwork and polished work, cleaning all floors, cleaning all glass both sides and leaving the whole of the Works clean to the satisfaction of the Project Manager on completion

J Protecting the Works from paint

Provide for the protection of existing tile work or finished concrete floors by employing the use of drop cloths, etc.

CARRIED TO COLLECTION

Preliminaries: Collection

From page 1

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Preliminaries and General Matters

Carried to General Summary



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## 3.7 Day-Works

### 3.7.1 Day-work

Where work arising out of a variation issued by the Project Manager cannot be properly measured and valued at the time of issuing, the Contractor shall be paid on a day-work basis. Such payments shall be the sum of the prime cost of the work and the percentage additions to each section of the prime cost at the rate set out hereunder by the Contractor.

No work will be charged as day-work unless so ordered in writing by the Project Manager

If day-work is authorized, the Project Manager shall be notified of its commencement, completion, and the expected men, machines and materials to be employed thereon.

In the event of any breach of the requirement, the Project Manager's estimate of the time will form the basis for payments. When work is to be charged as day-work, sheets signed by the Foreman and Clerk of Works are to be forwarded to the Project Manager not later than Wednesday

morning the following week in which the work was executed.

Should the Project Manager require the Contractor to work overtime or on weekends on a day-work basis, the Contractor will be paid for non-productive time but his overheads will be based on the net rate and not on the non-productive time.

### 3.7.2 Definition of Prime Cost of Day-Work

This definition applies solely to daywork carried out under or incidental to this Contract but does not cover daywork ordered by the Project Manager to be carried out after the date of commencement of the Defects Liability period, which may be the subject of a separate agreement.

#### *Labour*

Labour consists of the following elements:

The amount of wages paid at the rates applicable to workmen engaged on daywork

The amount of wages paid at the rates applicable to workmen engaged on daywork operating mechanical plant and transport and erecting or dismantling other plant

The time of principals, foremen, charge hands, and leading hands at the prime rates for the trades practiced when actually working with their hands, unless previously otherwise agreed and authorized.

The cost of overtime, where specifically ordered or subsequently sanctioned in writing by the Project Manager to be worked on daywork.

Net charge for labour:

50 Labourer hours	@	EC\$..... per hour
30 Mason hours	@	EC\$..... per hour
30 Carpenter hours	@	EC\$..... per hour
20 Plumber hours	@	EC\$..... per hour
30 Electrician hours	@	EC\$..... per hour

**TOTAL NET CHARGE FOR LABOUR**

Add % of the total of the foregoing net charge for labour in daywork in respect of all costs set out in Section 4 hereof. (This item must be extended and added to the TOTAL NET CHARGE FOR LABOUR before carrying to the summary column).

The cost of materials consists of the following:

1. The cost of materials, including delivery to site.
2. Materials supplied from the Contractor's stock at current prices plus justifiable charges for handling and delivery to site.

Provide the Provisional Sum of EC\$10,000.00 for the Net cost of materials used in daywork

Add           % of the net cost of materials used in daywork in respect of all costs set out in Section 4 hereof.

#### *Plant*

The costs of plant consist of the following:

1. Use of mechanically operated plant and transport for the time engaged in dayworks
2. Use of scaffolding, staging, trestles, tarpaulins and other non-mechanical plant, excluding hand tools, specially provided for daywork operation for such time as the Project Manager considers reasonable.

Net charge for hire of Plant

20 Backhoe with operator hrs. @     EC\$..... per hour

20 three-ton lorry and driver hrs.     @     EC\$..... per hour

20 10/7 mixer and operator hrs. @     EC\$..... per hour

20 Compressor 220 and operator hrs. @ EC\$..... per hour

TOTAL NET CHARGE FOR HIRE OF PLANT

Add % of the total of the foregoing net charge for plant in daywork in respect of all costs set out in Section 4 hereof. (This item must be extended and added to the 'TOTAL NET CHARGE FOR HIRE OF PLANT' before carrying to the summary column).

#### *Overheads*

1. Head Office Charges
2. Site supervision and site staff
3. Overtime other than allowed under Section A4
4. Time lost due to inclement weather
5. Bonuses and all other incentive payments
6. Apprentices study time
7. Awarding Authority's contribution to National Insurance, including graduated pensions
8. Fares and time allowances for travelling
9. Contributions for annual and Public Holidays.
10. Subsistence and periodic leave allowance
11. Safety and welfare facilities
12. Third party and Awarding Authority's Liability Insurance
13. Sick pay or insurance in respect thereto
14. Tool allowance
15. Use, repair and sharpening of small tools
16. All mechanically operated plant, erected scaffolding and staging and trestles, protective clothing, artificial lighting, storage facilities and the like that may be in general use on the site.
17. All other liabilities and obligations whatsoever.

## **3.8 Materials and Workmanship Specifications**

### **3.8.1 General Works**

### *Materials and Workmanship*

All materials and workmanship shall be in accordance with current good practice and shall be fit for their purpose.

### *British Standards*

BS references in this specification are to current British Standard Specifications.

### *Manufactured Materials*

Strictly observe all manufacturers' instructions. Ensure that the manufacturers' instructions are available at the site. Incompatible materials shall not be mixed (for example, metric and imperial drainage systems). Where proprietary materials are specified on the drawing, the phrase or equal approved shall be deemed to be included.

### *Alternative Materials*

"Or equal approved" means that products other than those specified may be used provided that the contractor satisfies the Project Manager as to their suitability and obtains his written approval. The Project Manager reserves the right to insist on the specified product if such approval is not given.

### *Accuracy*

Work within dimensional limits that are suited to the structural stability and final appearance of the works taking account of the need for a good fit for prefabricated components.

### *Inspections*

Give notices in respect of any work that must be inspected before covering up and do not cover up until inspections have been carried out. Such work includes pipework, drains and structural elements, e.g., foundations, ground slab and reinforcement for concrete.

### *Scaffolds*

Properly constructed scaffolds shall be provided for all work that cannot be done safely by workmen standing on permanent or solid construction, except when such work can be done safely on ladders. All such scaffolds shall be substantially constructed, to support at least four times the maximum load and shall be secured to prevent swaying.

Roof brackets, roof scantling, crawling boards and similar forms of support shall be substantial in construction and securely fastened in place when in use.

Planks used in the construction of stationary scaffolds shall not be less than 2" nominal thickness. Where such planks overlap at the ends, the overlap shall be not less than 6". Planks shall be placed so that they cannot tip under the weight of the worker at any point. Nails used in construction of scaffolds shall be of ample size and length to carry loads they are intended to support and all nails shall be driven full length. No nails shall be subject to direct pull. Barrels, boxes or other similar unstable objects shall not be used as supports for planking intended as scaffolds or places of work. No materials or equipment other than required by the workers shall be placed on scaffold platforms.

#### *Clearing and Cleaning*

Remove all timber forms for concrete or other timber not required in the permanent works from the site. Keep the site clean and tidy. On completion, remove all plant, materials, waste and rubbish. Repair any damaged existing features and clean out gutters.

Remove all stains and splashes, clean glass, remove all dust and dirt from surfaces and leave the completed structure(s) to the Project Manager's satisfaction.

### **3.8.2 Excavation and Earthworks**

#### *Site Conditions*

The Awarding Authority has undertaken trial holes and soil tests. The Contractor shall make additional local inquiries and carry out his own investigations in respect of the ground conditions, water table and other factors affecting the proposed excavations.

#### *Levels*

Set up and maintain an accurate site datum level. Carry out and record a site level grid and agree with the Project Manager. Excavate the site to the reduced levels as shown on the drawings.

#### *Foundations*

Excavate for foundations as shown on the drawings. Trenches are to be squarely dug and vertically stepped where necessary. Level and ram bottom of foundations to receive concrete. Excavate soft spots and fill with Class D concrete. Excavate, break up and remove all boulders that may be encountered. Keep excavation clear of water. Plug any pipes cut off at the perimeter with Class D concrete, rammed

immediately into at least 12" depth. For un-reinforced foundations, place concrete immediately after completing excavation. For reinforced foundations, place minimum 2" thick Class D concrete immediately after completing excavation and compact level with the back of the spade.

