
Bidding Document

for

Procurement of

**Reinforced Concrete Road and Drain
Construction Services in Cavalla Hill**

Project: Rehabilitation of a section of the Cavalla Hill
Road to Barzey's By-pass Road

Employer: The Government of Montserrat

Issued on: 23rd August 2019

Preface

This Bidding Document for Procurement of Small Works has been prepared by Engineering Solutions Inc. on behalf of Basic Needs Trust Fund and is based on the Standard Bidding Document for Procurement of Small Works issued by the Caribbean Development Bank, dated April 2008.

This document reflects the structure and the provisions of the Master Document for the Procurement of Small Works, prepared by Multilateral Development Banks and International Financing Institutions, except where specific considerations within the respective institutions have required a change.

Summary Description

PART 1 – BIDDING PROCEDURES

Section I. Instructions to Bidders (ITB)

This Section provides relevant information to help Bidders prepare their bids. Information is also provided on the submission, opening, and evaluation of bids and on the award of Contracts.

Section II. Bid Data Sheet (BDS)

This Section consists of provisions that are specific to each procurement and that supplement the information or requirements included in Section I, Instructions to Bidders.

Section III. Evaluation and Qualification Criteria

This Section contains the criteria to determine the lowest evaluated bid and the qualifications of the Bidder to perform the contract.

Section IV. Bidding Forms

This Section contains the forms which are to be completed by the Bidder and submitted as part of his Bid

Section V. Eligible Countries

This Section contains information regarding eligible countries.

PART 2 – EMPLOYER'S REQUIREMENTS

Section VI. *Employer's Requirements*

This Section contains the Specification, the Drawings, and supplementary information that describe Works to be procured.

PART 3 – CONDITIONS OF CONTRACT AND CONTRACT FORMS

Section VII. General Conditions of Contract (GCC)

This Section contains the general clauses to be applied in all contracts. **The text of the clauses in this Section shall not be modified.**

Section VIII. Particular Conditions of Contract (PCC)

This Section consists of Contract Data and Specific Provisions which contains clauses specific to each contract. The contents of this Section modify or supplement the General Conditions and shall be prepared by the *Employer*.

Section IX. Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for **Performance Security** and **Advance Payment Security**, when required, shall only be completed by the successful Bidder after contract award.

Standard Bidding Document

Table of Contents

PART 1 – Bidding Procedures.....	1
Section I – Instructions to Bidders.....	3
Section II – Bid Data Sheet (BDS).....	27
Section III – Evaluation and Qualification Criteria.....	33
Section IV – Bidding Forms.....	43
Section V – Eligible Countries.....	69
PART 2 – Employer’s Requirements.....	1
Section VI – Employer’s Requirements.....	3
PART 3 – Conditions of Contract and Contract Forms.....	1
Section VII – General Conditions of Contract.....	3
Section VIII – Particular Conditions of Contract.....	29
Section IX – Contract Forms.....	35

PART 1 – Bidding Procedures

Section 1 - Instructions to Bidders

Table of Clauses

A.	General.....	5
	1. Scope of Bid.....	5
	2. Source of Funds.....	5
	3. Fraud and Corruption.....	5
	4. Eligible Bidders.....	7
	5. Eligible Goods and Services.....	8
B.	Contents of Bidding Document.....	9
	6. Sections of Bidding Document.....	9
	7. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting.....	10
	8. Amendment of Bidding Document.....	11
C.	Preparation of Bids.....	11
	9. Cost of Bidding.....	11
	10. Language of Bid.....	11
	11. Documents Comprising the Bid.....	12
	12. Letter of Bid and Schedules.....	12
	13. Alternative Proposals.....	12
	14. Bid Prices and Discounts.....	13
	15. Currencies of Bid and Payment.....	14
	16. Documents Establishing the Qualifications of the Bidder.....	14
	17. Documents Establishing the Eligibility of the Goods and Services.....	15
	18. Period of Validity of Bids.....	15
	19. Bid Security.....	15
	20. Format and Signing of Bid.....	17
D.	Submission and Opening of Bids.....	18
	21. Sealing and Marking of Bids.....	18
	22. Deadline for Submission of Bids.....	18
	23. Late Bids.....	19
	24. Withdrawal, Substitution, and Modification of Bids.....	19
	25. Bid Opening.....	19

- E. Examination of Bids.....20**
 - 26. Confidentiality.....20
 - 27. Clarification of Bids.....21
 - 28. Determination of Responsiveness.....21

- F. Bid Evaluation and Comparison.....23**
 - 29. Correction of Arithmetical Errors.....23
 - 30. Conversion of Single Currency.....23
 - 31. Bid Adjustment.....23
 - 32. Qualification of Bidder.....24
 - 33. Employer’s Right to Accept Any Bid, and to Reject Any or All Bids.....24

- G. Award of Contract.....24**
 - 34. Award Criteria.....24
 - 35. Notification of Award.....25
 - 36. Signing of Contract.....25
 - 37. Performance Security.....26
 - 38.

Section I - Instructions to Bidders

A. General

1. **Scope of Bid**
 - 1.1 The Employer, as **indicated in Section II, Bid Data Sheet (BDS)**, issues this Bidding Document for the procurement of the Works as specified in Section VI Requirements. The name, identification, and number of lots **provided in the BDS**.
 - 1.2 Unless otherwise stated, throughout this Bidding Document, definitions and interpretations shall be as prescribed in Section VII, General Conditions.
2. **Source of Funds**
 - 2.1 The Recipient of CDB Financing (hereinafter called “Recipient”) **indicated in the BDS** has applied for or received financing (hereinafter called “funds”) from the Caribbean Development Bank (hereinafter called “the Bank”) toward the cost of the project **named in the BDS**. The Recipient intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.
 - 2.2 Payments by the Bank will be made only at the request of the Recipient and upon approval by the Bank in accordance with the terms and conditions of the financing agreement between the Recipient and the Bank (hereinafter called the Loan Agreement), and will be subject in all respects to the terms and conditions of that Loan Agreement. No party other than the Recipient shall derive any rights from the Loan Agreement or have any claim to the funds.
3. **Fraud and Corruption**
 - 3.1 The Bank requires that Recipients (including beneficiaries of Bank loans), as well as Bidders, Suppliers, Contractors, and Consultants under Bank-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Bank:
 - (a) defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) “corrupt practice” means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution;

- (ii) “fraudulent practice” means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;
 - (iii) “collusive practice” means a scheme or arrangement between two or more bidders, with or without the knowledge of the Recipient, designed to establish bid prices at artificial, non-competitive levels; and
 - (iv) “coercive practices” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a procurement process or affect the execution of a contract;
- (b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question;
 - (c) will cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Recipient or of a beneficiary of the loan engaged in corrupt, fraudulent, collusive or coercive practices during the procurement or the execution of that contract, without the Recipient having taken timely and appropriate action satisfactory to the Bank to remedy the situation;
 - (d) will sanction a firm or individual, including declaring them ineligible, either indefinitely or for a stated period of time, to be awarded a Bank-financed contract if it at any time determines that they have, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, a Bank-financed contract; and
 - (e) will have the right to require that a provision be included in Bidding Documents and in contracts financed by CDB, requiring bidders, suppliers, contractors and consultants to permit the Bank to inspect their accounts and records and other documents relating to the Bid submission and contract performance and to have them audited by auditors appointed by the Bank.

- 3.2 Furthermore, Bidders shall be aware of the provisions of GCC Sub-Clauses 22.2 and 56.2(h).
- 4. Eligible Bidders**
- 4.1 A Bidder may be a natural person, private entity, or government-owned entity—subject to ITB 4.5—or any combination of such entities supported by a letter of intent to enter into an agreement or under an existing agreement in the form of a joint venture, consortium, or association (JVCA). In the case of a JVCA:
- (a) unless otherwise specified in the BDS, all partners shall be jointly and severally liable, and
 - (b) the JVCA shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the partners of the JVCA during the bidding process and, in the event the JVCA is awarded the Contract, during contract execution.
- 4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of an eligible country, in accordance with Section 5 (Eligible Countries). A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, incorporated, or registered and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including Related Services.
- 4.3 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:
- (a) they have a controlling partner in common; or
 - (b) they receive or have received any direct or indirect subsidy from any of them; or
 - (c) they have the same legal representative for purposes of this bid; or
 - (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or

- (e) a Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which it is involved. However, this does not limit the inclusion of the same subcontractor not otherwise participating as a Bidder, in more than one bid; or
- (f) a Bidder participated as a consultant in the preparation of the Section VI, Requirements that are the subject of the Bid; or
- (g) a Bidder, or any of its affiliates has been hired or is proposed to be hired by the Employer or Recipient for the supervision of the contract.

4.4 A firm that is under a declaration of ineligibility by the Bank at the date of the deadline for bid submission or thereafter, shall be disqualified.

4.5 Government-owned entities in the Recipient's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under the principles of commercial law, and (iii) are not dependent agencies of the Employer.

4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.

4.7 Firms shall be excluded if:

- (a) as a matter of law or official regulation, the Recipient's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or related services required; or
- (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Recipient's country prohibits any import of goods or contracting of works or services from that country or any payments to persons or entities in that country.

5. Eligible Goods and Services

5.1 All goods and services to be supplied under the Contract and financed by the Bank, shall have as their country of origin an eligible country of the Bank as listed in Section V, Eligible Countries.

- 5.2 For purposes of this Clause, the term goods includes commodities, raw material, machinery, equipment, and industrial plants; and services includes services such as insurance, transportation, installation, commissioning, training, and initial maintenance.
- 5.3 The term “country of origin” means the country where the goods have been mined, grown or produced when through manufacturing, processing or substantial and major assembling of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 5.4 The nationality of the firm that produces, assembles, distributes or sells the goods shall not determine the origin of the goods. Goods shall be considered to originate in a country if they meet the criterion of at least 50% by value derived from within that country.

B. Contents of Bidding Document

6. Sections of Bidding Document

- 6.1 The Bidding Document consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8.

PART 1 Bidding Procedures

Section I - Instructions to Bidders (ITB)

Section II - Bid Data Sheet (BDS)

Section III - Evaluation and Qualification Criteria

Section IV - Bidding Forms

Section V - Eligible Countries

PART 2 Requirements

Section VI - Requirements

PART 3 Conditions of Contract and Contract Forms

Section VII - General Conditions (GCC)

Section VIII - Particular Conditions (PCC)

Section IX - Contract Forms

- 6.2 The Invitation for Bids issued by the *Employer* is not part of the Bidding Document.
- 6.3 The *Bidder* shall obtain the Bidding Document from the source stated by the *Employer* in the Invitation for Bids; otherwise the Employer is not responsible for the completeness of the Bidding Document.

- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid
7. **Clarification of Bidding Document, Site Visit, Pre-Bid Meeting**
- 7.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Employer in writing at the Employer's address **indicated in the BDS** or raise his inquiries during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received prior to the deadline for submission of bids, within number of days specified **in the BDS**. The Employer's response shall be in writing with copies to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 and ITB 22.2.
- 7.2 Where applicable, the Bidder is advised to visit and examine the project site and obtain for itself, on its own responsibility, all information that may be necessary for preparing the bid and entering into a contract for provision of the Requirements. The costs of visiting the Site shall be at the Bidder's own expense.
- 7.3 Pursuant to ITB 7.2, where the Bidder and any of its personnel or agents have been granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the visit
- 7.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if **provided for in the BDS**. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage. If so provided in the BDS, the Employer will organize a site visit.

- 7.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the *Employer* not later than one week before the meeting.
- 7.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by the *Employer* exclusively through the issue of an Addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting.
- 7.7 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.
8. **Amendment of Bidding Document**
- 8.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing addenda.
- 8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from the Employer in accordance with ITB 6.3.
- 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 22.2

C. Preparation of Bids

9. **Cost of Bidding**
- 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
10. **Language of Bid**
- 10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language **specified in the BDS**. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language **specified in the BDS**, in which case, for purposes of interpretation of the Bid, such translation shall govern.

11. **Documents
Comprising the Bid**

11.1 The Bid shall comprise the following:

- (a) Letter of Bid;
- (b) Completed Schedules, as provided in Section IV, Bidding Forms;
- (c) Bid Security or Bid Securing Declaration, in accordance with ITB 19;
- (d) at the Bidder's option, alternative proposals if permissible, in accordance with ITB 13;
- (e) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
- (f) documentary evidence establishing the Bidder's qualifications in accordance with the requirements of Section III, Evaluation and Qualification Criteria, using the relevant forms furnished in Section IV, Bidding Forms;
- (g) documentary evidence as specified in the BDS, establishing the conformity of the Technical Proposal offered by the Bidder with the Bidding Document, using the relevant forms furnished in Section IV, Bidding Forms;
- (h) In the case of a bid submitted by a JVCA, JVCA agreement, or letter of intent to enter into a JVCA including a draft agreement, indicating at least the parts of the Requirements to be executed by the respective partners; and
- (i) Any other document **required in the BDS**.

12. **Letter of Bid and
Schedules**

12.1 The Letter of Bid and Schedules shall be prepared using the relevant forms in Section *IV*, Bidding Forms. The forms must be completed as indicated in each form

13. **Alternative Proposals**

13.1 Unless otherwise **indicated in the BDS**, alternative proposals shall not be considered. If alternative proposals are permitted, their method of evaluation shall be as stipulated in Section III, Evaluation and Qualification Criteria.

- 13.2 When alternative times for completion are explicitly invited, a statement to that effect will be **included in the BDS**, as will the method of evaluating different times for completion.
- 13.3 Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Document must first price the *Employer's* requirements as described in the Bidding Document and shall further provide all information necessary for a complete evaluation of the alternative by the *Employer*, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements shall be considered by the *Employer*.
- 13.4 When **specified in the BDS**, Bidders are permitted to submit alternative technical solutions for specified parts of the Requirements and such parts will be **identified in the BDS** as will the method for their evaluation and described in Section VI, Requirements.
14. **Bid Prices and Discounts**
- 14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Schedules shall conform to the requirements specified in ITB 14.2.
- 14.2 Unless otherwise provided in the BDS and the GCC, the prices quoted by the Bidder shall be fixed.
- 14.3 The Bidder shall submit a bid for the whole of the works described in ITB 1.1 by filling in prices for all items of the Works, as identified in Section IV, Bidding Forms. In case of admeasurement contracts, the Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder will not be paid for by the *Employer* when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities.
- 14.4 The price to be quoted in the Letter of Bid shall be the total price of the Bid, excluding any discounts offered.
- 14.5 Unconditional discounts, if any, and the methodology for their application shall be quoted in the Letter of Bid, in accordance with ITB 12.1

- 14.6 If so indicated in ITB 1.1, bids are invited for individual contracts or for any combination of contracts (packages). Bidders wishing to offer any price reduction for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Price reductions or discounts shall be submitted in accordance with ITB 14.4, provided the bids for all contracts are submitted and opened at the same time.
- 14.7 Unless otherwise **provided in the BDS** and the Conditions of Contract, the prices quoted by the Bidder shall be fixed. If the prices quoted by the Bidder are not fixed in accordance with ITB 14.2 but are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data in Section IV (Bidding Forms) and the *Employer* may require the Bidder to justify its proposed indices and weightings.
- 14.8 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total bid price submitted by the Bidder.
15. **Currencies of Bid and Payment** 15.1 The currency(ies) of the bid and the currency(ies) of payment shall be as **specified in the BDS**.
16. **Documents Establishing the Qualifications of the Bidder** 16.1 To establish its qualifications to perform the Contract, the Bidder shall provide the information requested in Section III (Evaluation and Qualification Criteria).
- 16.2 If so required in the BDS, a Bidder shall submit the Manufacturers Authorization using the form included in Section IV, Bidding Forms, where the Bidder does not manufacture or produce the goods it offers to supply.
- 16.3 If so required in the BDS, a Bidder shall submit evidence that it will be represented by an agent in the country, equipped and able to carry out the supplier's maintenance, repair and spare parts stocking obligations prescribed in the Conditions of Contract and requirements where a Bidder does not conduct business within the Employer's country.