#### *Hardcore*

Hardcore or fill to consist of hard dry stone or broken concrete or other compactable materials approved by the Project Manager, capable of passing a 4" ring in all directions and thoroughly compacted by maximum 6" layers.

#### *Damp Proof Membrane/Underlay*

Under all concrete ground slabs, 1000-gauge polythene sheet laid over the blinded hardcore to be lapped accordance with manufacturer's instructions. Care must be taken to prevent the sheet being punctured before the placing of reinforcement or concrete. For external slabs, reduce underlay to 500 gauge.

#### *Backfill*

Backfill to all trenches to consist of hardcore or selected excavated material, free from organic matter thoroughly compacted in 6" to 9" layers. This excludes internal backfill to the building foundation, which shall be hardcore as specified above.

#### *Disposal*

Remove all excavated material not suitable for fill or top soil.

#### *Termite Treatment*

Treat the building site to prevent Termite activity. The work is to be carried out by an approved specialist, using 'Torpedo' or another approved proprietary system. The treatment is to be carried out in accordance with the manufacturer's recommendations using the higher concentrations where a range is recommended but is expected to consist at least of: Underground slabs, apply the treatment solution to the entire ground surface with additional applications at the slab perimeters and penetrations such as drains.

At each side of the foundation walls, after soil or fill has been graded to its final level, excavate a "6 X 6" trench, rod to the top of the foundation at 9" centers and apply the solution. Mix the solution with the soil and replace it in the trench.

### *Grassing*

On completion of the work, make good all disturbances to grassed surfaces caused by excavations access.

## **3.8.3 Concrete Work**

All structural concrete used on this project will be of the Type Class B

### *Sand*

No sea dredged or beach sand is to be incorporated in any of the work covered by this contract. Sand for concrete work shall be obtained from a source approved by the Project Manager and shall be sifted only where necessary on site for screeds and rendering.

All sand shall be clean and free from soil or deleterious matter and shall comply with BS 882. It shall be well graded between the limits given in BS 882.

### *Coarse Aggregate*

All coarse aggregate shall consist of clean approved hard stone or gravel, free from soil or deleterious materials and shall comply with BS 882. Sea dredged or beach aggregate shall not be used.

Once the first delivery of coarse aggregate has been received on site graded coarse aggregate, it may be necessary to blend single-sized aggregates on the site.

Both sand and coarse aggregates shall be stored on hard clean surfaces and shall be handled so as to remain clean and well graded: and shall be kept separate from one another by separating walls if space is restricted until placed in the mixture.

### *Water*

All water used throughout the works shall be clean fresh water free from harmful matter in undesirable quantities. Seawater shall not be used.

*Cement*

The cement for the whole works shall be Portland Cement (PC42.5) to BS12 of approved manufacture. Cement, which is not manufactured in Trinidad or Barbados, shall have a certified average alkali content of 0.6% or less. Cement shall be delivered in the original sealed bags of the manufacturer and stored in a suitably dry, weatherproof and properly ventilated store.

### *Concrete Mixes*

Concrete specified by Class shall be mixed in the nominal proportions stated below, the proportion of sand to coarse aggregate being carefully adjusted to provide a dense and workable concrete to the satisfaction of the Project Manager. The water content shall be

adjusted so that the slump lies within the limits stated and the quantity of water added to the mix shall be measured accurately. Batch testing shall be carried out before commencement of concreting.

#### CONCRETE CLASSES

Class of Concrete	Normal Mix	Allowable Slump	Nominal Minimum Cube Strength	Nominal Average Cube Strength
A	1 : 1 ½ : 3	1" to 3"	4500 psi	5500 psi
D	1 : 4 : 8	1" to 2"	-	-

Nothing shall be added to the essential ingredients of the concrete (cement, sand and coarse aggregate and water) without the Project Manager's approval.

### *Steel Reinforcement*

Steel bar reinforcement shall be deformed high yield steel bars complying with BS 4449. For the convenience of the contractor, the drawings may show imperial bar sizes for which equivalent metric sizes may be substituted.

Steel fabric (mesh) reinforcement shall be high yield welded fabric to BS 4483.

All reinforcement shall be entirely free from loose mill scale, loose rust, oil, grease, paint etc. Existing exposed reinforcement because of concrete splinter shall be wire brushed and be entirely free from rust, oil, grease, paint, etc. before patching Bar reinforcement in the bottom of foundations, ground beams or ground-bearing slabs must be fixed on 2" thick Class D blinding concrete.



### *Fair-faced Concrete work*

Concrete designated fair-faced shall be constructed with tightly joined smooth forms producing smooth dense concrete without staining with  $\frac{3}{4}$ " x  $\frac{3}{4}$ " chamfered arises. Any blemishes shall be made good immediately after striking the formwork to the satisfaction of the Project Manager. Plywood for fair-faced concrete shall be B-grade plywood class 1 or 2 with high-density overlay

if several re-uses are required. A sample of the proposed plywood shall be submitted to the Project Manager before use.

### *Gauge Boxes*

Gauge boxes of suitable sizes shall be employed to give exact volumes of fine and coarse aggregate but due allowance shall be made for the bulking effect of sand in wet weather and the additional water entrained in the aggregates. In all cases, the amount of cement employed in a given mix shall be based on the tables in clause 3.05 and shall be such that it is necessary to divide a full bag of cement.

### *Mixing Concrete*

The mixing of the concrete shall be carried out by means of a batch machine of approved design and capacity to be agreed with the Project Manager prior to the commencement of the works.

The mixing shall continue until there is a uniform distribution of the materials and the mass is uniform in color and consistency. The mixing time shall not be less than two minutes and the batch or any part thereof shall not be permitted to remain in the drum longer than ten minutes after being completely mixed.

### *Placing Concrete*

Before placing commences, all formwork shall be clean and free from construction debris and shall be properly oiled or lime-washed. All reinforcement shall have been placed in proper position and firmly supported and forms for all construction joints and stop ends completely installed. Runways shall have been placed and any steel disturbed, properly replaced. The formwork shall be wetted down to eliminate suction and all water used for this purpose drained away.

Immediately after mixing, the concrete shall be placed in the work in layers not exceeding 6" thick. Each layer shall be thoroughly vibrated or rammed until it has been made to penetrate and fill all the spaces between and around the reinforcement or other embedded fixtures and has properly and completely surrounded them throughout their entire length in such a manner as to ensure that all surfaces are dense and free from honey-combing or other defects. It is imperative that the work to be done quickly as well as effectively and a sufficient number of men shall be employed to ensure this. Vibrators must

be used for all columns, beams and suspended slabs and for all paths, roads or hard-standings exceeding 4" thickness.

In no circumstances shall the concrete be thrown or dropped from a height or deposited under conditions that would cause the separation of the coarser from the finer portions of the concrete. When no special placing plant is provided the concrete shall be conveyed from the mixer to the point of deposit in as short a time as possible and shall be emptied onto a tray from which it shall be carefully placed in its final positions in the forms by shovels. Concrete shall be deposited at several points in line and shall not be permitted to flow along the forms.

In columns and other similar members, the bottom 1" shall be filled with grout which shall consist of cement and water mixed to a thick, creamy consistency. In deep members in which congestion of steel makes placing difficult the lower part of the forms shall be filled with grout in the same way. The grout in each case shall be deposited immediately in advance of the concrete and shall not be permitted to dry out or set so as to lose its mobility before the concrete is placed on top of it.

#### *Stoppage of Work*

No concrete of any kind shall be placed during inclement weather. The Project Manager reserves the right to stop concrete placing during periods of excessive rainfall unless adequate precautions are taken to protect freshly placed concrete from the weather

#### *Worked Finishes*

**Tamped Finish:** when no specific finish is required, tamp to a plain or evenly ribbed finish with tolerance suitable for subsequent work or use.

**Wood Float Finish:** close the surface with a wood float to produce an even slightly coarse texture, free from ridges and depressions.

**Steel Trowel Finish:** repeatedly trowel by appropriate means (e.g. Power float) to produce a dense smooth surface free from ridges and depressions. If a thin floor finishing is to be applied no defect in the concrete should show through the finish. Maximum permissible deviation 1/8" from a 9" straight edge.

**Brush Finish:** after working to a smooth finish, draw a stiff bristled brush across the surface to produce an even non-slip finish of fine parallel line free from ridges and depressions. Trowel the margins of the panel with a steel float to produce a uniform band approximately 4" wide. Generally: Form falls where

required to ensure that all areas drain naturally towards outlets and other run-off points. All newly finished surfaces shall match existing finished surfaces.

#### *Curing of Concrete*

Concrete after taking its initial set shall be protected from drying out at all times during the first three days. Acceptable methods of curing are by flooding, by polythene sheeting in close contact, by permanently wet Hessian or by an approved proprietary curing compound which should not affect adhesion of subsequent finishes, not stain exposed concrete. During the curing period the concrete should be shaded from direct sunlight.

#### *Construction Joints*

All joints including day joints should be straight and perpendicular to the surfaces. Construction joints for slabs and beams may be located at or near the middle of the span. Construction joints for columns and horizontal wall joints shall be made only at the underside of floor members or at floor level unless otherwise approved.

Un-reinforced slabs are to be laid in bays not exceeding 20' in length and no bay should have a length exceeding 1- ½ times its width. Fabric reinforced slabs are to be laid in bay not exceeding 30' in length.

Construction joints in retaining walls shall not exceed 10' centers.

Hardened concrete faces of joints should be prepared for subsequent concrete by cleaning and roughening the face of the joint to remove laitance and expose but not disturb the larger aggregate. For horizontal surfaces, washing off laitance and fines after concreting may attain exposure, once initial set has occurred.

The Contractor shall submit for approval construction joints scheduled for walls and slabs. The contractor shall not attempt to cast a single pour of more than 20 cu.yds. (e.g. 36 x 6') without obtaining the prior approval of the Project Manager.

#### *Samples and Testing*

Testing shall be in accordance with BS 1881.

Samples for compressive strength shall be taken from concrete Classes A and B at the rate of 1 sample per 10 batches, but not less than 1 sample from each Class on each day of casting. A sample shall

consist of three standard 6" cubes that shall be cured by immersion in water until tested. One cube from each sample shall be tested at 7 days and the remaining two cubes at 28 days. Each cube shall be marked with a unique reference number and record shall be kept to record the class, date of casting and location of member corresponding to the cube. Slump tests shall be carried out for each batch.

### **3.8.4 Masonry**

#### *Cement, Water, Coarse Aggregate and Reinforcement*

To be as specified for Concrete

#### *Sand*

To be as specified for concrete. Alternatively, use sand to BS 1200

#### *Concrete Block*

Hollow concrete blocks shall be obtained from an approved source and shall be nominally 15 ½ " long by 7 ½" high by the thickness shown on the drawings and shall be handpicked for fair work where required. Actual dimensions shall not vary from nominal dimensions by more than

¼". Minimum wall thickness shall be 6-inches.

All blocks shall be cured at the place of manufacture for a minimum of 14 days before being transported to the site and offloading shall be carried out with care – tipping will not be permitted and damaged blocks must not be used. For laying in half bond, half blocks shall either be purpose made or cut from 3-core full blocks. They shall not be cut from 2-core blocks. All block work to be fair faced with flush joints, except where walls will be plastered for tiling.

#### *Mortar*

Unless otherwise stated mortar for block work and stonework is to be composed of one-part cement to four-parts sand, mixed on the site with the minimum quantity of water to achieve a workable consistency. The proportions are to be obtained by actual measurement in gauge boxes, making due allowance for bulking of wet sand.

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Mortar is to be made in such quantities as can be used within one hour after mixing and no mortar that has become set or hard must be used on any part of the work. Re-tempering is permitted only up to one hour after mixing.

#### *Block work Reinforcement*

Vertical reinforcement is to be  $\frac{1}{2}$ " dia, high yield ribbed bars except where otherwise specified. Horizontal reinforcement is to be Dur-O-Wal Extra Heavy Duty galvanized "Ladur Type" ladder reinforcement with cross bars at 16" centers and with prefabricated corners and tees.

Vertical starter bars are to be anchored in the base concrete with 8" bends located below the top layer of reinforcement, or drilled 4  $\frac{1}{2}$ " deep into the concrete and anchored with Hilti "HIT C100" resin.

At tops of walls, vertical bars are to be bent 8" into slabs or beams cast on top. Freestanding walls are to be capped with a 4" deep concrete beam reinforced with one continuous  $\frac{1}{2}$  dia. Bar, lapped 2'0" at splices and intersections.

Vertical bars are to be lapped 2'0". Horizontal ladder reinforcement is to be lapped 1'0". Unless otherwise detailed, reinforcement is to be provided as follows:

#### *Vertically*

At each corner, end or intersection

Beside each opening exceeding 2'0" in width or height

At the following centers, measured horizontally:

4" block work - 48"

6" block work - 32"

8" block work - 16" Horizontally

At the following centers, measured vertically:

4" block work - 48"

6" block work - 16"

8" block work - 16"

#### *Grout*

Grout for filling the cores of blocks to comply with the concrete specification, is to have a slump of 8 to 10 inches and is to be of the following proportions, volume:

Block Size	Cement	Sand	3/8" Nominal Size Aggregate
4"	1	3	-
6" & 8"	1	3	2

Unless otherwise specified, only cores containing vertical reinforcement are to be grouted. If

Un-galvanized horizontal reinforcement is used; all cores are to be grouted. For retaining walls, walls below ground level and walls below ground slabs, all cores are to be grouted.

#### *Workmanship*

The concrete blocks shall be laid in half bond in mortar as specified with joints nominally  $\frac{1}{2}$ " thick covering all concrete areas of the block. Blockwork shall be carefully set out at foundation and floor level so that at jambs of opening only half blocks and full blocks are used: cut blocks may be used where necessary above and below centers of openings, midway between openings and at faces of columns. Where lintels, ring beams, etc. are cast over open block cores, place Dur-O-Wal "Dur-O-Stop" mesh over cores to prevent concrete from dropping through. Grout shall be placed and compacted in maximum 4'-0" lifts. Excess mortar shall be removed from cavities before grouting. Grout shall be placed to 1" below the top of the blocks

to provide a key.

Protection shall be provided at all times as necessary to prevent damage to work done by storms and no part of a wall shall be built higher than 4'0" above the surrounding walls. Generally, conduits shall be built into the cores of new work. Otherwise, chases shall be formed as required for the installation of other work – there shall be at least 10 inches of masonry between the chases and the jambs of openings. Where chasing exposes block cores, they shall be solidly grouted. Chases exceeding 2'0" in length shall have expanded metal lath fixed over them before plastering. The lath shall be 6" wider than the chase. Unfinished work shall be stepped back to permit jointing of new work. Chasing shall not take place on both sides of the same wall.

#### *Samples and Testing*

Blocks shall be sampled at the rate of one sample per day of deliveries, but not less than one sample per 1000 blocks. A sample shall consist of three blocks, selected at random by the Project Manager. The strength of the blocks shall be measured over the gross area including voids and shall not be less than 700 psi for a single block

### **3.8.5 Carpentry and Joinery**

#### *Generally*

Comply with BS 5268: Parts 2 and 3

#### *Timber and Plywood*

All timber and plywood is to be clean, sound, merchantable, properly seasoned timber, free from any defects making it unsuitable for its function in the Works. Unless otherwise stated, timber is to be stress graded imported Southern Yellow Pine, Grade No.1 or No.2 to NGRDL rules. Each piece of timber shall be marked with the grade and species. Plywood is to be American construction and industrial A-C or B-C grade sanded plywood, marked "APA: A-C (or B-C) exterior."