- 16.4 Regional Bidders, individually or in joint ventures, applying for eligibility for regional margin of preference shall supply all information required to satisfy the criteria for eligibility as described in ITB 33.
17. **Documents**
Establishing the Eligibility of the Goods and Services
- 17.1 To establish the eligibility of the Good and Services in accordance with ITB 5, Bidders shall complete the forms included in Section IV, Bidding Forms.
18. **Period of Validity of Bids**
- 18.1 Bids shall remain valid for the period **specified in the BDS** after the bid submission deadline date prescribed by the Employer. A bid which is valid for a shorter period shall be rejected by the Employer as non-responsive.
- 18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the *Employer* may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 19, the bidder granting the request shall also extend the bid security for 28 days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its bid except as provided in ITB 19.3.
- 18.3 In the case of fixed price contracts, if the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial bid validity, the Contract price shall be adjusted by a factor specified in the request for extension. Bid evaluation shall be based on the Bid Price without taking into consideration the above correction.
19. **Bid Security**
- 19.1 The Bidder shall furnish as part of its bid, the original of either a Bid-Securing Declaration or a bid security using the relevant form included in Section IV, Bidding Forms. In the case of a bid security, the amount shall be **as specified in the BDS**.
- 19.2 A Bid Securing Declaration shall use the form included in Section IV Bidding Forms.
- 19.3 If a bid security is specified pursuant to ITB 19.1, the bid security shall be a demand guarantee, in any of the following forms at the Bidder's option:
- (a) an unconditional guarantee, issued by a bank *or surety*;

- (b) an irrevocable letter of credit; or
- (c) a cashier's or certified check.

from a reputable source from an eligible country. If the unconditional guarantee is issued by an insurance company or bonding company located outside the Employer's Country, the issuer shall have a correspondent financial institution located in the Employer's Country to make it enforceable. In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section *IV*, Bidding Forms or in another substantially similar format approved by the *Employer* prior to bid submission. In either case, the form must include the complete name of the Bidder. The bid security shall be valid for twenty-eight days (28) beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.

- 19.4 Any bid not accompanied by a *substantially* responsive bid security or *Bid Securing Declaration*, if required in accordance with ITB 19.1, shall be rejected by the *Employer* as non-responsive.
- 19.5 If a bid security is specified pursuant to ITB 19.1, the bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's furnishing of the performance security pursuant to ITB 37.
- 19.6 If a bid security is specified pursuant to ITB 19.1, the bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.
- 19.7 The bid security may be forfeited or the Bid Securing Declaration executed:
 - (a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid or
 - (b) if the successful Bidder fails to:
 - (i) sign the Contract in accordance with ITB 40; or
 - (ii) furnish a performance security in accordance with ITB 37.

19.8 The Bid Security or the Bid Securing Declaration of a *JVCA* shall be in the name of the *JVCA* that submits the bid. If the *JVCA* has not been constituted into a legally-enforceable *JVCA*, at the time of bidding, the Bid Security or the Bid Securing Declaration shall be in the names of all future partners as named in the letter of intent mentioned in ITB 4.1.

20. Format and Signing of Bid

20.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB 11 and clearly mark it "ORIGINAL". Alternative proposals, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE". In addition, the Bidder shall submit copies of the bid in the number **specified in the BDS**, and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

20.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as **specified in the BDS** and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid where entries have been made shall be signed or initialed by the person signing the bid.

20.3 A bid submitted by a *JVCA* shall comply with the following requirements:

(a) unless not required in accordance with ITB 4.1 (a), be signed so as to be legally binding on all partners; and

(b) include the representatives authorization referred to in ITB 4.1 (b) consisting of a Power of Attorney signed by those legally authorized to sign on behalf of the *JVCA*.

20.4 Any amendments, interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

D. Submission and Opening of Bids

21. **Sealing and Marking of Bids**
- 21.1 Bidders may always submit their bids by mail or by hand. If so **specified in the BDS**, bidders shall have the option of submitting their bids electronically. Procedures for submission, sealing and marking are as follows:
- (a) Bidders submitting bids by mail or by hand shall enclose the original and each copy of the Bid, including alternative bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as “ORIGINAL”, “ALTERNATIVE” and “COPY.” These envelopes containing the original and the copies shall then be enclosed in one single envelope. The rest of the procedure shall be in accordance with ITB sub-Clauses 21.2 and 21.3.
 - (b) Bidders submitting bids electronically shall follow the electronic bid submission procedures **specified in the BDS**.
- 21.2 The inner and outer envelopes shall:
- (a) bear the name and address of the Bidder;
 - (b) be addressed to the *Employer* in accordance with ITB 22.1;
 - (c) bear the specific identification of this bidding process indicated in accordance with ITB 1.1; and
 - (d) bear a warning not to open before the time and date for bid opening.
- 21.3 If envelopes and packages are not sealed and marked as required, the *Employer* will assume no responsibility for the misplacement or premature opening of the bid.
22. **Deadline for Submission of Bids**
- 22.1 Bids must be received by the *Employer* at the address and no later than the date and time **indicated in the BDS**.
- 22.2 The *Employer* may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document in accordance with ITB 8, in which case all rights and obligations of the *Employer* and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. **Late Bids**
- 23.1 The *Employer* shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the *Employer* after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.
24. **Withdrawal, Substitution, and Modification of Bids**
- 24.1 A Bidder may withdraw, substitute, or modify its bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be:
- (a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” “MODIFICATION;” and
 - (b) received by the *Employer* prior to the deadline prescribed for submission of bids, in accordance with ITB 22.
- 24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.
- 24.3 No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.
25. **Bid Opening**
- 25.1 The *Employer* shall conduct the bid opening in public in the presence of Bidders` designated representatives and anyone who choose to attend at the address, date and time **specified in the BDS**. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 21.1, shall be as **specified in the BDS**.
- 25.2 First, envelopes marked “WITHDRAWAL” shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at

bid opening. Next, envelopes marked “SUBSTITUTION” shall be opened and read out and exchanged with the corresponding bid being substituted, and the substituted bid shall not be opened, but returned to the Bidder. No bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked “MODIFICATION” shall be opened and read out with the corresponding bid. No bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at bid opening. Only envelopes that are opened and read out at bid opening shall be considered further.

25.3 The Employer shall open all other envelopes one at a time and read out: the name of the Bidder and the Bid Price(s), any discounts and their application methodology, alternative bids; the presence of a bid security or Bid-Securing Declaration; and any other details as the *Employer* may consider appropriate. Only discounts and alternative offers read out at bid opening shall be considered for evaluation. No bid shall be rejected at bid opening except for late bids, in accordance with ITB 23.1.

25.4 The *Employer* shall prepare a record of the bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per lot if applicable, including any discounts and alternative proposals; and the presence or absence of a bid security or a Bid-Securing Declaration. The Bidders’ representatives who are present shall be requested to sign the record. The omission of a Bidder’s signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted bids in time, and posted online when electronic bidding is permitted.

E. Examination of Bids

26. Confidentiality

26.1 Information relating to the evaluation of bids shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders

- 26.2 Any attempt by a Bidder to influence improperly the Employer in the evaluation of the bids or Contract award decisions may result in the rejection of its bid.
- 26.3 Notwithstanding ITB 26.1, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the *Employer* on any matter related to the bidding process, it may do so in writing.
- 27. Clarification of Bids**
- 27.1 To assist in the examination, evaluation, and comparison of the bids, and qualification of the Bidders, the *Employer* may, at its discretion, ask any Bidder for a clarification of its bid allowing a reasonable time for response. Any clarification submitted by a Bidder that is not in response to a request by the *Employer* shall not be considered. The *Employer's* request for clarification and the response shall be in writing. No change in the prices or substance of the bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the *Employer* in the evaluation of the bids, in accordance with ITB 29.
- 27.2 If a Bidder does not provide clarifications of its bid by the date and time set in the *Employer's* request for clarification, its bid may be rejected.
- 28. Determination of Responsiveness**
- 28.1 The *Employer's* determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in ITB 11.
- 28.2 A substantially responsive bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission.
- (a) "Deviation" is a departure from the requirements specified in the Bidding Document;
- (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and
- (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.

28.3 A material deviation, reservation, or omission is one that,

(a) if accepted, would:

(i) affect in any substantial way the scope, quality, or performance of the Requirements as specified in Section VI; or

(ii) limit in any substantial way, inconsistent with the Bidding Document, the *Employer's* rights or the Bidder's obligations under the proposed Contract; or

(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.

28.4 The *Employer* shall examine the technical aspects of the bid in particular, to confirm that all requirements of Section VI have been met without any material deviation, reservation or omission.

28.5 If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the *Employer* and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

28.6 Provided that a bid is substantially responsive, the *Employer* may waive any quantifiable non-conformity in the bid that do not constitute a material deviation, reservation or omission.

28.7 Provided that a bid is substantially responsive, the *Employer* may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify non-material non-conformities in the bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the bid. Failure of the Bidder to comply with the request may result in the rejection of its bid.

28.8 Provided that a bid is substantially responsive, the *Employer* shall rectify quantifiable non-material non-

conformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of the non-conforming item or component. The adjustment shall be made using the methodology indicated in Section III, Evaluation and Qualification Criteria.

F. Bid Evaluation and Comparison

29. **Correction of Arithmetical Errors**
- 29.1 Provided that the bid is substantially responsive, the *Employer* shall correct arithmetical errors as indicated in Section III, Evaluation and Qualification Criteria.
- 29.2 If the Bidder does not accept the correction of errors, its bid shall be declared non-responsive and its Bid Security shall be forfeited or the Bid Securing Declaration executed.
30. **Conversion to Single Currency**
- 30.1 For evaluation and comparison purposes, the currency(ies) of the bid shall be converted into a single currency as specified in Section III, Evaluation and Qualification Criteria.
31. **Bid Adjustments**
- 31.1 For the evaluation and comparison purposes the *Employer* shall adjust the bid prices using the criteria and methodology specified in Section III, Evaluation and Qualification Criteria.
- 31.2 Unless otherwise specified in the BDS, no regional margin of preference shall apply. If a margin of preference applies, the application methodology shall be as specified in Section III, Evaluation and Qualification Criteria.
- 31.3 If in the opinion of the *Employer* the bid which results in the lowest Evaluated Bid Price, is seriously unbalanced or front loaded *or substantially below the Employer's estimates*, the *Employer* may require the Bidder to produce detailed price analyses for any or all items of the *Bill of Quantities*, to demonstrate the internal consistency of those prices with the methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, the *Employer* may require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the *Employer* against financial loss in the event of default of the successful Bidder under the Contract.

32. **Qualification of the Bidder**
- 32.1 The *Employer* shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive bid meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.
- 32.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 16.1.
- 32.3 An affirmative determination of qualification shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid, in which event the *Employer* shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder's qualifications to perform satisfactorily.
- 32.4 The capabilities of the manufacturers and subcontractors proposed in its Bid to be used by the lowest evaluated Bidder for identified major items of the Requirements will also be evaluated for acceptability in accordance with the criteria and methodologies defined in Section III, Evaluation and Qualification Criteria. Their participation should be confirmed with a letter of intent between the parties, as needed. Should a manufacturer or subcontractor be determined to be unacceptable, the Bid will not be rejected, but the Bidder will be required to substitute an acceptable manufacturer or subcontractor without any change to the bid price.
33. **Employer's Right to Accept Any Bid, and to Reject Any or All Bids**
- 33.1 The *Employer* reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

G. Award of Contract

34. **Award Criteria**
- 34.1 The *Employer* shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

- 35. Notification of Award**
- 35.1 Prior to the expiration of the period of bid validity, the *Employer* shall notify the successful Bidder, in writing, that its bid has been accepted.
- 35.2 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract
- 35.3 At the same time, the *Employer* shall also notify all other Bidders of the results of the bidding, and shall publish in *UNDB online and in the Bank's website* the results identifying the bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. After publication of the award, unsuccessful bidders may request in writing to the *Employer* for a debriefing seeking explanations on the grounds on which their bids were not selected. The *Employer* shall promptly respond in writing to any unsuccessful Bidder who, after Publication of contract award, requests a debriefing.
- 36. Signing of Contract**
- 36.1 The document will be signed at a date and time set by the *Employer*.
- 36.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the *Employer*.
- 36.3 Upon the successful Bidder's furnishing of the signed Contract Agreement and Performance Security pursuant to ITB 37, the *Employer* will discharge its Bid Security, pursuant to ITB 19.
- 36.4 *Notwithstanding ITB 36.2 above, in case signing of the Contract Agreement is prevented by any export restrictions attributable to the Employer, to the country of the Employer, or to the use of the products/goods, systems or services to be supplied, where such export restrictions arise from trade regulations from a country supplying those products/goods, systems or services, the Bidder shall not be bound by its bid, always provided, however, that the Bidder can demonstrate to the satisfaction of the Employer and of the Bank that signing of the Contract Agreement has not been prevented by any lack of diligence on the part of the Bidder in completing any formalities, including applying for permits, authorizations and*

licenses necessary for the export of the products/goods, systems or services under the terms of the Contract Agreement.

**37. Performance
Security**

37.1 Within twenty-eight (28) days of the receipt of notification of award from the *Employer*, the successful Bidder shall furnish the performance security in accordance with the conditions of contract, subject to ITB 31.3, using for that purpose the Performance Security Form included in Section IX (Contract Forms), or another form acceptable to the Employer. If the performance security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the Employer. A foreign institution providing a bond shall have a correspondent financial institution located in the Employer's Country.

37.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or to sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, or execution of the Bid Security Declaration. In that event the *Employer* may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the *Employer* to be qualified to perform the Contract satisfactorily.