#### *Preservative*

Timber and plywood are to be pressure impregnated with copper/chrome/arsenic (CCA) solution to BS 4072. After cutting or machining, brush on preservative in two applications to cut surfaces.

#### *Fastenings*

All fastenings are to be galvanized or zinc plated. Bolt washers are to be large diameter, i.e., at least 3 times the bolt diameter with a thickness of at least  $\frac{1}{4}$  of the bolt diameter.

#### *Splices*

Do not splice timber members except where shown on the drawing.

### **3.8.6 Plastering, Paving and Tiling**

#### *Materials*

As described in Concrete Work, except that sand for plastering shall comply with BS 1199. Over-sifting of sand shall be avoided. Beach sand shall not be used.

#### *Substrates*

All surfaces specified or indicated on the drawings to be plastered or rendered are to be thoroughly brushed and cleaned and well wetted before the work is executed. Plaster on concrete surfaces shall be applied to galvanized expanded metal lath, securely fixed and overlapping by 4" onto adjacent blockwork. Joints between new and existing plaster are to be carefully executed by cutting plaster on a splay as directed by the Project Manager before applying new plaster.

#### *Proportioning Mixing & Timing*

The materials used for plastering shall be proportioned by volume by means of gauge boxes. Unless otherwise specified, the proportions shall be one part of cement to between four and six parts of sand. Once an acceptable mix within this range has been determined and approved by the Project Manager, the same proportions shall be used throughout.

Mortar mixes shall be used up within two hours of the first contact of the cement with water. All mixes remaining after this time are to be discarded. No re-tempering shall be carried out.

#### *Cement Screeds*

Lay sand and cement screeds to the thickness necessary, well bonded to the sub-concrete. Screeds to be smooth and level and approved by the Project Manager prior to applying tiling or finish.

#### *Tiling*

Project Manager shall approve tiles before incorporation into the Works. Vegetable based mastic shall not be used. The cement and sand screed shall be clean and smooth and mixed only with sufficient water to bind the sand and cement. Adequate protection shall be supplied and laid by the Contractors as soon as possible after laying.

Vinyl tiles shall be of an industrial type with a minimum thickness of 3/16". Actual tile to be used will be approved by the Project Manager

### **3.8.7 Plumbing**

#### *Water Authority*

The water supply is to be executed in accordance with the requirements, regulations and approval of the Antigua Public Utility Authority, by qualified and competent workmen.

#### *Water Pipes*

Cold-water service pipes may be either galvanized steel or copper tubing with fittings to match. Steel pipes are to be appropriately jointed and provision is to be made for all bends, elbows, junctions, tees, etc. Copper pipes shall have compression or capillary fittings. Connections to each sanitary fitting are to be by means of an approved union. The use of pressure type PVC tubing will be permitted but for cold water services only and shall be installed according to manufacturer's instructions. Only proprietary brackets shall fix surface mounted pipes.

#### *Solder*

Only lead-free solder is to be used. This shall be clearly marked on the product labels.

#### *Stopcock*

Provide and fix a brass pressure screw-down stopcock on the cold-water service at point of entry to buildings showing plumbing installations. Install an isolating valve at every fixture, sinks and washbasins, water closets and showers, urinals, etc.

#### *Waste Pipes*

Run the waste pipes so as to discharge the wastewater from basins, etc. in a sanitary manner.

#### *Protection and Fixtures*

The Contractor will be responsible for covering up and protecting against damage from building materials, acids, tools and equipment, all plumbing fixtures, worktables, computers, woodworking equipment and all other equipment found in any of the buildings.

The cost of repair or replacement of damaged fixtures caused by the Contractor shall be borne by the Contractor.

### **3.8.8 Electrical Installation**

#### *Compliance with Statutory Authorities*

The electrical installation is to be executed in accordance with the requirements and regulations of and to the approval of Antigua Public Utilities Authority and the Electrical Inspectorate

Division by qualified and competent workmen.

#### *Examination of Work*

The Contractor is to process the “Application to Wire for Electricity Supply” forms and submit them to the Electrical Inspectorate Division. Make safe existing electrical installation and liaise with supply authority as necessary. Before starting work and from time to time, as the work progresses, the Contractor shall examine the work and materials installed by Subcontractors nominated or otherwise insofar as it affects his own work and shall promptly notify the Project Manager if any conditions exist that will prevent him from carrying out satisfactory work. The Contractor will be required to have sufficient workmen on site during the whole period of construction to ensure that all conduits, duct sleeves etc. can be placed in position as the work progresses.

#### *Approval, Testing, Fees and Permits*

The work shall include the provision of all necessary notices, obtaining and paying for all permits, governmental taxes, fees and other costs in connection with their work; filing all necessary plans, preparation of all documents and obtaining all necessary approvals of Government Departments having jurisdiction; obtaining all required Certificates of Inspection for the work and delivery of the same to the Awarding Authority before request for acceptance and final payment.

#### *Scope of Work*

The scope of the work includes the complete supply and installation of all electrical work shown on, or to be reasonably inferred from the drawings, specification and/or the Bills of Quantities. All existing systems are to be checked for shortcomings and corrected and upgraded where necessary and left complete and in working order on completion of the project.

#### *Materials*

All materials and apparatus required for the work shall be new, of first-class quality and shall be furnished, delivered, erected, connected and finished in every detail and shall be so selected and arranged as to fit properly into the building spaces.

### *Rejection of Work*

The Project Manager may reject any work he considers unsuitable or carried out in an un-workmanlike manner or incorporating unsuitable materials. Such rejected work shall be repaired or replaced immediately and satisfactorily to the approval of the Project Manager at the Contractor's expense.

### *Earthing*

The whole of the electrical installations and all equipment connected thereto shall be earthed in conformity with the requirements of the Utilities Supply Authority and the latest edition of I.E.E. Regulations where applicable.

### *Conduit & Accessories & Trunking*

Solid inspection elbows and tees shall NOT be used other than in exceptional circumstances. Trunking, ducting and fittings shall comply where applicable with BS 4678 or be of insulating material having ignitability characteristic "P" in BS 476, Part 5.

## **3.8.9 Drainage**

### *Excavation*

Excavations for drainage trenches shall be in straight lines and to the correct depths and gradients required. In the event of excavations being made deeper than necessary, they shall be filled to the proper level with rammed bedding Class D concrete at the Contractor's expense. All rock projections must be removed from the bottom and sides of the trench. The minimum excavation depth should provide 15" cover generally to the crown of the pipe and 3' under pads, unless protected by a concrete slab.

### *Bedding*

Drains shall be laid in a 4" bed and surround of bedding, comprising stone crushed to pass a 5/8" ring (i.e., 3/8" nominal size) and complying in other respects with the Specification for coarse aggregate.

### *Drains*

Drains shall be constructed with PVC pipes and fittings to BS 4660 or Schedule 40 to ASTM D1785-68 or D2241-69, all laid and jointed in accordance with the manufacturer's instructions. Particular care shall be taken to remove burrs and excess solvent at joints. Drains shall be laid in straight lines and to uniform gradients of at least 1:4 between manholes or inspection chambers, which shall be provided sufficiently to enable clearance of blockages from any drain run. Drains shall be kept free from earth, debris and other rubbish

#### *Testing*

Drains shall be water tested to a pressure equal to 5' head of water measured above the invert at the head of the drain. The drain should be filled, left to stand for two hours and topped up. The leakage over 30 minutes should be measured and should not exceed the following:

2½ pints per 100'0 of 3" drain

3½ pints per 100'0 of 4" drain

5 pints per 100'0 of 6" drain

#### *Manholes*

Unless otherwise specified or detailed, these are to be made of 4" solid filled block work laid in cement mortar on Class C concrete bases, properly hunched and channeled. Internal surfaces to be rendered in cement and sand (1:3) and finished with a steel trowel to a smooth hard surface. Manhole covers to be cast iron or steel to B.S. 497 Part 1. The standard of construction is to be equal to the appropriate sample manhole at the Public Works Department, which is to be inspected by the Contractor.



## **3.9 Measured Works**



<b><u>BILLS OF QUANTITIES FOR THE CONSTRUCTION OF THE INTERPRETATION CENTRE ST MARY'S PARISH, ANTIGUA AND BARBUDA</u></b>				
	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Total</b>
<b><u>BILLS OF QUANTITIES</u></b>				
<b><u>SUBSTRUCTURE</u></b>				
<b><u>EXCAVATION AND EARTHWORKS (ALL PROVISIONAL)</u></b>				
A	Excavate oversite to reduce levels; n.e. 5'0" deep; stockpile within 100m of the site	1641	CY	
B	Allow for later removing excavated materials from stockpile and dispose of offsite	1641	CY	
C	Return, fill and compact; imported scalping material as supplied by AMP; 8" layers/lifts to 95% Proctor Density.	1641	CY	
<b><u>PILE DRIVING WORKS to include for driving piles to refusal or to specified depths and cutting off piles to required elevations all to be left in readiness for pile connection to reinforced concrete caps or foundation beams (3500psi minimum); piles manufactured by others therefore no liability/guarantee is assumed for nature and strength of concrete used to make piles; piles which lose integrity while being driven must be replaced by Manufacturer</u></b>				
D	High strength reinforced concrete piles (4500 psi min); 12"x12"x40'0" long; driven on land	95	EA	
E	Cut piles to appropriate lengths and expose reinforcement to suit construction of pile capping beams	95	EA	
G	Approved scalping filling to make up levels under slabs for in-situ concrete work; leveled and compacted in accordance with the specifications; 12"-24" thick	335	CY	
F	Earthwork support to faces of excavations		Item	
H	Spray surface of excavations and fill under slab with anti-termite soil poisoning	148	SY	
I	Keep all excavations free from ground and surface water		Item	
	<b>MW-1</b>	<b>To Collection</b>	<b>EC\$</b>	

<u>BILLS OF QUANTITIES FOR THE CONSTRUCTION OF THE INTERPRETATION CENTRE ST MARY'S PARISH, ANTIGUA AND BARBUDA</u>					
		<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Total</b>
<u>BILLS OF QUANTITIES</u>					
<u>SUBSTRUCTURE</u>					
<u>2500 psi blinding concrete as per specification</u>					
A	Below slab on grade; 2" thick	29	CY		
<u>Reinforced concrete; 3,500 psi @ 28 days:</u>					
B	In capping beams	77	CY		
C	In slabs on grade; 6" thick	86	CY		
<u>Formwork</u>					
D	To edges of floor slabs/beams; exceeding 1'0" thick	51	SY		
<u>High Yield Steel Bar Reinforcement</u>					
E	#3 Bars; in capping beams	3893	LB		
F	#4 Bars; in capping beams	3128	LB		
G	#5 Bars; in capping beams	1930	LB		
H	#6 Bars; in capping beams	9160	LB		
J	#4 Bars; in floor slab	33437	LB		
<u>SUNDRIES TO FLOOR SLAB</u>					
K	Steel trowelled smooth	670	SY		
L	3/16"x1 1/2" floor joints	380	LY		
<b>MW-2</b>				<b>To Collection</b>	<b>EC\$</b>



<u>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING</u>				Total
<u>ST. MARY'S PARISH, ANTIGUA</u>				
		Qty	Unit	Rate
<u>BILLS OF QUANTITIES - CISTERN</u>				
<u>Excavation and Earthworks (incl. working space)</u>				
A	Excavation to basements and the like commencing at reduced levels depth > 5'0" < 10'0"	378	CY	
B	Excavation to basements and the like commencing at reduced levels depth > 10'0" < 15'0"	132	CY	
C	Level, grade and compact the surfaces of excavations or fill to receive concrete	126	SY	
D	Backfill with selected excavated material to make up levels; leveled and compacted in accordance with the specification	125	CY	
E	Backfill around cistern walls and foundations; selected excavated material	249	CY	
F	Disposal of surplus excavated material off site	136	CY	
G	Earthwork support to faces of excavation		Item	
H	Keep all excavations free from standing and run-off water		Item	
<u>CONCRETE WORK</u>				
<u>Blinding concrete; 2500psi @ 28 days</u>				
J	Below slab on grade; 2" thick	13	CY	
<u>Reinforced concrete; 3500 psi @ 28 days</u>				
K	Grade beams	37	CY	
L	In slab on grade; 8"-10" thick	31	CY	
M	In suspended slabs; 6" thick	19	CY	
N	In block walls; 12" thick	114	CY	
<u>Manhole Access Cover</u>				
O	2'0" x 2'0" proprietary aluminum access cover;	2	No	
<b>MW-4</b>				<b>To Collection EC\$</b>

<b>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING ST. MARY'S PARISH, ANTIGUA</b>				
<b>BILLS OF QUANTITIES - CISTERN</b>				
		<b>Qty</b>	<b>Unit</b>	<b>Rate</b>
				<b>Total</b>
<u>Formwork</u>				
A	To edge of footings and floor slabs; 2'0" high	38	SY	
B	To beams	96	SY	
C	To edges of floor slabs; not exceeding 1'0" high	15	SY	
D	To soffit of suspended slab including strutting	125	SY	
E	To edge of suspended slab; narrow widths	15	SY	
<u>High yield reinforcement:</u>				
F	# 4 Bars in floor slab	6816	LB	
G	# 5 Bars in walls	12105	LB	
H	# 3 Bars in beams	2327	LB	
J	# 5 Bars in beams	2163	LB	
K	# 6 Bars in block walls	7786	LB	
<u>Sundries</u>				
L	Floor slab steel trowelled smooth	126	SY	
M	Thoroseal to internal walls and floor slab	472	SY	
N	Allow for all builder's work for this item		Item	
O	1" thick cement and sand plaster to walls; two coat work internally and externally	472	sy	
P	Waterproofing to exterior faces of walls; three coats cold applied asphalt tanking as specification	278	sy	
Q	12" hollow concrete blockwork; all cores willed with 3500psi concrete reinforced with #5 and #6 bars at 8" centers (ms); laid, bedded and jointed in 1:3 cement and sand mortar; stretcher bond	342	sy	
R	#5 bars in block walls	5425	LB	
S	12" Dur-O-Wall as horizontal reinforcement to blockwork; lapped 4"; 16" centers	783	LY	
	<b>MW-5</b>			
		<b>To Collection EC\$</b>		



<u>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING</u>					
<u>ST MARY'S PARISH, ANTIGUA</u>					
		Qty	Unit	Rate	Total
<u>BILLS OF QUANTITIES - WALLS</u>					
<u>CONCRETE WORK</u>					
<u>Reinforced concrete; 3500 psi @ 28 days</u>					
A	In beams	26	CY		
<u>Formwork; including striking:</u>					
B	To sides of beams	269	SY		
<u>Steel bar reinforcement</u>					
C	#3 Bars; in beams; links and hooks	1471	LB		
D	#4 Bars; in beams	276	LB		
E	#5 Bars; in beams	2390	LB		
F	#5 Bars; around windows	772	LB		
<b>MW-7</b>					
				<b>To Collection</b>	<b>EC\$</b>