Section II - Bid Data Sheet (BDS)

A. Introduction

ITB 1.1	The <i>Employer</i> is: GOVERNMENT OF MONTSERRAT
ITB 1.1	The name of the bidding process is: Procurement of Reinforced Concrete Road and Drain Construction Services in Cavalla Hill
ITB 2.1	The Recipient of CDB Financing is: The Government of Montserrat
ITB 2.1	The name of the Project is: Rehabilitation of a section of the Cavalla Hill Road to Barzey's By-pass Road
ITB 4.1(a)	<i>The individuals or firms in a JVCA shall be jointly and severally liable.</i>

B. Bidding Documents

ITB 7.1	<p>For <u>clarification purposes</u> only, bidders shall contact the Consultant whose address is:</p> <p>Attention: Vernon White Engineering Solutions Inc. Banks Montserrat, W.I</p> <p>Telephone: (664) 491-7826 Cell: (664) 492-1336</p> <p>Electronic mail address: en_sol@hotmail.com Requests for clarification should be received by the <i>Employer</i> no later than: fourteen (14) days prior to the deadline for submission of bids.</p>
ITB 7.4	<p>A Pre-Bid meeting / site visit shall take place, it will be at the following date, time and place: 29th August 2019</p> <p>Time: 10:00 am</p> <p>Place: Proposed Site for the Rehabilitation of a section of the Cavalla Hill Road to Barzey's By-pass Road</p>

C. Preparation of Bids

ITB 10.1	The language of the bid is: English
ITB 11.1 (b)	<p>The following schedules shall be submitted with the bid:</p> <ol style="list-style-type: none"> 1. Letter of Bid 2. Bill of Quantities 3. Form of Bid Security 4. Technical Proposal 5. Bidder's Qualification 6. Construction Programme
ITB 11.1 (i)	The Bidder shall submit with its bid the following additional documents: Valid Tax Compliance Certificate
ITB 13.1	Alternative bids shall not be permitted.
ITB 13.2	The time for completion shall be 21 calendar days.
ITB 13.4	Alternative technical solutions shall be permitted for the following parts of the Works: N/A
ITB 14.6	<p>The prices quoted by the Bidder shall be fixed and shall not be subject to adjustment during the performance of the contract.</p> <p>The bidder's attention is drawn to the fact that the bid price must include for all costs associated with labour, including the cost of any incentives necessary to attract and retain sufficient labour on site to meet requirements of the programme.</p> <p>The bid price shall include payments necessary to comply with all acts, laws, rules, work permits, national insurance contributions, government stamp tax, taxes and regulations current at the time of bidding including but not limited to those applicable in Montserrat and in the country of origin.</p> <p>Bids that are not fixed and firm in accordance with these requirements will be considered non-responsive and will be rejected.</p>
ITB 15.1	<p>The currency of the bid and the payment currency shall be as described below:</p> <p>Bidders to quote entirely in local currency:</p> <p>The unit rates and the prices shall be quoted by the Bidder in the Bill of Quantities, entirely in Eastern Caribbean Dollars XCD, further referred to</p>

	as “the local currency”.
ITB 18.1	The bid validity period shall be: 90 days.
ITB 19.1	The Bidder shall furnish a bid security in the amount of XCD \$500
ITB 20.1	The original of the bid is <i>required</i> .
ITB 20.2	<p>The written confirmation of authorization to sign on behalf of the Bidder shall:</p> <ul style="list-style-type: none">(a) Demonstrate the authority of the signatory to sign the Bid; and(b) In the case of Bids submitted by an existing or intended JVCA an undertaking signed by all parties (i) stating that all parties shall be jointly and severally liable, if so required in accordance with ITB 4.1(a), and (ii) nominating a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JVCA during the bidding process and, in the event the JV is awarded the Contract, during contract execution.

D. Submission and Opening of Bids

ITB 21.1	Bidders <i>shall not</i> have the option of submitting their bids electronically.
ITB 21.1 (b)	The electronic bidding submission procedures shall be: <i>N/A</i> .
ITB 22.1	<p>For <u>bid submission purposes</u> only, the <i>Employer's</i> address is:</p> <p style="text-align: center;">The Chairman Public Procurement Board Ministry of Finance and Economic Management Government Headquarters Brades Montserrat</p> <p>The deadline for bid submission is:</p> <p>Date: 18th September 2019</p> <p>Time: 12:00 Midday Local Time</p>
ITB 25.1	<p>The bid opening shall take place at:</p> <p style="text-align: center;">Ministry of Finance and Economic Management Government headquarters Brades Montserrat</p> <p>Date: 18th September 2019</p> <p>Time: Immediately after the deadline for submission</p>
ITB 25.1	If electronic bid submission is permitted in accordance with ITB 21.1, the specific bid opening procedures shall be: <i>N/A</i>

E. Evaluation and Comparison of Bids

ITB 30.1	The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: <i>Eastern Caribbean Dollars (XCD)</i>
ITB 31.2	<i>A regional margin of preference shall not apply.</i>
ITB 34.2	The procedure and method for assessing bidders shall be as follows: Initial Review Bids will initially be reviewed to confirm: (I) the bids are duly signed; (II) the bids comply substantially with the requirements of the bidding documents; (III) bidders meet the requirements of the prequalification application post tender submission; (IV) the bids contain no calculation errors. Bids will be checked for arithmetical accuracy and will be corrected by the procedure as detailed in clause ITB 31. If any bidder has deviated to a substantial degree from the specified requirements, then his bid will be rejected.

Section III - Evaluation and Qualification Criteria

This section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders if the bidding was not preceded by a prequalification exercise and post-qualification is applied. In accordance with ITB 34 and ITB 36, no other methods, criteria and factors shall be used. The Bidder shall provide all the information requested in the forms included in Section 4 (Bidding Forms).

Table of Criteria

1.	Evaluation.....	34
1.1	Adequacy of Technical Proposal.....	34
1.2	Multiple Contracts.....	34
1.3	Completion Time.....	34
1.4	Technical Alternatives.....	34
1.5	Margin of Preference [Applicable for ICB only].....	34
2.	Qualification.....	35
2.1	Eligibility.....	35
2.2	Historical Contract Non-Performance.....	36
2.3	Financial Situation.....	37
2.4	Experience.....	39
2.5	Personnel.....	41
2.6	Equipment.....	41

1. Evaluation

In addition to the criteria listed in ITB 34.2 (a) – (e) the following criteria shall apply:

1.1 Adequacy of Technical Proposal

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section 6 (*Employer's Requirements*).

1.2 Multiple Contracts

Pursuant to Sub-Clause 34.4 of the Instructions to Bidders, if Works are grouped in multiple contracts, evaluation will be as follows: N/A

1.3 Completion Time

Completion Time shall be in accordance with ITB 13.2.

1.4 Technical Alternatives

Technical alternatives, if permitted under ITB 13.4, will be evaluated as follows: N/A

1.5 Margin of Preference

If a margin of preference shall apply under ITB 33.1, the procedure will be as follows as:N/A

2. Qualification

Factor	2.1 Eligibility					
Sub-Factor	Requirement	Criteria				Documentation Required
		Single Entity	Bidder			
			Joint Venture, Consortium or Association			
			All partners combined	Each partner	At least one partner	
<i>2.1.1 Nationality</i>	<i>Nationality in accordance with ITB 4.2.</i>	<i>Must meet requirement</i>	<i>Existing or intended JVCA must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Form ELI –1.1 and 1.2, with attachments</i>
<i>2.1.2 Conflict of Interest</i>	<i>No- conflicts of interests as described in ITB 4.3.</i>	<i>Must meet requirement</i>	<i>Existing or intended JVCA must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Letter of Bid</i>
<i>2.1.3 Bank Ineligibility</i>	<i>Not having been declared ineligible by the Bank as described in ITB 4.4.</i>	<i>Must meet requirement</i>	<i>Existing JVCA must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Letter of Bid</i>
<i>2.1.4 Government Owned Entity</i>	<i>Compliance with conditions of ITB 4.5</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Form ELI –1.1 and 1.2, with attachments</i>
<i>2.1.5 Ineligibility based on a United Nations resolution or Recipient's country law</i>	<i>Not having been excluded as a result of the Recipient's country laws or official regulations, or by an act of compliance with UN Security Council resolution, in accordance with ITB 4.8</i>	<i>Must meet requirement</i>	<i>Existing JVCA must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Letter of Bid</i>

Factor	2.2 Historical Contract Non-Performance					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
				All partners combined		Each partner
2.2.1 History of non-performing contracts	Non-performance of a contract did not occur within the last three (3) years prior to the deadline for application submission, based on all information on fully settled disputes or litigation. A fully settled dispute or litigation is one that has been resolved in accordance with the Dispute Resolution Mechanism under the respective contract, and where all appeal instances available to the bidder have been exhausted.	Must meet requirement by itself or as partner to past or existing JVCA	N / A	Must meet requirement by itself or as partner to past or existing JVCA	N / A	Form CON - 2
2.2.2 Pending Litigation	All pending litigation shall in total not represent more than seventy five percent (75%) of the Bidder's net worth and shall be treated as resolved against the Bidder.	Must meet requirement by itself or as partner to past or existing JVCA	N / A	Must meet requirement by itself or as partner to past or existing JVCA	N / A	Form CON – 2

Factor	2.3 Financial Situation					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
All partners combined			Each partner	At least one partner		
2.3.1 Historical Financial Performance	Submission of audited balance sheets or if not required by the law of the bidder’s country, other financial statements acceptable to the Employer, for the last two [2] years to demonstrate the current soundness of the bidders financial position and its prospective long term profitability. Or a letter from a local Financial Institution or Surety stating that it is willing to provide a Performance Bond to the Bidder.	Must meet requirement	N / A	Must meet requirement	N / A	Form FIN – 3.1 with attachments
2.3.2. Average Annual Turnover	Minimum average annual turnover of \$100,000.00, calculated as total certified payments received for contracts in progress or completed, within the last five	Must meet requirement	Must meet requirement	Must meet _____ percent (50%) of the requirement	Must meet _____ percent (50%) of the requirement	Form FIN –3.2

<i>Factor</i>	2.3 Financial Situation					
<i>Sub-Factor</i>	<i>Criteria</i>					<i>Documentation Required</i>
	<i>Requirement</i>	<i>Bidder</i>				
		<i>Single Entity</i>	<i>Joint Venture, Consortium or Association</i>			
<i>All partners combined</i>			<i>Each partner</i>	<i>At least one partner</i>		
	<i>(5) years</i>					
<i>2.3.3. Financial Resources</i>	<i>The Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet: the overall cash flow requirements for this contract and its concurrent commitments.</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must meet _____ percent (50%) of the requirement</i>	<i>Must meet _____ percent (50%) of the requirement</i>	<i>Form FIN –3.3</i>

Factor	2.4 Experience					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
All partners combined			Each partner	At least one partner		
2.4.1 General Experience	Experience under contracts in the role of contractor, subcontractor, or management contractor for at least the last five [5] years prior to the applications submission deadline, and with activity in at least nine (9) months in each year.	Must meet requirement	N / A	Must meet requirement	N / A	Form EXP-4.1
2.4.2 Specific Experience	(a) Participation as contractor, management contractor, or subcontractor, in at least two (2) contracts within the last five (5) years, each with a value of at least \$100,000.00, that have been successfully and substantially completed and that are similar to the proposed Works. The similarity shall be based on the physical size, complexity, methods/technology or other characteristics as described in Section VI, Employer's Requirements.	Must meet requirement	Must meet requirements for all characteristics	N / A	Must meet requirement for one characteristic	Form EXP 2.4.2(a)

<i>Factor</i>	2.4 Experience					
<i>Sub-Factor</i>	<i>Criteria</i>					<i>Documentation Required</i>
	<i>Requirement</i>	<i>Bidder</i>				
		<i>Single Entity</i>	<i>Joint Venture, Consortium or Association</i>			
			<i>All partners combined</i>	<i>Each partner</i>	<i>At least one partner</i>	
2.4.2 Specific Experience	b) For the above or other contracts executed during the period stipulated in 2.4.2(a) above, a minimum experience in the following key activities: General contract administration or general contractor.	Must meet requirements	Must meet requirements	N / A	Must meet requirements	Form EXP-2.4.2(b)

2.5 Personnel

The Bidder must demonstrate that it will have the personnel for the key positions that meet the following requirements:

<i>No.</i>	<i>Position</i>	<i>Total Work Similar Experience (years)</i>	<i>In Similar Works Experience (years)</i>
1			
2			
3			
4			
5			

The Bidder shall provide details of the proposed personnel and their experience records in the relevant Forms included in Section IV, Bidding Forms.

2.6 Equipment

The Bidder must demonstrate that it will have access to the key Contractor's equipment listed hereafter:

<i>No.</i>	<i>Equipment Type and Characteristics</i>	<i>Minimum Number required</i>
1		
2		
3		
4		
5		

The Bidder shall provide further details of proposed items of equipment using the relevant Form in Section IV.

Section IV - Bidding Forms

Table of Forms

Letter of Bid.....	44
Schedules.....	46
Bill of Quantities/Schedules of Prices.....	46
Table(s) of Adjustment Data.....	47
Form of Bid Security (Bank Guarantee).....	48
Form of Bid Security (Bid Bond).....	49
Form of Bid Security Declaration.....	50
Technical Proposal.....	51
Technical Proposal Forms.....	51
Forms for Personnel.....	52
Forms for Equipment.....	54
Bidder's Qualification.....	55
Bidder Information Sheet.....	56
Party to JVCA Information Sheet.....	57
Historical Contract Non-Performance.....	58
Current Contract Commitments/Works in Progress.....	59
Financial Situation.....	60
Average Annual Turnover.....	62
Financial Resources.....	63
General Experience.....	64
Specific Experience.....	65
Specific Experience in Key Activities.....	67

Letter of Bid

The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and address.

Date: _____

To: The Chairman
 Public Procurement Board
 Ministry of Finance and Economic Management
 Government Headquarters
 Brades
 Montserrat

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) Clause 8;
- (b) We offer to execute in conformity with the Bidding Documents the following Works:
Reinforced Concrete Road and Drain Construction Services in Cavalla Hill;
- (c) The total price of our Bid is: _____
 _____ (\$ _____);
- (d) Our bid shall be valid for a period of 90 days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (e) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document;
- (f) Our firm, including any employees, subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries;
- (g) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 4.3;
- (h) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process in accordance with ITB 4.3;

- (i) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible by the Bank, under the *Employer's* country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council;
- (j) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: ¹

Name of Recipient	Address	Reason	Amount
.....
.....