<b>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING</b>				<b>Total</b>
<b>ST. MARY'S PARISH, ANTIGUA</b>				
	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	
<b>BILLS OF QUANTITIES - ROOF</b>				
<b>Reinforced concrete; 3500 psi @ 28 days in:</b>				
A	Suspended slabs; laid to falls and crossfalls to an average 6" thick; with entrained Xypex waterproofing mixed into concrete;	35	SY	
B	In 8"x8" reinforced concrete upstand	1	CY	
<u>Formwork including striking/removal</u>				
C	To upstands	3	SY	
D	To suspended slabs	35	SY	
<u>Steel bar reinforcement</u>				
E	# 3 Bars; in upstands and beams as links and hooks and horizontal ties between rafters	144	LB	
F	# 4 Bars; in upstands	193	LB	
G	# 4 Bars; in suspended slabs	1,304	LB	
H	# 4 Bars; in rafter ties	809	LB	
J	Velux Model VSS Solar Powered "Fresh Air" Skylight; white; r.o. 21"x 26 7/8"	2	EA	
<u>Dimensional timber as structural roof framing; w.p.p</u>				
K	3"x6" common rafters	241	LY	
L	3"x8" common rafters	424	LY	
M	3"x8" as hip rafters	65	LY	
N	3"x10" as hip rafters	66	LY	
O	3"x10" as ridge board	3	LY	
P	3"x12" as ridge board	3	LY	
Q	2"x10" as fascia; incl. e.o. for gingerbread	161	LY	
R	2"x4" as roofing battens	815	LY	
S	2"x8" as collar ties	43	LY	
T	3"x10" as collar ties	33	LY	
U	1"x6" w.p.p timber roof decking	673	SY	
V	Grace Ice and water shield HT	673	SY	
W	Torch on waterproofing to concrete roof	35	SY	
<b>MW-10</b>		<b>To Collection EC\$</b>		

<b>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING</b>				
<b>ST. MARY'S PARISH, ANTIGUA</b>				
	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Total</b>
<b>BILLS OF QUANTITIES - ROOF</b>				
<u>24 gauge galvanized metal profiled roof sheeting on 2"x4" treated roofing battens at 24" on center (measured separately), fixed to top of rafters (through roof boarding) all nailed and fixed in accordance with good building practice and the manufacturer's instructions to:</u>				
A	Hipped pitched main roofs	3,768	SF	
B	Roofs of lower pitch	2,282	SF	
<u>24 gauge galvanized metal flashings including all laps and folds ensure all accessories are watertight and fixed properly in their respective positions</u>				
C	Ridge capping 12" girth including cutting tiles both sides, laps and fixings.	13	LF	
D	Hip capping including raking cutting tiles both sides.	403	LF	
E	18" wide flashing at slope change;	332	LF	
<u>Prepare &amp; apply one coat Xypex Concentrate concrete waterproofing base coat applied strictly in accordance with manufacturers instructions and recommendations</u>				
F	To concrete roof slabs	35	SY	
G	Wooden architectural gusset; Detail R10 on Dwg No S-08	32	NO	
H	Stainless steel typical plate at joint between 4"x8" timber beam and concrete columns; 4"x16"x6"x4"; Dwg No S-09	4	NO	
J	Decorative capital at top of wooden 6"x6" pine columns; S-09;	16	NO	
K	4"x 8" treated timber beam	60	LY	
L	6"x 6" treated pine columns	16	NO	
M	Stainless steel bolts; 1/2"; Inc. nuts & washers; 6"long	322	NO	
N	Stainless steel bolts; 5/8"; Inc. nuts & washers; 6" long	32	NO	
O	H3 Simpson strong ties fastened to rafters	122	NO	
P	Seamless guttering fixed to 2"x10" fascia	161	LY	
<b>MW-11</b>		<b>To Collection EC\$</b>		





<b>BILLS OF QUANTITIES FOR THE CONSTRUCTION OF THE INTERPRETATION CENTRE ST. MARY'S PARISH, ANTIGUA AND BARBUDA</b>					
<b>BILLS OF QUANTITIES - WINDOWS</b>		<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Total</b>
<b>Generally</b>					
<u>Impact-Resistant windows; Windows as per specification PGT EnergyVue® Double Hung DH5460 (<a href="http://www.pgtindustries.com/product-overview/double-hung-dh5460-energyvuetm-double-hung-popular-glass-tints-windows">http://www.pgtindustries.com/product-overview/double-hung-dh5460-energyvuetm-double-hung-popular-glass-tints-windows</a>), White Finish with no grid pattern. EnergyShield Max: Hi-performance Low-E Glass w/ matching insect screens; fix into prepared openings including adjusting openings where necessary; including all necessary timber shims and bucks, forming drips, caulking all around with sealant; including all hardware installed strictly in accordance with manufacturers instructions; PGT Industries 1070 Technology Drive, Nokomis, FL 34275, P.O.Box 1529, Nokomis, FL 34274, Tel. No.: (941) 480-1600 Fax: (800) 477-3655</u>					
A	W1; 3'6"X 5'0"	12	EA		
B	W2; 3'0"X5'0"	10	EA		
C	W1; 3'6"X5'0"; obscure/opaque glass	2	EA		
D	W2; 3'0"X5'0"; ditto	2	EA		
E	AW740 projected 740; 35.875x17 window	8	EA		
F	16g mullion bars; 1"x2.75"	4	EA		
G	16g mullion bars; 1"x4"	4	EA		
<b>MW-14</b>		<b>To SUMMARY EC\$</b>			

<u>BILLS OF QUANTITIES FOR THE CONSTRUCTION OF THE INTERPRETATION CENTRE</u>				
<u>ST. MARY'S PARISH, ANTIGUA AND BARBUDA</u>				
<u>BILLS OF QUANTITIES - DOORS</u>				
		Qty	Unit	Rate
				Total
Doors as specified; WinGuard® Aluminum Essential French Door FD101H *with Custom side panels ( <a href="http://www.pgtindustries.com/product-overview/fd101h">http://www.pgtindustries.com/product-overview/fd101h</a> ); white finish with no grid pattern; impact resistant; including all necessary blocking pieces, frames, shims, anchorages, bolts, hinges, sleeves, locks, ironmongery, hardware, etc.; prepared to receive clear varnish finish (if wooden); PGT Industries 1070 Technology Drive, Nokomis, FL 34275, P.O.Box 1529, Nokomis, FL 34274, Tel. No.: (941) 480-1600 Fax: (800) 477-3655;				
DOORS				
A	D1;	2	EA	
B	D2;	2	EA	
C	D3;	4	EA	
D	D4;	1	EA	
E	D5;	1	EA	
F	D6;	1	EA	
G	D7;	2	EA	
H	D11;	1	EA	
MW-15				To SUMMARY EC\$

<b>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING</b>				
<b>ST. MARY'S PARISH, ANTIGUA</b>				
	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Total</b>
<b><u>BILLS OF QUANTITIES - FINISHES</u></b>				
<b><u>FLOOR AND WALL FINISHES</u></b>				
Note: All Tiles are available at Mi Casa				
<u>Supply and lay floor tiling; laid on thin set bedding compound; all joints grouted up; including cutting and fitting at boundaries</u>				
A	BIS Grafite Rectified; Exterior Porcelain; 24"x24"; T2	204	SF	
B	BIS Off White Exterior; Exterior Porcelain; 24"x24"; T3	2338	SF	
C	Bull Nosed Tile; 8" wide; T4	181	LF	
D	Rough Porcelain; 4"x4"; T10	54	SF	
E	Travertino Nauna Blanco; T7; 24"x24"	672	SF	
F	Loft SGR Bold; 24"x24"; T8	983	SF	
G	Mohawk Secoya Series LVT Flooring (Supplied by Mr. Eustace Roberts 268-720-5383)		ITEM	30,240.00
H	Brushed concrete; T1	786	SF	
<b><u>Wall Finishes</u></b>				
J	Wooden skirting- WF1; 4" high w.p.p	465	LF	
K	Backsplash; 4"x4"; WT3	6	SF	
L	Loft SGR Bold; WT1	483	SF	
M	BIS Off White Grafite Shower; 12"x24"; WT2	288	SF	
<b><u>Ceiling &amp; Ceiling Finishes</u></b>				
N	Prepare surfaces and apply one coat pickle to exposed ceiling areas including rafters and roof boarding	1222	SY	
O	1/2"thick cement board ceiling; screwed to 2"x4" w.p.p with 1/4"x1 1/2" screws including preparing surfaces and applying one primer and two finish coats of low VOC interior grade paint	64	SY	
<b>MW-16</b>		<b>To SUMMARY EC\$</b>		