- (k) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (l) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive; and
- (m) If awarded the contract, the person named below shall act as Contractor's Representative: _____

Name:

In the capacity of:

Signed:

Duly authorized to sign the Bid for and on behalf of:

Date:

¹ *If none has been paid or is to be paid, indicate "none".*

Schedules

Bill of Quantities/ Schedules of Prices

Reinforced Concrete Road and Drain Construction Services in Cavalla Hill Ch. 0+025 – 0+225					
Item	Description	Qty	Unit	Rate	Total XCD
1.00	Preliminaries				
1.01	Contractor Preliminaries including mobilization/demobilization, safe operations of equipment, safety of employees and the general public		item		
1.02	Insurance of the works		item		
1.03	Setting out		item		
2.00	Earthworks				
2.01	Excavation and disposal of material to formation level in accordance with design.	200	m ³		
2.02	Scarify and compact existing base material. Supply, place shape and compact additional base material to achieve road profile in accordance with drawings and specifications.	45	m ³		
3.00	Concrete works				
3.01	Supply and place 150mm (6") in-situ concrete in roadway/driveway to comply with 20.7N/mm ² (3000psi) @ 28-days strength. Include for placing 25mmx100mm (1"x4") timber expansion joint @ every 5 metres. Include for poker vibrating in-situ concrete and covering concrete with damp proof membrane in accordance with specifications.	1460	m ²		
3.01	Construction of reinforced concrete curb and slipper drain.	180	m		
3.02	Construction of reinforced Irish drain.	20	m		

4.00	Sub-grade and Concrete Testings				
4.01	Compaction test of sub-grade/base fill material.		item		
3.02	Concrete cube test to be taken for every 20m length of in-situ concrete.		item		
	Total				

Form of Bid Security (Bank Guarantee)

_____ *[Bank's Name, and Address of Issuing Branch or Office]*

Beneficiary: The Government of Montserrat, Brades, Montserrat, West Indies

Date: _____

BID GUARANTEE No.: _____

We have been informed that _____ *[name of the Bidder]* (hereinafter called "the Bidder") has submitted to you its bid dated _____ (hereinafter called "the Bid") for the execution of _____ *[name of contract]* under Invitation for Bids No. _____ ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we _____ *[name of Bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of _____ *[amount in figures]* (_____) *[amount in words]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Form of Bid; or
- (b) having been notified of the acceptance of its Bid by the *Employer* during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy your notification to the Bidder of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

[signature(s)]

Form of Bid Security (Bid Bond)

BOND NO. _____

BY THIS BOND [*name of Bidder*] as Principal (hereinafter called “the Principal”), and [*name, legal title, and address of surety*], **authorized to transact business in** [*name of country of Employer*], as Surety (hereinafter called “the Surety”), are held and firmly bound unto [*name of Employer*] as Obligee (hereinafter called “the Employer”) in the sum of [*amount of Bond*]² [*amount in words*], for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has submitted a written Bid to the *Employer* dated the ___ day of _____, 20___, for the construction of [*name of Contract*] (hereinafter called the “Bid”).

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:

- (a) withdraws its Bid during the period of bid validity specified in the Form of Bid; or
- (b) having been notified of the acceptance of its Bid by the *Employer* during the period of Bid validity; (i) fails or refuses to execute the Contract Form, if required; or (ii) fails or refuses to furnish the Performance Security in accordance with the Instructions to Bidders;

then the Surety undertakes to immediately pay to the *Employer* up to the above amount upon receipt of the *Employer*'s first written demand, without the *Employer* having to substantiate its demand, provided that in its demand the *Employer* shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

The Surety hereby agrees that its obligation will remain in full force and effect up to and including the date 28 days after the date of expiration of the Bid validity as stated in the Invitation to Bid or extended by the *Employer* at any time prior to this date, notice of which extension(s) to the Surety being hereby waived.

IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this ___ day of _____ 20___.

Principal: _____

Surety: _____
Corporate Seal (where appropriate)

(Signature)

(Signature)

(Printed name and title)

(Printed name and title)

² The amount of the Bond shall be denominated in the currency of the *Employer*'s country or the equivalent amount in a freely convertible currency.

Technical Proposal

Technical Proposal Forms

Personnel

Equipment

Site Organization

Method Statement

Mobilization Schedule

Construction Schedule

Others

Forms for Personnel

Form PER – 1: Proposed Personnel

Bidders should provide the names of suitably qualified personnel to meet the specified requirements for each of the positions listed in Section III (Evaluation and Qualification Criteria). The data on their experience should be supplied using the Form below for each candidate.

1.	Title of position
	Name
2.	Title of position
	Name
3.	Title of position
	Name
4.	Title of position
	Name
5.	Title of position
	Name
6.	Title of position
	Name
etc.	Title of position
	Name

Forms for Equipment

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III (Evaluation and Qualification Criteria). A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder. The Bidder shall provide all the information requested below, to the extent possible. Fields with asterisk (*) shall be used for evaluation.

Type of Equipment*	
Equipment Information	Name of manufacturer
	Capacity*
	Model and power rating
	Year of manufacture*
Current Status	Current location
	Details of current commitments
Source	Indicate source of the equipment <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially manufactured

The following information shall be provided only for equipment not owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

Bidder's Qualification

To establish its qualifications to perform the contract in accordance with Section III (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder

Form ELI 1.1
Bidder Information Sheet

Date: _____

Page _____ of _____ pages

1. Bidder's Legal Name
2. In case of <i>JVCA</i> , legal name of each party:
3. Bidder's actual or intended Country of Registration:
4. Bidder's Year of Registration:
5. Bidder's Legal Address in Country of Registration:
6. Bidder's Authorized Representative Information Name: Address: Telephone/Fax numbers: Email Address:
7. Attached are copies of original documents of: <input type="checkbox"/> Articles of Incorporation or Registration of firm named in 1, above, in accordance with ITB Sub-Clauses 4.1 and 4.2. <input type="checkbox"/> In case of <i>JVCA</i> , letter of intent to form <i>JVCA</i> including a draft agreement, or <i>JVCA</i> agreement, in accordance with ITB Sub-Clauses 4.1

Form ELI 1.2
Party to JVCA Information Sheet

Date: _____

Page _____ of _____ pages

1. Bidder's Legal Name:
2. <i>JVCA</i> 's Party legal name:
3. <i>JVCA</i> 's Party Country of Registration:
4. <i>JVCA</i> 's Party Year of Registration:
5. <i>JVCA</i> 's Party Legal Address in Country of Registration:
6. <i>JVCA</i> 's Party Authorized Representative Information Name: Address: Telephone/Fax numbers: Email Address:
7. Attached are copies of original documents of: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Articles of Incorporation or Registration of firm name in 1, above, in accordance with ITB Sub-Clauses 4.1 and 4.2.

Form CON – 2

Historical Contract Non-Performance

Bidder’s Legal Name: _____ Date: _____
 JVCA Partner Legal Name: _____

Page _____ of _____ pages

Non-Performing Contracts in accordance with (Evaluation and Qualification Criteria)			
<input type="checkbox"/> Contract non-performance did not occur during the stipulated period, in accordance with Sub-Factor 2.2.1 of Section III (Evaluation and Qualification Criteria)			
<input type="checkbox"/> Contract non-performance during the stipulated period, in accordance with Sub-Factor 2.2.1 of Section III(Evaluation and Qualification Criteria).			
Year	Outcome as Percent of Total Assets	Contract Identification	Total Contract Amount (current value, US\$ equivalent)
_____	_____	Contract Identification: Name of <i>Employer</i> : _____ Address of <i>Employer</i> : _____ Matter in dispute: _____	_____
Pending Litigation, in accordance with Section III (Evaluation and Qualification Criteria)			
<input type="checkbox"/> No pending litigation in accordance with Sub-Factor 2.2.2 of Section III(Evaluation and Qualification Criteria)			
<input type="checkbox"/> Pending litigation in accordance with Sub-Factor 2.2.2 of Section III(Evaluation and Qualification Criteria), as indicated below			
Year	Outcome as Percent of Total Assets	Contract Identification	Total Contract Amount (current value, US\$ equivalent)
_____	_____	Contract Identification: Name of <i>Employer</i> : _____ Address of <i>Employer</i> : _____ Matter in dispute: _____	_____
_____	_____	Contract Identification: Name of <i>Employer</i> : _____ Address of <i>Employer</i> : _____ Matter in dispute: _____	_____

Form CCC

Current Contract Commitments / Works in Progress

Bidders and each partner to a *JVCA* should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Name of contract	<i>Employer,</i> contact address/tel/fax	Value of outstanding work (current US\$ equivalent)	Estimated completion date	Average monthly invoicing over last six months (US\$/month)
1.				
2.				
3.				
4.				
5.				
etc.				

*Form FIN – 3.2***Average Annual Turnover**

Bidder's Legal Name: _____ Date: _____

JVCA Partner Legal Name: _____
Page _____ of _____ pages

Annual turnover data (construction only)		
Year	Amount and Currency	US\$ equivalent
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
*Average Annual Construction Turnover	_____	_____

*Average annual turnover calculated as total certified payments received for work in progress or completed over the number of years specified in Section III(Evaluation and Qualification Criteria), Sub-Factor 2.3.2, divided by that same number of years.

Form FIN3.3
Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in Section III (Evaluation and Qualification Criteria)

Source of financing	Amount (US\$ equivalent)
1.	
2.	
3.	
4.	

Experience

General Experience

Bidder's Legal Name: _____ Date: _____

JVCA Partner Legal Name: _____ Page _____ of _____ pages

Starting Month / Year	Ending Month / Year	Years*	Contract Identification	Role of Bidder
_____	_____	_____	Contract name: Brief Description of the Works performed by the Bidder: Name of <i>Employer</i> : Address:	_____
_____	_____	_____	Contract name: Brief Description of the Works performed by the Bidder: Name of <i>Employer</i> : Address:	_____
_____	_____	_____	Contract name: Brief Description of the Works performed by the Bidder: Name of <i>Employer</i> : Address:	_____
_____	_____	_____	Contract name: Brief Description of the Works performed by the Bidder: Name of <i>Employer</i> : Address:	_____
_____	_____	_____	Contract name: Brief Description of the Works performed by the Bidder: Name of <i>Employer</i> : Address:	_____
_____	_____	_____	Contract name: Brief Description of the Works performed by the Bidder: Name of <i>Employer</i> : Address:	_____

*List calendar year for years with contracts *with at least nine (9) months activity per year starting with the earliest year*

Form EXP – 2.4.2(a)
Specific Experience

Bidder’s Legal Name: _____ Date: _____

JVCA Partner Legal Name: _____

Page _____ of _____ pages

Similar Contract Number: ___ [insert specific number] of ___ [insert total number of contracts required].	Information		
Contract Identification	_____		
Award date	_____		
Completion date	_____		
Role in Contract	<input type="checkbox"/> Contractor	<input type="checkbox"/> Management Contractor	<input type="checkbox"/> Subcontractor
Total contract amount	_____		US\$ _____
If partner in a JVCA or subcontractor, specify participation of total contract amount	_____ %	_____	US\$ _____
Employer’s Name:	_____		
Address:	_____ _____ _____		
Telephone/fax number:	_____ _____		
E-mail:	_____		

**Form EXP – 2.4.2(a) (cont.)
Specific Experience (cont.)**

Bidder’s Legal Name: _____ Page _____ of _____ pages

JVCA Partner Legal Name: _____

Similar Contract No. <i>__</i>[insert specific number] of <i>__</i>[insert total number of contracts] required	Information
Description of the similarity in accordance with Sub-Factor 2.4.2a) of Section III (Evaluation and Qualification Criteria):	
<i>Amount</i>	_____
<i>Physical size</i>	_____
<i>Complexity</i>	_____
<i>Methods/Technology</i>	_____
<i>Physical Production Rate</i>	_____

Form EXP – 2.4.2(b)

Specific Experience in Key Activities

Bidder’s Legal Name: _____ Date: _____

JVCA Partner Legal Name: _____

Subcontractor’s Legal Name: _____ Page _____ of _____ pages

	Information		
Contract Identification	_____		
Award date	_____		
Completion date	_____		
Role in Contract	<input type="checkbox"/> Contractor	<input type="checkbox"/> Management Contractor	<input type="checkbox"/> Subcontractor
Total contract amount	_____		US\$ _____
If partner in a JVCA or subcontractor, specify participation of total contract amount	_____ %	_____	US\$ _____
Employer’s Name:	_____		
Address:	_____ _____ _____		
Telephone/fax number:	_____ _____		
E-mail:	_____		

Form EXP – 2.4.2 (b)(cont.)
Specific Experience in Key Activities (cont.)

Bidder's Legal Name: _____ Page _____ of _____ pages
 JVCA Partner Legal Name: _____
 Subcontractor's Legal Name: _____

	Information
Description of the key activities in accordance with Sub-Factor 2.4.2b) of Section III (Evaluation and Qualification Criteria):	

Section V - Eligible Countries

The eligible countries shall be in accordance with CDB rules.

PART 2 – *Employer's* Requirements

Section VI - *Employer's* Requirements

Table of Contents

Specifications	4
Drawings	21
Supplementary Information	33
Environmental Management Plan.....	47

Specifications

SECTION 1 — GENERAL ITEMS

1.1 SITE SERVICES

Any arrangements that the Contractor enters into regarding the provision of electricity, water and other services shall be the sole responsibility of the Contractor. The Contractor shall take all reasonable care to ensure that water is not wasted. The Contractor shall be liable for all charges arising from such arrangements

1.2 SITE POSSESSION

The contractor is responsible for obtaining permission to enter private lands.

1.3 PLANT HIRE

The contractor shall be responsible for payment of all plant hire charges from MCWL or others for plant the contractor uses on this project. The Employer shall not be responsible for delays or costs attributable to the delivery, performance or workmanship of plant or equipment under hire. The Contractor shall be responsible for the actions of any plant on hire and shall provide adequate instruction and supervision of drivers, plant, and machines.

1.4 DISRUPTION

The Contractor is responsible for arranging the Works to minimise disruption to, local residents and commercial activities in the vicinity of the site. Full and sufficient precautions to ensure the safety of all traffic through and around the work site and of traffic that is diverted by the Works shall be taken at all times, such measures to be approved by the MCWL. Signs shall be erected and maintained on the Site and at prescribed points on the approaches to the Site for the direction and control of traffic. The sizes of all such signs and the lettering and wording thereon shall be approved before erection. Construction and excavations shall be signed posted and, during periods of darkness lighted.

In the event of the operation of single-way traffic becoming necessary on any particular length of the Works or on the approaches to the Works, through traffic routes shall be maintained by providing a width of at least 3m for single-way traffic. Manually "Stop/Go" signal shall be used and be of an approved colour and type.

The Contractor is obliged to seek the approval of the Engineer before occupying any area of the site for the storage of materials, plant or equipment or welfare facilities.

1.5 UTILITY COMPANY SERVICES

The Contractor shall be responsible for contacting the utility companies to arrange for location of their plant at the site. The Contractor shall also notify the companies of any excavation in the vicinity of their plant and give sufficient notice to allow them to attend on site if required.

The contractor shall locate all buried plant in the vicinity of any area of excavation and mark the position clearly on site. The Contractor shall locate buried service within any area of excavation by hand digging before mechanical excavation is used.

The Contractor shall be deemed to be in control of all plant hired to him and shall be responsible for its actions. Should any utility company equipment be damaged by the Contractor or plant hired to him, the Contractor shall be responsible for paying any charges or costs associated with its repair. The Contractor shall also allow free and unhindered access to utility company employees carrying out any such repair work.

1.6 **INSURANCE**

The Contractor is required to obtain contractors all risk insurance to cover at least public liability and damage to property and persons. The Contractor shall be required to prove that he has such insurance and that the sums insured are sufficient for the works in hand prior to commencement of the works. The Contractor shall ensure that the insurance remains valid throughout the period of the works and that any premiums due are paid. The Engineer may request proof of insurance at any time during the works.

1.7 **DRAWINGS**

The following is a list of drawings that form part of the Contract:

- Horizontal Alignment
- Road Alignment Cross Sections
- Vertical Alignment Details
- Pavement Cross Section Details.

SECTION 2 — EARTHWORKS

2.1 **GENERAL**

This work shall comply with the General Conditions.

2.2 **WORK INCLUDED**

Any and all excavation, filling, backfill and grading required to accomplish work in this Section as can be reasonably inferred from the drawings and as hereinafter specified.

If necessary, any loose shallow material, soft organic deposits or similar unsuitable material shall be excavated prior to backfilling ditch to the required level.

Locate and mark all services in the vicinity of any excavation in consultation with the utility company concerned. Where any utility is thought to cross an area of excavation it is to be located by hand digging prior to the use of mechanical excavation.

Remove, protect, cap or otherwise dispose of, as approved by utility company or local authorities, any utilities, sewers or any underground obstructions encountered.

All necessary shoring and bracing.

Provide and maintain all required pumping to keep excavation sufficiently dry until completion of foundation work and backfilling.

2.3 SURVEYS

Bench marks, monuments and other reference marks shall be properly maintained and if destroyed, accurately and properly replaced by the Contractor.

The Contractor shall be responsible for all setting out. Relevant information attached

2.4 STRIPPING OF TOP SOIL

All suitable topsoil to be reused shall be stripped and stockpiled where directed within the limit lines of the contract premises or as directed by the Consultant.

Top soil shall be spread or disposed of as directed or indicated by the Consultant and/or drawings.

2.5 EXCAVATION

2.5.1 **General.** This work shall consist of excavation, disposal or compaction of all materials not being removed under some other item which is encountered within the limits of the Contract in accordance with the specifications and in close conformity with the lines, grades, thickness and cross-sections shown on the plans or established by the Consultant.

2.5.2 **Unsuitable Material.** Material that is unsuitable for the planned use shall be excavated and disposed of as directed by the Consultant. The removal and disposal of such unsuitable material will be paid for in the actual quantities removed to construct the works only if such removal is required to carry out the works shown on the Plans or in the Specifications.

2.6 STRUCTURE EXCAVATION AND BACKFILL

2.6.1 **General.** Structure excavation shall consist of the removal of material for the construction of foundations for bridges, retaining walls, head-walls, culverts, or other structures, and other excavation designated on the Plans or in the Specifications as structure excavation.

Structure backfill shall consist of furnishing material, if necessary, and placing and compacting backfill material around structures to the lines designated on the Plans.

Structure excavation and structure backfill shall include the furnishing of all materials and equipment; the construction or installation of all cofferdams and other facilities which may be necessary to perform the excavations and to place and compact the backfill; and the subsequent removal of such facilities, except where they are required or permitted by the Plans or Specifications to remain in place.

2.6.2 **Inspection.** Whenever any structure excavation is completed, the Contractor shall notify the Consultant who will make an inspection of the foundation. No concrete or masonry shall be placed until the foundation has been approved by the Consultant.

2.6.3 **Structure Backfill Requirements.** Structure backfill shall not be placed until the structure has been inspected by the Consultant and approved for backfilling. No backfill material shall be deposited against the back of concrete abutments or concrete retaining walls, until the concrete has developed not less than the specified 28-day compressive strength. Backfill at the inside of bridge wing-walls shall be placed before railing bases on the wing-walls are constructed.

Material used for structure backfill shall have a sand equivalent of not less than 20 and shall have the following grading:

Sieve Size	Percent Passing
4"	100
No. 4	35-100
No. 30	20-100

Structure backfill shall be placed in 8-inch horizontal lifts and shall be mechanically compacted to a minimum relative compaction of 90 percent.

2.6.4 **Pervious Backfill.** Pervious backfill material shall be placed behind bridge abutments, wing-walls and retaining walls as shown on the Plans and in accordance with the following requirements.

Pervious backfill material shall consist of gravel, crushed gravel, crushed rock, natural sands, manufactured sand, or combinations thereof and shall conform to the following grading requirements:

Sieve Size	Percent Passing
3/4"	100
3/8"	80-100
No. 100	0-8
No. 200	0-3

That portion of filter material passing a No. 4 sieve shall have a sand equivalent of not less than 60.

Sand and gravel sourced from beaches shall not be permitted unless it has been thoroughly washed in clean water. Such sand and gravel shall be tested for the presence of salts before placing.

All weep holes shall be backed with 2 cubic feet of coarse aggregate — with no more than 50% of all faces fractioned — securely tied in a burlap sack and placed in such a manner that the backing covers the weep holes and extends at least 12 inches above the bottom of the opening. An 8-inch square section of 1/4-inch galvanized or aluminum screen having a minimum wire diameter of 0.03 inches shall be firmly attached at the back of each weep hole before the material is placed.

Pervious backfill material shall be placed in layers along with and by the same methods specified for structure backfill. Pervious backfill material at any one location shall be approximately the same grading, and, at locations where the material would otherwise be exposed to erosion, shall be covered with at least a 1-foot layer of earthy material approved by the Consultant.

2.7 SHORING AND BRACING

Include all shoring and bracing necessary to retain earth banks, adjoining buildings and prevent caving in or displacement of adjacent soil, improvements or buildings.

SECTION 3 — ROAD PAVEMENT

3.1 GENERAL

This Work shall comply with the General Conditions.

3.2 WORK INCLUDED

This Work shall consist of the shaping, trimming, compacting and finishing of the sub-grade, the grading and finishing of all unpaved shoulders and slopes, and the preparation of all areas for topsoil, loam, riprap or slope paving as shown on the Plans or as directed, shall be constructed in accordance with these specifications and in close conforming with the lines, grades and typical cross-sections shown on the Plans or established by the Engineer.

3.3 SUBGRADE PREPARATION

3.3.1 **General.** This section shall govern the preparation of natural, filled, or excavated roadbed material prior to the placement of sub-base or base material, pavement, curbs and gutters, driveways, sidewalks or other roadway structures.

3.3.2 **Preparation of Subgrade.** Scarifying and cultivating will be required for dry soils which are impervious to the penetration of water, for soils which contain excessive amounts of moisture which may result in unstable foundations, for soils which are non-uniform in character which may result in non-uniform relative compactions and subsequent differential settlements of finished surfaces, or when pavement is to be placed directly on the roadbed material. Unsuitable material found below the processing depth for subgrade specified herein shall be excavated and disposed of as directed by the Consultant.

After rough grading has been completed, when scarifying and cultivating are required, the roadbed shall be loosened to a depth of at least six (6) inches. The loosened material shall then be worked to a finely divided condition and all rocks larger than three (3) inches in diameter shall be removed. The moisture content shall be brought to optimum by the addition of water, by the addition and blending of dry suitable material or by the frying of existing material. The material shall then be compacted by approved equipment to the specified relative compaction.

Uniform pervious soils that allow the immediate penetration of water or uniform impervious soils which will allow the penetration of water to a depth of at least six (6) inches after the addition of a suitable wetting agent, will not require scarifying and cultivating unless a condition previously set forth in this sub-section requires such processing. When scarifying and cultivating are not required, the moisture content of the top six (6) inches of the subgrade material shall be brought to optimum by the addition of water at the surface, and the material shall be compacted by approved equipment to the specified relative compaction.

3.3.3 **Relative Compaction.** Except when pavement is to be placed directly on subgrade material, the top six (6) inches of subgrade material shall be compacted to a relative compaction of 95%. When base or sub-base material, curb, gutter, driveways, or sidewalks are to be placed on the subgrade material, the top six (6) inches of such subgrade material shall be compacted to a relative compaction of 90 percent.

After compaction and trimming, the subgrade shall be firm, hard, and unyielding.

3.3.4 **Subgrade Tolerances.** Subgrade for pavement, sidewalk, curb and gutter, driveways, or other roadway structures shall not vary more than 0.02 foot from the specified grade and cross-section. Subgrade for sub-base or base material shall not vary more than 0.04 foot from the specified grade and cross-section. Variations within the above specified

tolerances shall be compensating so that the average grade and cross-section specified are met.

3.3.5 **Grading of Areas Not To Be Paved.** Roadway areas where “grade only” is called for on the Plans shall be graded to meet the tolerances for base subgrade. The surface shall be constructed to a straight grade from the finish pavement or curb elevations shown on the Plans to the elevation of the existing ground at the extremities of the area to be graded.

3.3.6 **Adjustment of Manhole Frame and Cover Sets to Grade.** Utility manhole and vault frames and covers within an area to be paved or graded will be set by the owners thereof to finish grade.

The Contractor shall remove all debris attributable to his work from manholes.

3.4 **UNTREATED BASE**

3.4.1 **General.** Untreated base for pavement, curb, drains and similar types of improvements, shall be constructed as specified.

3.4.2 Material used for untreated base shall have the following grading:

Sieve Size	Percent Passing
1-1/2"	100
3/4"	90-100
3/8"	50-80
No. 4	35-55
No. 30	10-30
No. 200	2-9

3.4.3 **Spreading.** Imported aggregate bases shall be delivered to the roadbed as uniform mixtures and each layer shall be spread in one operation. Segregation shall be avoided and the base shall be free from pockets of coarse or fine material.

Aggregate bases shall be deposited on the roadbed at a uniform quantity per linear foot, which quantity will provide the required compacted thickness within the tolerances specified herein without resorting to spotting, picking up or otherwise shifting the aggregate base material. At the time aggregate base is spread, it shall have a moisture content sufficient to obtain the required compaction. Such moisture shall be uniformly distributed throughout the material.

Where the required thickness is six (6) inches or less, the base material may be spread and compacted in one layer. Where the required thickness is more than six (6) inches the base material shall be spread and compacted in two or more layers of approximately equal

thickness, and the maximum compacted thickness of any one layer shall not exceed six (6) inches. Each layer shall be spread and compacted in a similar manner.

The use of motor graders will be permitted during depositing, spreading and compacting operations, except where self-propelled spreaders are specified.

When the subgrade for aggregate base consists of cohesionless sand and written permission is granted by the Consultant, a portion of the aggregate base may be dumped in piles upon the subgrade and spread ahead from the dumped material in sufficient quantity to stabilize the subgrade. Segregation of aggregates shall be avoided and the material as spread should be free from pockets of coarse or fine material.

- 3.4.4 **Compacting.** Rolling shall always be commenced along the edge of the area to be compacted and the roller shall gradually advance toward the center of the area to be compacted.

Rollers shall be operated along lines parallel or concentric with the centerline of the road being constructed, and no material variation there from will be permitted. All rollers must be maintained in good mechanical condition.

The relative compaction of each layer of compacted base material shall not be less than 95 percent, except in the areas back of curb (under sidewalks and driveways). Compaction in the excepted areas shall have a minimum relative compaction of 90 percent.

The surface of the finished aggregate base at any point shall not vary more than 0.02 foot above or below the grade established by the Consultant.

Base which does not conform to the above requirements shall be reshaped or reworked, watered and thoroughly compacted to conform to the specified requirements.

3.5 CEMENT CONCRETE PAVEMENT

- 3.5.1 **General.** Unless otherwise specified, Portland cement concrete pavement shall be constructed of concrete prepared as prescribed below:

- a. All concrete shall be to working strength of 3000 PSI in 28 days, shall have as a minimum OPC content of 500 lbs per cubic yard and a maximum free water/cement ratio of 0.5.
- b. Cover to reinforcement shall be 2 inches. Reinforcement shall be round mild steel bars unless shown otherwise on the drawings.
- c. All reinforced concrete shall be fully compacted by means of power-driven immersion type vibrators. The concrete shall be vibrated until the section is a solid mass entirely free of voids and cavities. Care should be taken to ensure excessive

vibration does not occur. Vibrators shall not be allowed to come into contact with the reinforcement, shutter ties or shutter faces.

- d. The concrete must not be loaded or otherwise worked on until the period of curing is complete or the concrete has reached an adequate strength, whichever comes later.
- e. Construction joints at positions where no contraction or expansion joint is to be constructed shall have the full area of reinforcement continuing across the joint. The surface of the joint shall be scabbled to remove surface laitance prior to casting the adjacent section.

3.5.2 Forms and Headers

- 3.5.2.1 **General.** The formwork must be sufficiently rigid and tight to prevent loss of grout or mortar from the concrete at all stages and for the appropriate method of placing and compacting the concrete. Formwork (including supports) shall be sufficiently rigid to maintain the forms in their correct position and to correct shape and profile so that the final concrete structure is within specification. All formwork shall have its surface scraped smooth and clean before re-use. Any damage to formwork shall be repaired before re-use.

Forms and headers shall be either wood or metal. They shall be set plumb and true to line and grade, with the upper edge thereof set to the grade of the pavement to be constructed; and shall be rigidly installed on a true alignment and so maintained for a distance in advance of placing the pavement to provide for at least a one-day run of concrete. Headers shall rest firmly on the subgrade or base. They shall be oiled immediately prior to the placing of the concrete and shall remain in place for at least 12 hours after concrete has been placed. Forms and headers must be removed before the work will be accepted.

- 3.5.2.2 **Wooden Forms.** Wooden forms shall be constructed of 3-inch nominal lumber in pieces not less than eight (8) feet long, except where changes in alignment or grade necessitate the use of material of smaller dimensions. The lumber used shall be free from warp and other imperfections which would impair the strength for the use intended; shall have square edges (which shall be slightly bevelled) and square ends; shall be surfaced on the upper edge; and shall be not more than 1/2-inch in depth than the specified thickness of the edge of the pavement.

Such forms shall be secured by nailing to side stakes spaced not more than four (4) feet apart and driven into the subgrade vertically to a depth not less than twelve (12) inches, and so that the tops will be below the upper edge of the header. The stakes shall be of sufficient length and cross-sectional area to adequately resist lateral displacement of the headers during the paving operations.

Wooden headers shall be spliced by nailing a board to the outside of the headers. The board shall be at least four (4) feet long, one (1) inch thick, and at least six (6) inches wide (or the depth of the header, whichever is least), and shall be centered on the joint.