<u>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING ST. MARY'S PARISH, ANTIGUA</u>				Qty	Unit	Rate	Total
<u>BILLS OF QUANTITIES - PLUMBING FIXTURES AND ACCESSORIES</u>							
<u>PLUMBING FIXTURES AND BATHROOM ACCESSORIES</u>							
<u>Install the following sanitary fixtures all in vitreous china and other fitments; including traps and water supplies; stop valves, flush valves, wastes, fixing brackets and fittings, grounds including connecting to water supply and waste; caulking around fixtures after installation; supplier: American Standard or similar approved</u>							
<u>All as per manufacturer's specifications:</u>							
A	<b>Water Cooler:</b> Primo Home Series Bottom Loading Hot and Cold Water Dispenser - Black ( <a href="https://www.walmart.com/ip/Primo-601088-Primo-Water-Dispenser-Bottom-Load-Black-Hot-Cold/25465007">https://www.walmart.com/ip/Primo-601088-Primo-Water-Dispenser-Bottom-Load-Black-Hot-Cold/25465007</a> )	1	NO				
B	<b>Urinal:</b> Washbrook 0.125 gpf Washout Top Spud Urinal with Manual Flush Valve System Model Number(s): 6590.503 ( <a href="https://www.americanstandard-us.com/bathroom/urinals/washbrook-0125-gpf-washout-top-spud-urinal-with-manual-flush-valve-system-21735">https://www.americanstandard-us.com/bathroom/urinals/washbrook-0125-gpf-washout-top-spud-urinal-with-manual-flush-valve-system-21735</a> )	1	NO				
C	<b>Water Closet:</b> American Standard Madera 1.1 GPF Elongated Toilet 2855111.020 ( <a href="http://www.bhg.com/shop/american-standard-american-standard-madera-1-1-gpf-elongated-toilet-2855111-020-p4f2f0db0e8e8fd88c166b0b34288f94e.html">http://www.bhg.com/shop/american-standard-american-standard-madera-1-1-gpf-elongated-toilet-2855111-020-p4f2f0db0e8e8fd88c166b0b34288f94e.html</a> )	3	NO				
D	<b>Water Closet:</b> American Standard 1.1 GPF Madera ADA System with EverClean & Manual Flush Valve Model Number(s): 2854.111 ( <a href="https://www.americanstandard-us.com/bathroom/commercial-toilets/11-gpf-madera-ada-system-with-everclean-manual-flush-valve-23073">https://www.americanstandard-us.com/bathroom/commercial-toilets/11-gpf-madera-ada-system-with-everclean-manual-flush-valve-23073</a> )	3	NO				
MW-17				To Collection EC\$			

<u>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING ST. MARY'S PARISH, ANTIGUA</u>		Qty	Unit	Rate	Total
<u>BILLS OF QUANTITIES - PLUMBING FIXTURES AND ACCESSORIES</u>					
A	<b>Shower Faucet:</b> Princeton Bath/Shower Trim Kits -- 1.5 gpm Model Number(s): T508.507 + pressure-balance-rough-valve-body-with-pex-inlets/universal-outlets-for-crimp-ring-system-(astm-f1807) Pressure Balance Rough Valve Body with PEX Inlets/Universal Outlets for Crimp Ring System (ASTM F1807) ( <a href="https://www.americanstandard-us.com/bathroom/shower-faucets/princeton-bathshower-trim-kits-15-gpm-22437">https://www.americanstandard-us.com/bathroom/shower-faucets/princeton-bathshower-trim-kits-15-gpm-22437</a> )	2	No		
B	<b>Shower Drain:</b> Proline SDCP-2PVC 2" PVC Chrome Plated ( <a href="https://media.wattswater.com/C-WD-ProLine.pdf">https://media.wattswater.com/C-WD-ProLine.pdf</a> )	4	NO		
C	<b>Floor Drain:</b> Proline FD20-6SQ-3PT 3" Push-On 6" Square NB ( <a href="https://media.wattswater.com/C-WD-ProLine.pdf">https://media.wattswater.com/C-WD-ProLine.pdf</a> )	11	NO		
D	<b>Lavatory Basin:</b> KOHLER Brookline Top-Mount Vitreous China Bathroom Sink in White with Overflow Drain ( <a href="http://www.homedepot.com/p/KOHLER-Brookline-Top-Mount-Vitreous-China-Bathroom-Sink-in-White-with-Overflow-Drain-K-R2202-4-0/204326077">http://www.homedepot.com/p/KOHLER-Brookline-Top-Mount-Vitreous-China-Bathroom-Sink-in-White-with-Overflow-Drain-K-R2202-4-0/204326077</a> )	7	NO		
E	<b>Lavatory Faucet:</b> Monterrey 8 Inch Widespread Faucet, 0.5 gpm ( <a href="https://www.americanstandard-us.com/bathroom/commercial-faucets/monterrey-8-inch-widespread-faucet-05-gpm-20419">https://www.americanstandard-us.com/bathroom/commercial-faucets/monterrey-8-inch-widespread-faucet-05-gpm-20419</a> ) Model Number(s): 6500.175	7	No		
F	<b>Kitchen Sink faucet:</b> Heritage Single Control Gooseneck Bar Sink Faucet Model Number(s): 7100.241H ( <a href="https://www.americanstandard-us.com/kitchens/commercial-kitchen-faucets/heritage-single-control-gooseneck-bar-sink-faucet-16609">https://www.americanstandard-us.com/kitchens/commercial-kitchen-faucets/heritage-single-control-gooseneck-bar-sink-faucet-16609</a> )	1	NO		
MW-18		To Collection EC\$			

<u>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING</u> <u>ST. MARY'S PARISH, ANTIGUA</u>				Qty	Unit	Rate	Total
<u>BILLS OF QUANTITIES - PLUMBING FIXTURES AND ACCESSORIES</u>							
A	<b>Kitchen Sink:</b> Kitchen Sinks - ADA Single Bowl 15 Inch 18 Gauge Kitchen Sink - Brushed Satin Model Number(s): 24SB.151511.290 ( <a href="https://www.americanstandard-us.com/kitchens/kitchen-sinks/ada-single-bowl-15-inch-18-gauge-kitchen-sink-23095">https://www.americanstandard-us.com/kitchens/kitchen-sinks/ada-single-bowl-15-inch-18-gauge-kitchen-sink-23095</a> )	1	NO				
B	<b>Utility Sink:</b> MUSTEE 18 in. x 24 in. Plastic Utilatub Single Laundry Tub in White ( <a href="http://www.homedepot.com/p/MUSTEE-18-in-x-24-in-Plastic-Utilatub-Single-Laundry-Tub-in-White-21F/204684528">http://www.homedepot.com/p/MUSTEE-18-in-x-24-in-Plastic-Utilatub-Single-Laundry-Tub-in-White-21F/204684528</a> ) + Westbrass 3-1/4 in. Push/Pull Basket Strainer in Black ( <a href="http://www.homedepot.com/p/Westbrass-3-1-4-in-Push-Pull-Basket-Strainer-in-Black-D2143P-54/202551173">http://www.homedepot.com/p/Westbrass-3-1-4-in-Push-Pull-Basket-Strainer-in-Black-D2143P-54/202551173</a> )	1	NO				
C	<b>Utility Faucet:</b> Design House Ashland 2-Handle Laundry Faucet in Satin Nickel ( <a href="http://www.homedepot.com/p/Design-House-Ashland-2-Handle-Laundry-Faucet-in-Satin-Nickel-525147/204084589">http://www.homedepot.com/p/Design-House-Ashland-2-Handle-Laundry-Faucet-in-Satin-Nickel-525147/204084589</a> )	2	NO				
D	<b>Pressure Tank:</b> Water Worker 62 Gal. Pressurized Well Tank ( <a href="http://www.homedepot.com/p/Water-Worker-62-Gal-Pressurized-Well-Tank-HT62B/202846486">http://www.homedepot.com/p/Water-Worker-62-Gal-Pressurized-Well-Tank-HT62B/202846486</a> )	1	NO				
E	<b>Water Pump:</b> Sta-Rite Industries SNE-L 1HP Shallow Well Jet Jump ( <a href="https://www.amazon.com/Sta-Rite-Industries-SNE-L-Shallow-Well/dp/B00CLBFNSK">https://www.amazon.com/Sta-Rite-Industries-SNE-L-Shallow-Well/dp/B00CLBFNSK</a> )	1	NO				
F	UV Filter	1	NO				
MW-19				To Collection EC\$			