3.5.2.3 Metal Forms. Metal forms shall be free from warp, have sufficient rigidity to resist springing during the paving operations, and shall be not less in depth than the specified thickness of the edge of the pavement being constructed. They shall be secured by means of metal stakes spaced not more than five (5) feet apart and driven below the top of the forms. They shall be designed so as to be driven through openings in the forms to lock them in position.

3.5.3 Mixing

- a. Concrete shall be mixed by purpose-made, power-driven concrete mixers. Hand-mixing of concrete will not be permitted.
- b. Each batch shall be mixed until the concrete is uniform in colour and consistency and for not less than three (3) minutes, which shall be measured from the time when all the solid material is in the mixing drum. All the mixing water shall have been introduced before 25 percent of the mixing period has elapsed. No further water shall be added to the mix once it has left the mixer. Any concrete which has become partly set or too stiff to compact properly shall be discarded.
- c. Volume batching shall be done in purpose-made boxes or by calibrated concrete mixers or with carrying handles which shall be carefully supervised to ensure that the boxes are struck level each time. Water must be measured by volume.
- d. The mixer and associated batching and placing equipment shall be thoroughly cleaned out at the end of each day's work.
- e. The concrete shall be transported from the mixer to the position of placing quickly and in such a way that segregation does not occur. The time between mixing and placing shall not exceed 10 minutes.

3.5.4 Placing Concrete

3.5.4.1 General. Concrete shall be placed on a subgrade sufficiently dampened to ensure that no moisture will be absorbed from the fresh concrete.

- a. Before any concrete is placed, an inspection shall be made to ensure that no dirt, shavings, loose stones, etc. have been allowed to remain in or about the formwork. Formwork and reinforcement shall also be well watered immediately prior to placing the new concrete.

- b. Immediately after being mixed, the concrete shall be deposited on the subgrade to the required depth over the entire width of the section.
- c. Concrete shall be placed gently in position to avoid segregation and not allowed to fall freely from a height greater than six (6) feet.
- d. At the end of each day's run, or at any time when operations are stopped for a period of more than 40 minutes, a rigid transverse header shall be placed vertically and at a right angle across the pavement at the location designated by the Consultant and the pavement shall be finished to form a square vertical joint against which the work may be resumed. Hand-mixing may be used only if necessary to provide sufficient concrete to complete paving to the expedient header.

Great care shall be taken to ensure that reinforcement and embedded structural steel is not displaced during concreting or disturbed after the initial set has taken place.

3.5.5 Finishing

3.5.5.1 **General.** The concrete shall be consolidated, and the surface finished true to grade and cross-section. Upon completion the surface shall be free of any unevenness greater than 1/8 inch when checked with a 10-foot straightedge placed on the surface of the pavement. The 10-foot straightedge shall be furnished by the Contractor and shall be at the Work site prior to the commencing of the placing of the concrete.

3.5.5.2 **Tamping.** The concrete shall be distributed uniformly between the side forms as soon as it is placed, after which the concrete shall be struck off and tamped by means of a mechanical tamper. The tamper shall be operated at right angles to the centerline of the pavement, and tamping continued until the concrete is thoroughly consolidated to the specified cross section and sufficient mortar for finishing purposes has been brought to the surface.

Steel-shod hand tampers or vibrating bars may be substituted in those cases where the use of a mechanical spreader and tamper would be obviously impracticable.

Approved concrete vibrating equipment shall be used in conjunction with the mechanical tamper to consolidate the concrete adjacent to the forms or existing pavement.

3.5.5.3 Floating

- a. **General.** After tamping, the surface of the concrete shall be floated by either the finishing machine method or the transverse-float method described below.

- b. **Finishing-machine Method.** The concrete shall be floated smooth and true to grade with an approved finishing machine.
- c. **Transverse-float Method.** The concrete shall be floated at least twice with a long-handled float at least 5 feet wide, following which the surface of the concrete shall be finished smooth and true to grade, with a wooden float 8 feet long, 2 inches thick, and 6 inches wide. It shall be rigidly ribbed and with adjustable screws between the rib and float board to ensure a true and flat surface on the under side at all times. The float shall be operated from the side of the pavement, and parallel with the centerline.

The edge of the float shall be used to cut down all high areas, and the material so removed shall be floated into the depressions until a true surface is obtained. Each successive pass of the float shall half-lap the previous pass.

- 3.5.5.4 **Final Finishing.** After being finished, the outside edges of pavement shall be rounded to 1/2-inch radius; and transverse joints, expansion joints, and joints adjacent to an existing pavement shall be rounded to 1/4-inch radius.

After working to a smooth finish, draw a stiff bristled broom across the surface of the slab to produce an even non-slip finish of fine parallel lines free from ridges and depressions.

3.5.6 Transverse Expansion Joints

- 3.5.6.1 **General.** Unless otherwise specified all transverse joints shall be constructed perpendicularly to the centerline of the pavement and the face of all joints shall be perpendicular to the finished surface of the pavement.

Transverse expansion joints shall be installed at 20-foot centers. Expansion joint filler material shall have a minimum thickness of 1/2-inch, a maximum thickness of 3/4 inch. After the concrete has been finished, an edger of 1/4-inch radius shall be used on each side of the expansion joint filler. The expansion joint filler shall be cleaned of all concrete mortar.

- 3.5.7 **Curing.** Immediately after the finishing operations have been completed and as soon as marring of the concrete will not occur, the entire surface of the newly placed concrete shall be covered and cured. Curing may be accomplished by flooding or by polythene sheeting in close contact.

SECTION 4 — DRAINAGE

4.1 GENERAL

This Work refers to the Specification and Construction of curbs, slipper drains, U drains and culverts.

4.2 **CURBS**

Shall be precast concrete units 5" wide 9" high and 30" in length and shall be laid in accordance with the drawings with a 1/2" mortar joint between curbs. Curbs may either be laid on a mortar bed on the kerb bedding or laid directly on to the concrete curb bedding before it has cured; curbs are to be tapped down into the concrete bedding to achieve the correct levels. All curbs are to have a curb backing placed behind the laid curb as shown on the drawings.

Curb backing is to be placed before the concrete in the base has set in a single operation. If the base is cast as a separate operation, ½ inch steel dowel bars shall be cast vertically in the base at 12" centers and extend into the curb backing.

Cast insitu curbs may be proposed by the contractor in place of the precast items. The contractor is to supply details of the method of forming and profile of the curb proposed for approval by the consultant if he wishes to use this system. The requirements for bedding, backing and alignment shall remain.

4.3 **SLIPPER DRAIN**

Concrete mixing and placing shall meet the requirements of that for concrete for structural works. The size and layout shall be as shown on the drawings. The exposed face shall be troweled to a smooth finish.

4.4 **U DRAIN**

Concrete mixing and placing shall meet the requirements of that for concrete for structural works. The size, layout and reinforcement shall be as shown on the drawings. The exposed faces shall be troweled to a smooth finish.

4.5 **CULVERT**

The requirements for concrete and associated works shall be that for concrete for structural works. The size, layout and reinforcement shall be as shown on the drawings. The exposed faces shall be troweled to a smooth finish. The contractor shall ensure that all formwork inside the culvert is removed before requesting approval of the completed works

4.6 **CONCRETE HEADWALLS, PARAPETS AND SLABS**

The concrete slabs and headwalls shown on the drawings shall be constructed according to the requirements given for concrete for structural works in this Specification. The reinforcement for the slabs, parapets and headwalls shall be as shown on the drawings. All exposed surfaces shall be given a smooth trowelled finish.

SECTION 5 CONCRETE FOR STRUCTURAL WORKS

5.1 **General.** Unless otherwise specified, headwalls, drains, culverts and other structural elements shall be constructed of concrete prepared as prescribed below:

- a. All concrete shall be to working strength of 3000 PSI in 28 days, shall have as a minimum OPC content of 500 lbs per cubic yard and a maximum free water/cement ratio of 0.5.
- b. Cover to reinforcement shall be 1.5 inches. Reinforcement shall be deformed type 2 high yield steel reinforcing bars unless shown otherwise on the drawings.
- c. All reinforced concrete shall be fully compacted by means of power-driven immersion type vibrators. The concrete shall be vibrated until the section is a solid mass entirely free of voids and cavities. Care should be taken to ensure excessive vibration does not occur. Vibrators shall not be allowed to come into contact with the reinforcement, shutter ties or shutter faces.
- d. The shutters shall not be stripped until the concrete has cured sufficiently to not require the support of the shutters. The concrete must not be loaded or stressed until it has reached an adequate strength to prevent damage occurring. If the Contractor wishes to strip shutters or load the concrete at an early age he must have concrete cubes tested to show that sufficient strength has been attained.
- e. Construction joints at positions where no contraction or expansion joint is to be constructed shall have the full area of reinforcement continuing across the joint. The surface of the joint shall be scabbled to remove surface laitance prior to casting the adjacent section.

5.2 Forms and Headers

5.2.1 **General.** The formwork must be sufficiently rigid and tight to prevent loss of grout or mortar from the concrete at all stages and for the appropriate method of placing and compacting the concrete. Formwork (including supports) shall be sufficiently rigid to maintain the forms in their correct position and to correct shape and profile so that the final concrete structure is within specification. All formwork shall have its surface scraped smooth and clean before re-use. Any damage to formwork shall be repaired before re-use.

5.2.2 Formwork shall be either wood or metal. They shall be set plumb and true to line to the profiles shown on the drawings. They shall be oiled immediately prior to the placing of the concrete and shall remain in place until the concrete has reached sufficient strength as

described in section d above. Formwork must be removed before the work will be accepted.

5.3 **Materials for Reinforced Concrete**

5.3.1 **Cement** - Cement shall be Ordinary Portland Cement from a reputable supplier. All cement is to be stored in dry conditions. Any bag opened shall be completely used on the same day or discarded. Any bag found to have become damp or where the cement has partly hardened shall be discarded and not used in the works.

5.3.2 **Admixtures** - Admixtures shall not be used in concrete without the express consent of the Consultant.

5.3.3 **Aggregate**

5.3.3.1 Coarse aggregate shall be clean hard gravel or crushed rock with no deleterious properties. Before the use of aggregate from any source the Contractor shall obtain the Consultant approval of that source, if the Contractor intends to change the source during the works fresh approval of the new source shall be sought. Where required by the Consultant samples of the proposed aggregate shall be tested to ensure that it has satisfactory properties for the proposed use.

5.3.3.2 Fine aggregate shall be sand or crushed rock fines with no deleterious properties, the requirements for testing and approval shall be as noted for coarse aggregate.

5.3.3.3 Aggregate extracted from sea beaches shall not be used unless it has been thoroughly washed in clean water and tested to show no salt remains.

5.3.4 **Reinforcement**

5.3.4.1 Reinforcing bar or mesh is to be from a reputable supplier and quality certificates shall be supplied when requested by the Consultant.

5.3.4.2 Reinforcement is to be fixed in the positions shown on the drawings. Reinforcement is to be firmly tied to prevent movement when concrete is placed. Purpose made cover blocks and spacers shall be used as required.

5.3.4.3 No steel element, reinforcing steel or tie wire shall intrude into the specified cover of the section.

5.3.4.4 All reinforcement is to have adequate lap where bars join and adequate anchorage into concrete at the free ends of bars, all as shown on the drawings. Consult with the Consultant in the event of any doubt as to the structural requirements.

5.3.4.5 The contractor shall give the Consultant at least 24 hours notice before casting any element to allow for inspection of the fixed reinforcement and shutters.

5.4 Formwork

- 5.4.1 Formwork shall be set up to give a smooth surface with no visible joints between sheets and no significant marking of the concrete surface with imperfections in the formwork. Formwork oil shall be selected to avoid any staining or marking of exposed surfaces.

5.5 Mixing

- 5.5.1 Concrete shall be mixed by purpose-made, power-driven concrete mixers. Hand-mixing of concrete will not be permitted.
- 5.5.2 Each batch shall be mixed until the concrete is uniform in colour and consistency and for not less than three (3) minutes, which shall be measured from the time when all the solid material is in the mixing drum. All the mixing water shall have been introduced before 25 percent of the mixing period has elapsed. No further water shall be added to the mix once it has left the mixer. Any concrete which has become partly set or too stiff to compact properly shall be discarded.
- 5.5.3 Volume batching shall be done in purpose-made boxes or by calibrated concrete mixers or with carrying handles which shall be carefully supervised to ensure that the boxes are struck level each time. Water must be measured by volume.
- 5.5.4 The mixer and associated batching and placing equipment shall be thoroughly cleaned out at the end of each day's work.
- 5.5.5 The concrete shall be transported from the mixer to the position of placing quickly and in such a way that segregation does not occur. The time between mixing and placing shall not exceed 10 minutes.
- 5.5.6 Where requested by the Consultant, the Contractor shall cast concrete test cubes in British Standard cube test moulds using the methods specified in the British Standard. The Engineer can supply copies of the cube making instructions if requested. The Contractor shall be responsible for ensuring that the moulds are available on site when required. The Contractor shall be responsible for ensuring that the cubes are stored in an environment similar to the environment of the structure. The Contractor shall permanently label each cube and keep records indicating where within the structure the concrete represented by the cubes was placed. The Consultant will be responsible for testing of cubes.

5.6 Placing Concrete

- 5.6.1 Before any concrete is placed, an inspection shall be made to ensure that no dirt, shavings, loose stones, etc. have been allowed to remain in or about the formwork. Formwork and reinforcement shall also be well watered immediately prior to placing the new concrete, but standing water in the base of the shutter will not be permitted.
- 5.6.2 Immediately after being mixed, the concrete shall be deposited in the shutter to an even depth across the entire width of the section. The production and placing of concrete shall be a continuous operation until the position of agreed construction joints is reached.
- 5.6.3 Concrete shall be placed gently in position to avoid segregation and not allowed to fall freely from a height greater than six (6) feet.
- 5.6.4 Great care shall be taken to ensure that reinforcement and embedded structural steel is not displaced during concreting or disturbed after the initial set has taken place
- 5.6.5 The concrete shall be compacted using a powered vibrating poker until the material is satisfactorily compacted and the release of air bubbles has ceased.
- 5.6.6 At the end of each day's run, or at any time when operations are stopped for a period of more than 20 minutes, a rigid transverse stop end shall be placed at any vertical construction joint formed. All construction joints either horizontal or vertical shall be scabbled to remove any surface laitance before adjacent concrete is cast.
- 5.6.7 Hand mixing of concrete for structures will not be permitted.
- 5.7 **Finishing**
 - 5.7.1 Unformed surfaces shall be finished to a smooth trowelled finish worked to give a dense, blemish free surface with no trowel marks.
 - 5.7.2 Application of mortars or screeds to concrete surfaces to fill blow holes or other surface blemishes will only be permitted with the express consent of the Consultant.
 - 5.7.3 All Exposed corners of headwalls, U drains and other concrete elements shall have the corners chamfered with a 1" x 1" (25mm x 25mm) chamfer.

Drawings



Engineering Solutions
 P.O. Box 474
 Banks
 Montserrat
 West Indies
 T: (664) 491-7826
 F: (664) 491-7827
 E: en_sol@hotmail.com

Revisions

No	Date	Description

General Notes

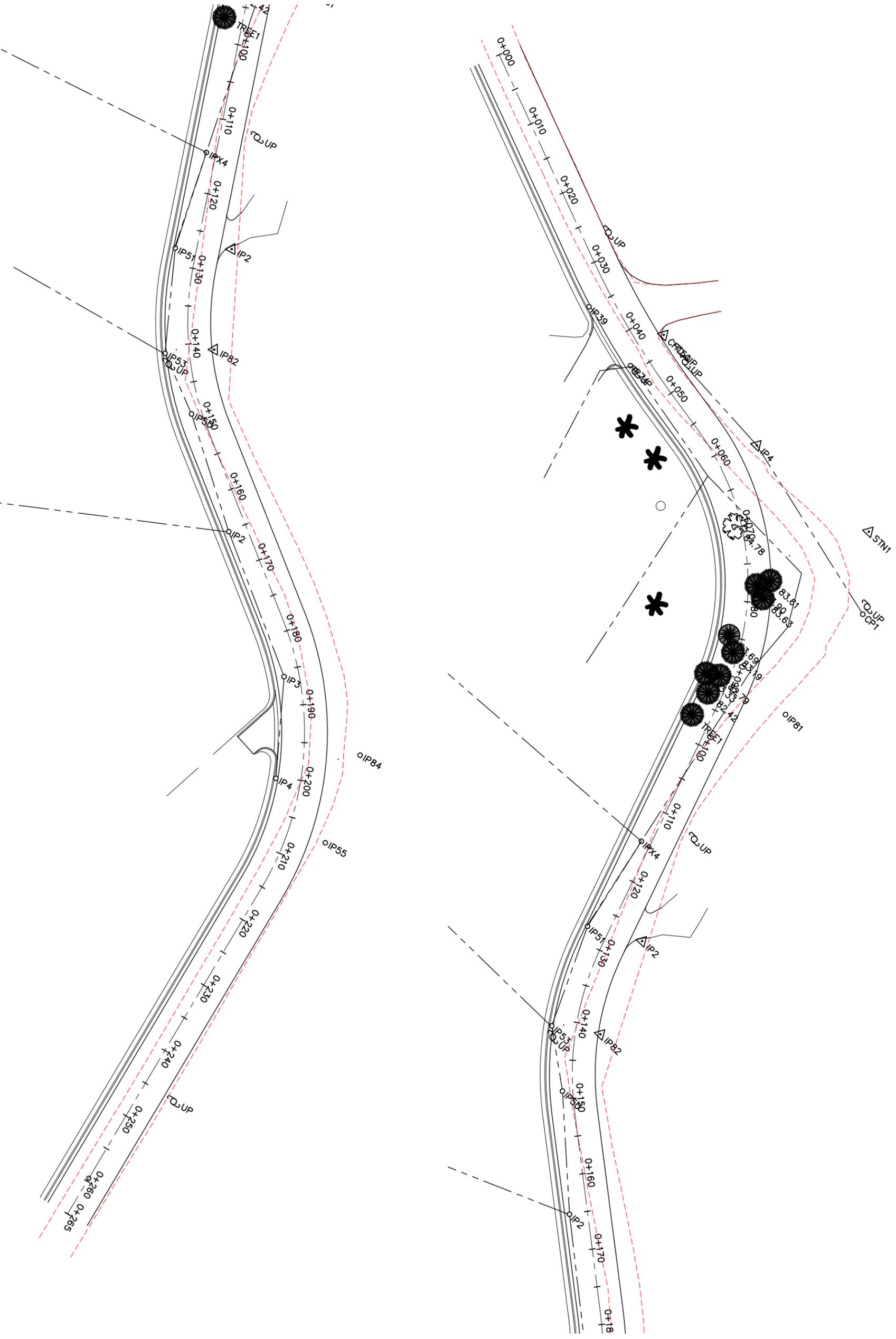
1. Drawings are not to be scaled
2. This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

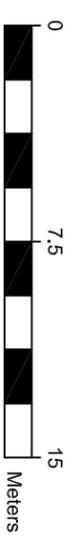
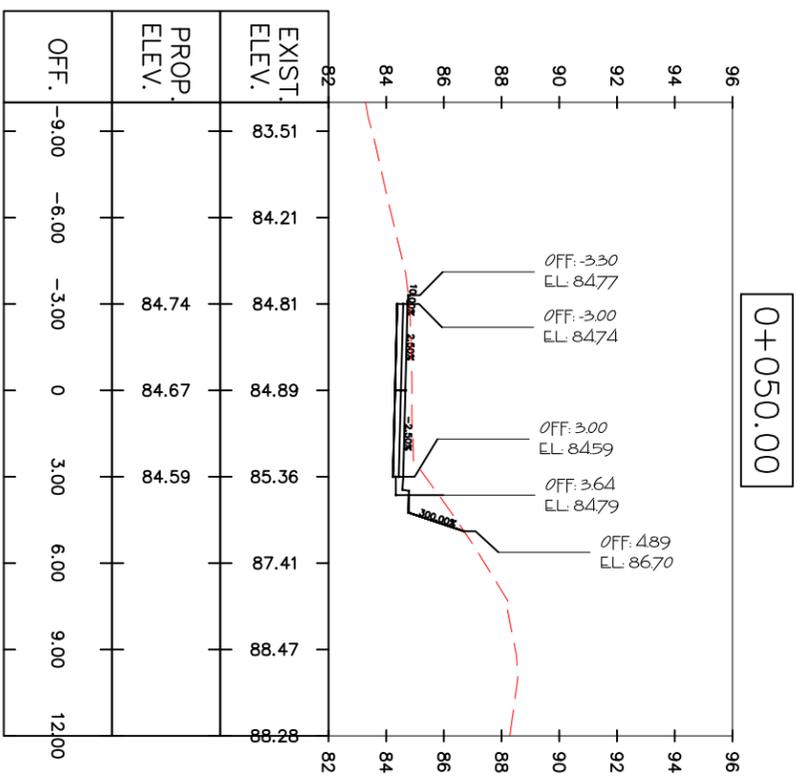
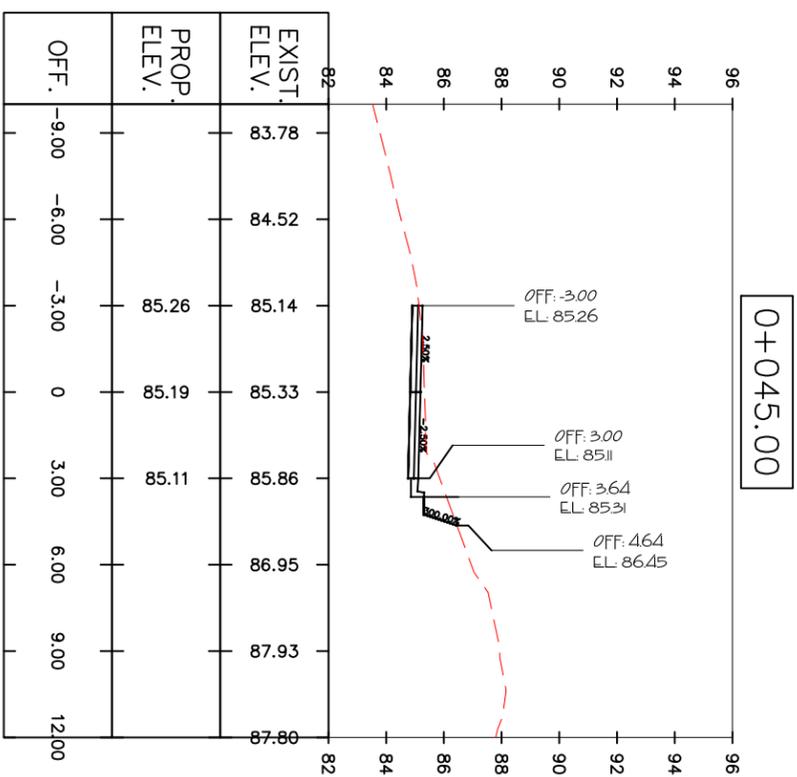
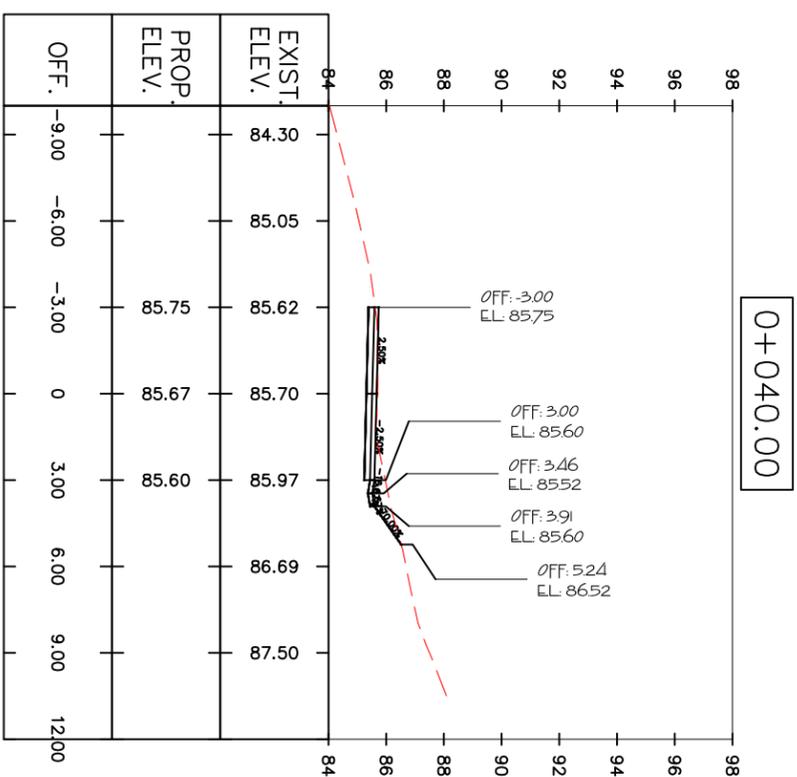
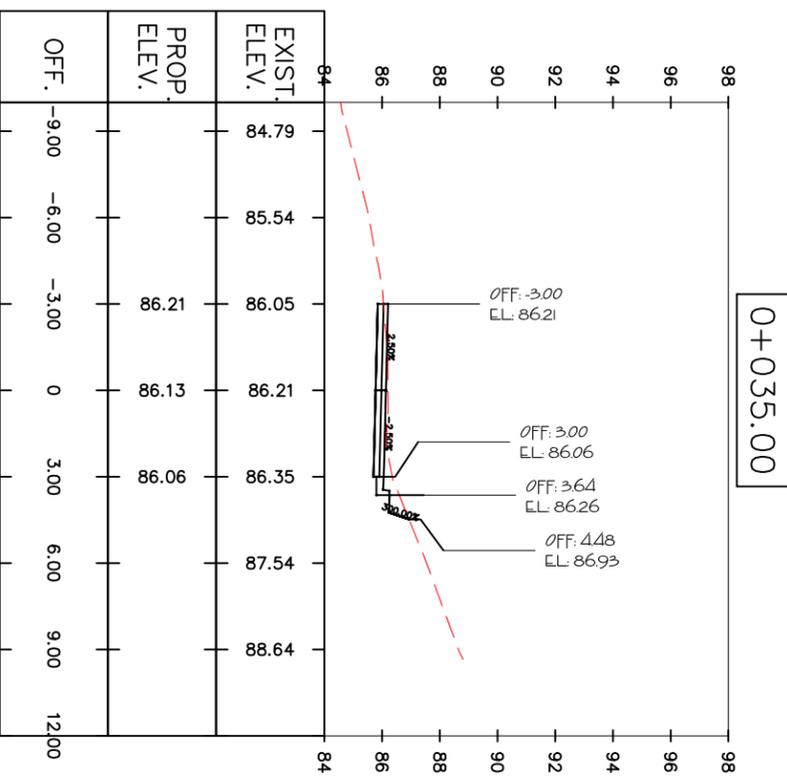
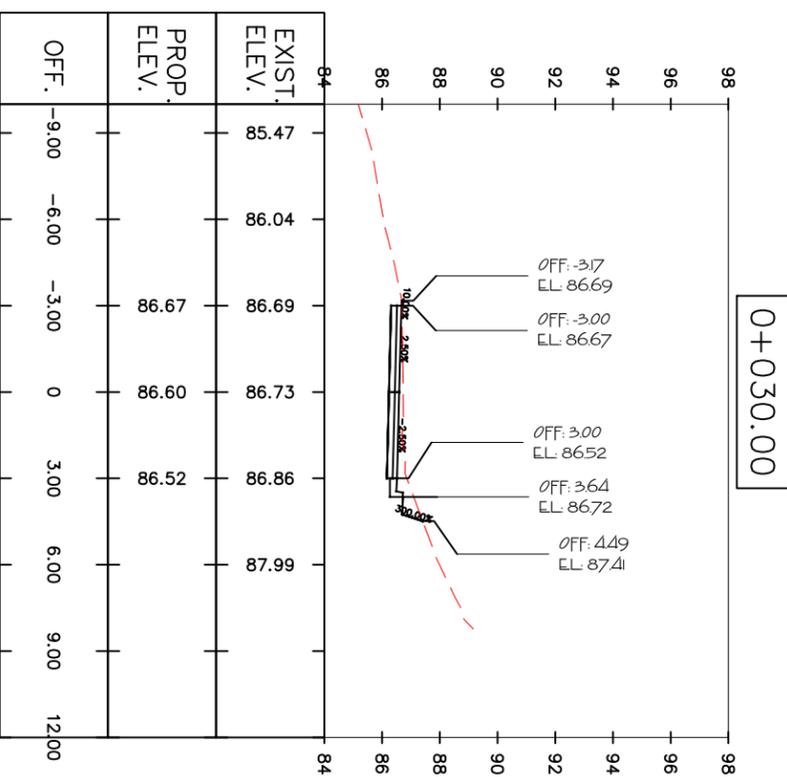
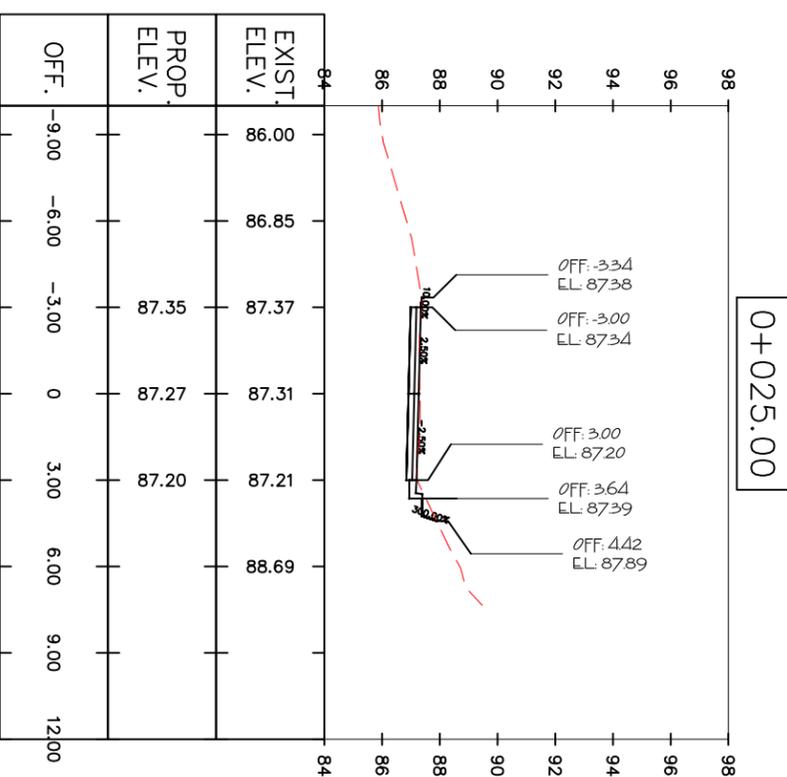
PROJECT
 REHABILITATION
 OF A SECTION OF
 CAVALLA HILL TO
 BARZEY'S BY-PASS
 ROAD