<u>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING ST. MARY'S PARISH, ANTIGUA</u>					
<u>BILLS OF QUANTITIES - PLUMBING FIXTURES AND ACCESSORIES</u>		Qty	Unit	Rate	Total
A	<b>Filters:</b> Pentek @ 150233 Big Blue 20 Inch Water Filter Housing ( <a href="http://www.waterfiltersonline.com/detail.asp?product_id=pentek-150233">http://www.waterfiltersonline.com/detail.asp?product_id=pentek-150233</a> )	2	NO		
B	<b>Roof Drain:</b> Proline RD1-3ABS 3" ABS Poly ( <a href="https://media.wattswater.com/C-WD-ProLine.pdf">https://media.wattswater.com/C-WD-ProLine.pdf</a> )	2	NO		
C	18" Towel Bar: BOBRICK B-530 Series Extra-Heavy-Duty Surface-Mounted Towel Bar	2	NO		
D	Robe Hook: B-671 Single Robe Hook	6	NO		
E	Bobrick Surface Mounted Double-Roll Toilet Tissue Dispenser w/ Hoods Model # B-6999:	6	NO		
F	Bobrick TrimLineSeries™ Surface-Mounted Paper Towel Dispenser/Waste Receptacle	3	NO		
G	Counter Mounted Soap Dispenser Bobrick Model # B-822	6	NO		
H	Surface Mounted Sanitary Napkin Disposal Bobrick Model # B-270	3	NO		
J	B-686161-1/2" Diameter Two-Wall Shower/Tub Compartment Grab Bar	2	NO		
K	Bobrick 1-1/4" Diameter Two-Wall Toilet Grab Bar, Peened	3	NO		
L	Surface Mounted Utility Hook by Bobrick Model # B-670	6	NO		
M	Mirror 1	1	NO		
N	Mirror 2	1	NO		
O	Mirror 3	1	NO		
<b>MW-20</b>		<b>To Collection EC\$</b>			

<u>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING ST. MARY'S PARISH, ANTIGUA</u>	Qty	Unit	Rate	Total
<u>BILLS OF QUANTITIES - PLUMBING FIXTURES AND ACCESSORIES</u>				
<u>COLLECTION</u>				
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Page MW-18				
Page MW-19				
Page MW-20				
MW-21			To SUMMARY EC\$	

<u>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING ST. MARY'S PARISH, ANTIGUA</u>		Qty	Unit	Rate	Total
<u>BILLS OF QUANTITIES - PLUMBING INSTALLATIONS</u>					
<u>Allow for executing complete the whole of the Plumbing Installation as detailed on all relevant Architectural drawings and as described in the specification; including all necessary attendance done upon tradesmen carrying out the works.</u>					
A	Cold water service installation including meters, sub-meters and connections to water main complete; Provision of connections and installation of drinking fountains, urinals, toilets, basins, showers, kitchen sinks, floor drains, roof drains, hose bibs, water pumps, pressure tanks, UV sanitizer, potable water filter system,		Item		
B	Allow for supply and installation of sanitary pipework, wastes, overflows and floor drains. Also allow for sanitary drainage installation and ventilation system, including connections outside building to external underground drainage system. Also allow for surface water disposal installation including all floor & roof drains and rain water downpipes connecting to below ground drainage system		Item		
C	Supply and installation of Solar Water Heater System with circulating loop		Item		
MW-22					
				To Collection EC\$	

<u>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING</u>				
<u>ST. MARY'S PARISH, ANTIGUA</u>				
<u>BILLS OF QUANTITIES - PLUMBING INSTALLATIONS</u>				
<u>SEWAGE TREATMENT PLANT</u>				
	Qty	Unit	Rate	Total
A	95	CY		
Excavate pits and the like to a depth n.e. 5'0"				
B	95	CY		
Excavate pits and the like to a depth exceeding 5'0" but n.e. 10'0"				
C	23	CY		
Excavate pits and the like to a depth > 10'0"< 15'0"				
D	66	CY		
Imported fill below slab to make up levels; scalping; 3'0" compacted to 95 Proctor density				
E	66	SY		
Level and trim top of compacted fill to receive concrete				
F	4	CY		
2" blinding concrete; 2500 psi;				
G	1616	LB		
5/8" high yield bars; both ways at 16" cc; top of slab and beneath walls				
H	34	LY		
Formwork to edges of reinforced concrete floor slab; 8" high				
J	12	CY		
3500psi concrete; 8" thick reinforced concrete base slab				
K	47	SY		
8" hollow core blockwork laid in stretcher bond; 5/8" reinforcement (M.S) at 8" cc; all cores filled; laid, bedded and jointed in 1:3 cement and sand mortar mix				
L	801	LB		
5/8" high yield bars in blockwork; vertically				
M	94	SQ		
1/2" cement and sand render to both sides of blockwork				
N	50	SQ		
Bituminous asphalt tanking to exterior faces of 8" blockwalls; two coat work				
O	3	CY		
3500 psi concrete to 8"x1'3" concrete beam and upstands around manhole openings				
P	31	SY		
Formwork to beams and upstands				
Q	479	LB		
5/8" high yield bars in beams as reinforcement; horizontally				
R	134	LB		
3/8" bars to beams				
S	3	NO		
Manhole covers; 2'0"x2'0"; aluminium				
T	39	SY		
Formwork to soffit of slab				

<u>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING</u>					
<u>ST. MARY'S PARISH, ANTIGUA</u>					
<u>BILLS OF QUANTITIES - PLUMBING INSTALLATIONS</u>					
		Qty	Unit	Rate	Total
A	3500 psi concrete; suspended slabs; 6" thick	27	CY		
B	5/8" high yield reinforcement to suspended slab	665	LB		
<u>SEWAGE SYSTEM EQUIPMENT</u>					
C	60 mil EPDM Liner and accessories	1	ITEM		
D	Liner Installation	1	ITEM		
E	Landscaping (Provisional)	1	ITEM		
F	Pump	1	ITEM		
G	Filter	1	ITEM		
H	UV system	1	ITEM		
J	Online Chlorinator	1	ITEM		
K	Supply and install 2" pvc pipe	300	LF		
L	Miscellaneous	1	ITEM		
M	Engineering Services and Installation of Equipment	1	ITEM		
MN-24					To Collection EC\$



BILLS QUANTITIES - PROPOSBD INTBRPRBTATION CBNTRB BUILDING  
ST. MARY'S PARISH. ANTIGUA

BILLS OF QUANTITIES - PLUMBING INSTALLATIONS

COLLECTION

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Qty

Unit

Rate

Total

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To SUMMARY EC\$



## **3.10 Provisional Sums**

<b>BILLS OF QUANTITIES - PROPOSED INTERPRETATION CENTRE BUILDING</b>				
<b>ST. MARY'S PARISH, ANTIGUA</b>				
	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Total</b>
<b>PROVISIONAL SUMS</b>				
<b>Include the following Provisional Sums for work which cannot be defined or detailed at this time. These sums may be deducted in whole or part without claim of loss of profit</b>				
A				
		Sum		2,273.00
C				
		Sum		4,300.00
D				
		Sum		29,954.00
E				
		Sum		38,000.00
F				
		Sum		7,500.00
G				
		Sum		12,500.00
H				
		Sum		12,000.00
J				
		Sum		35,000.00
K				
		Sum		8,000.00
L				
		Sum		6,000.00
M				
		Sum		9,000.00
N				
		Sum		10,000.00
O				
		Sum		9,000.00
P				
		Sum		21,000.00
<b>Summary EC\$</b>				
				<b>204,527.00</b>