DRAWING
 HORIZONTAL
 ALIGNMENT

PROJECT NO:
 RCHBPR-2018
 DATE
 12 July 2019
 SCALE
 1 : 500
 DRAWN BY:
 John P
 CHECKED BY:

DRAWING NO.
C100





General Notes

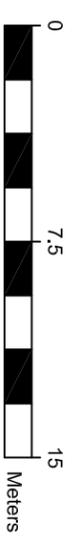
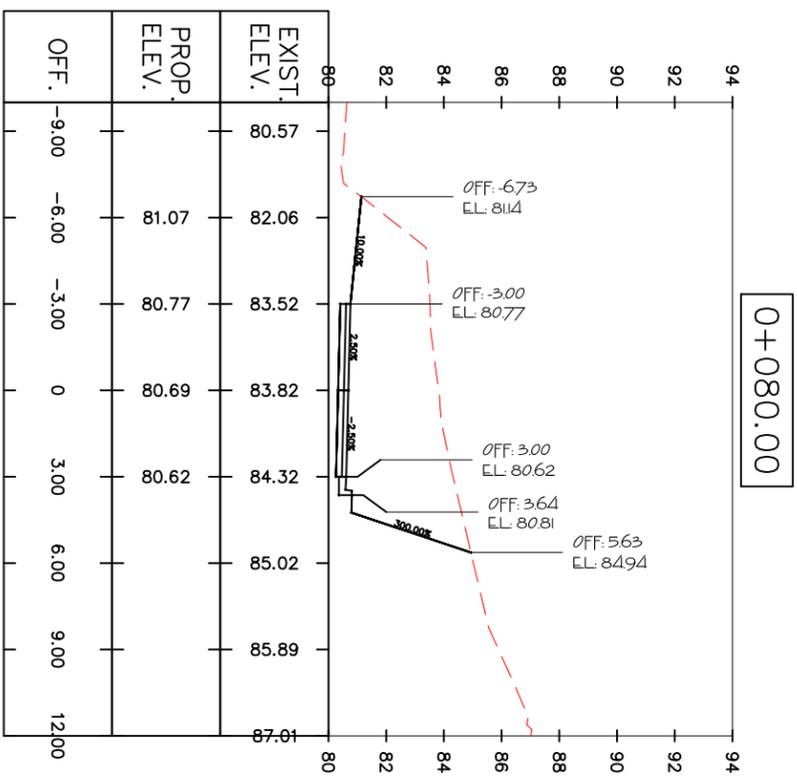
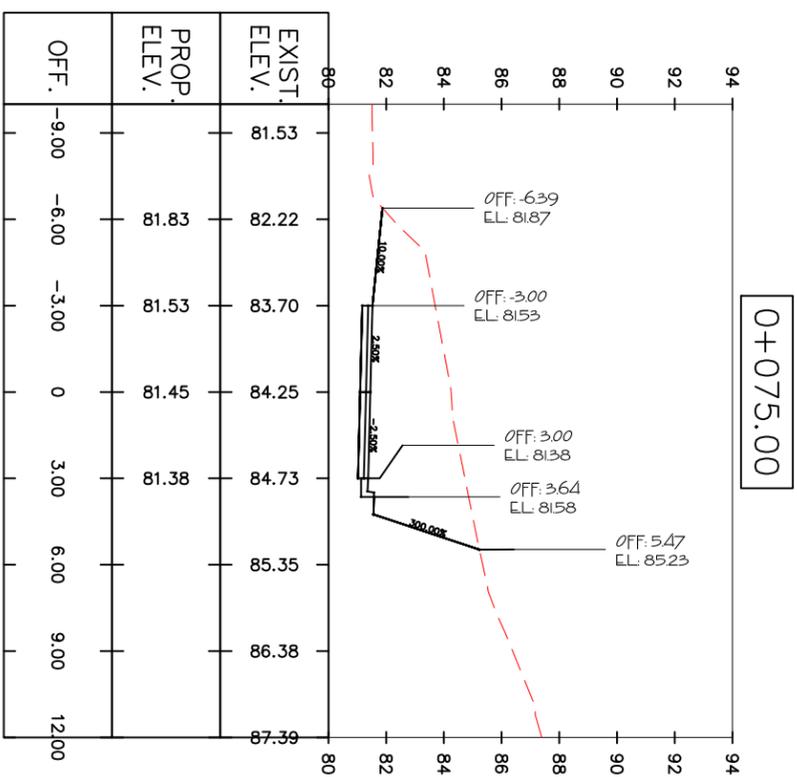
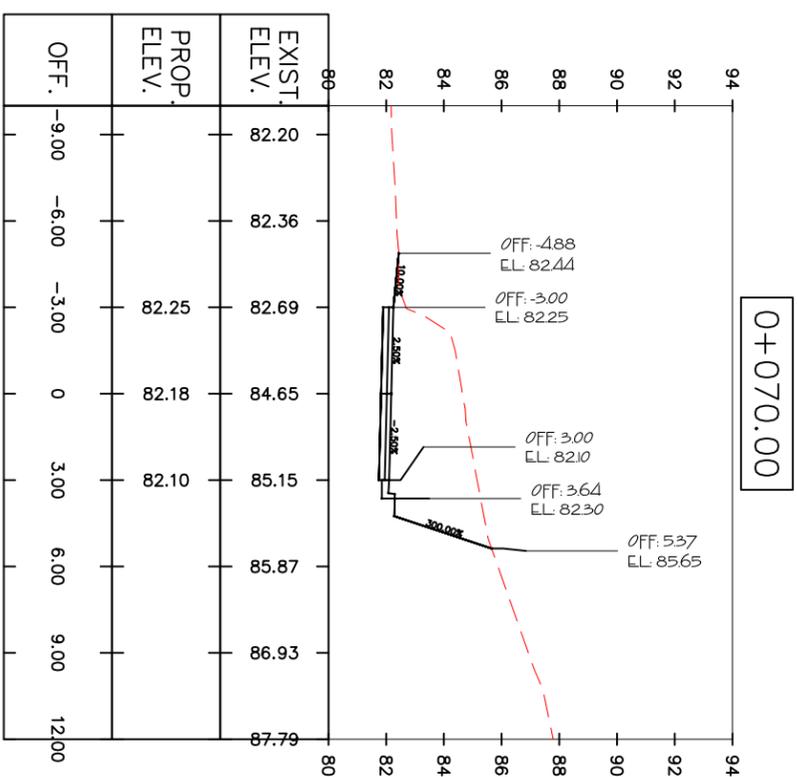
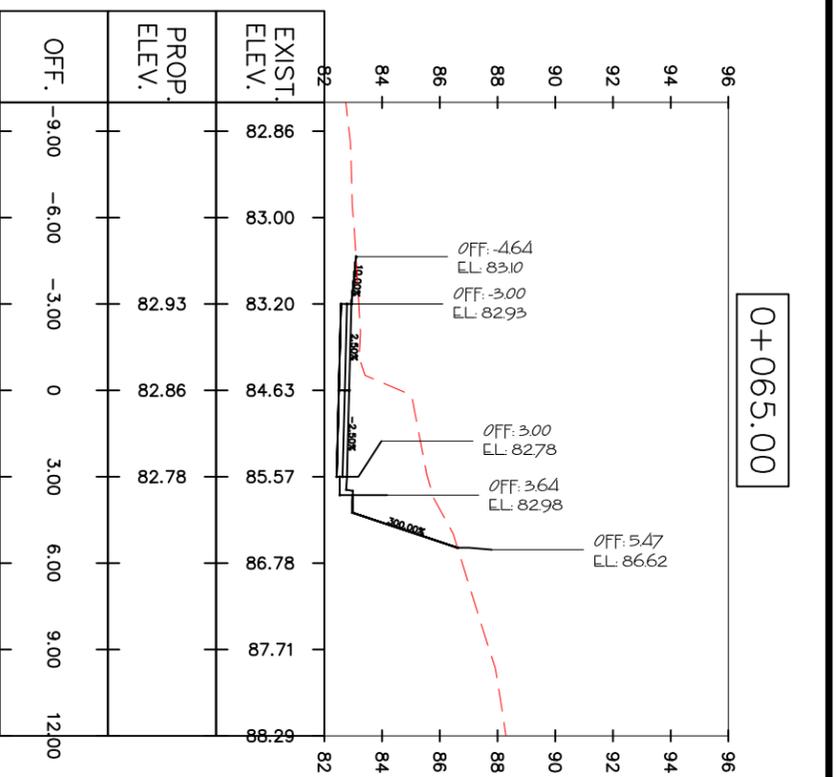
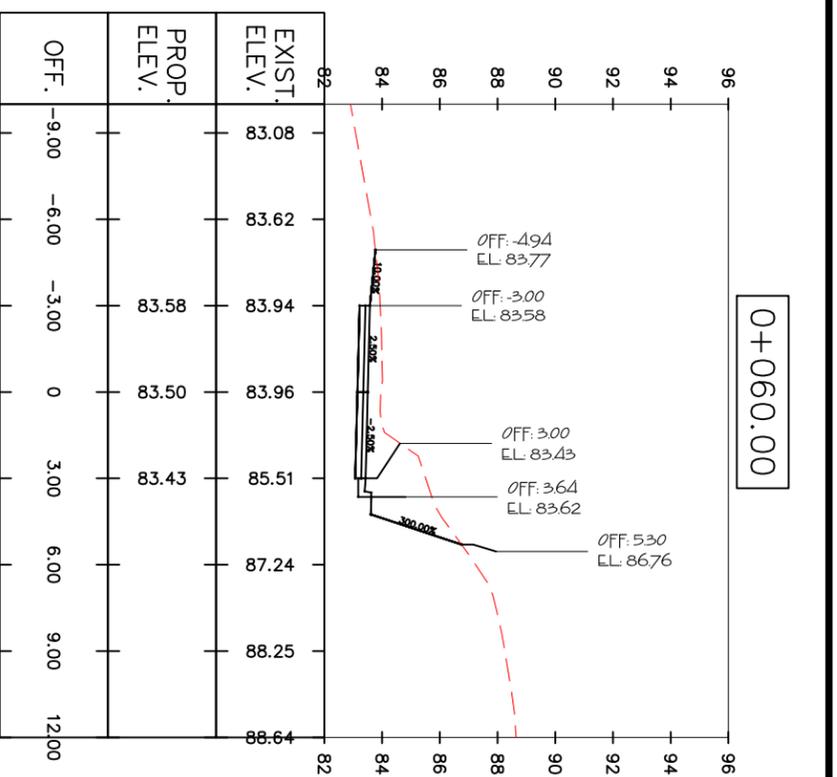
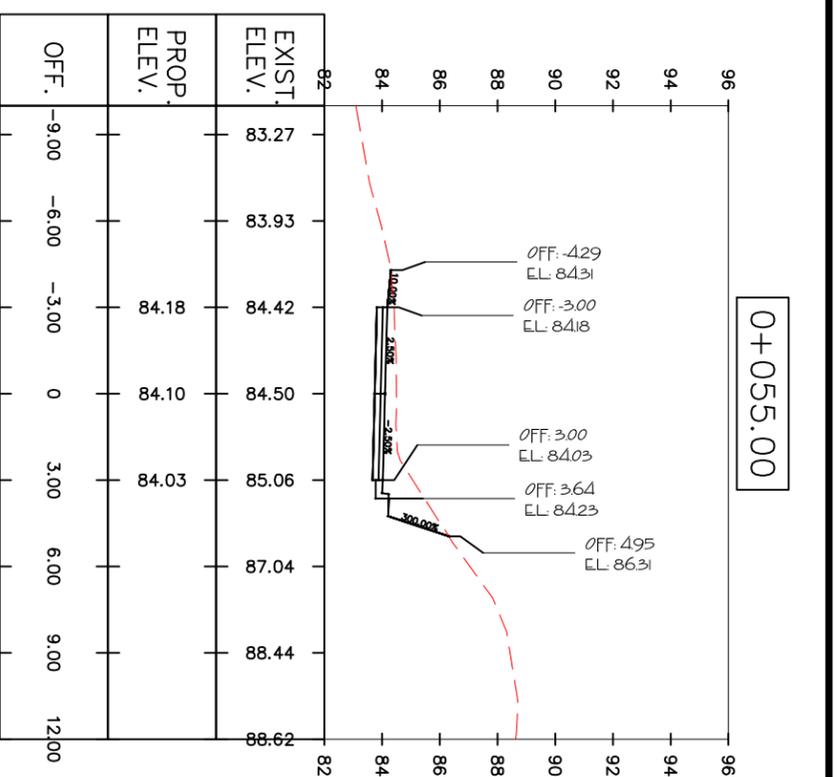
1. Drawings are not to be scaled
2. This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

PROJECT
REHABILITATION
OF A SECTION OF
CAVALLA HILL TO
BARZEY'S BY-PASS
ROAD

DRAWING
ROAD ALIGNMENT
CROSS SECTIONS

PROJECT NO.: RCHBPR-2018
DATE: 12 July 2019
SCALE: 1 : 250
DRAWN BY: John P
CHECKED BY:

DRAWING NO.: C200



Engineering Solutions
P.O. Box 474
Banks
Montserrat
West Indies
T: (664) 491-7826
F: (664) 491-7827
E: en_sol@hotmail.com

Revisions

No	Date	Description

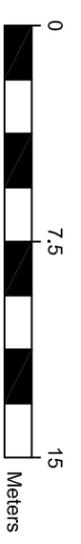
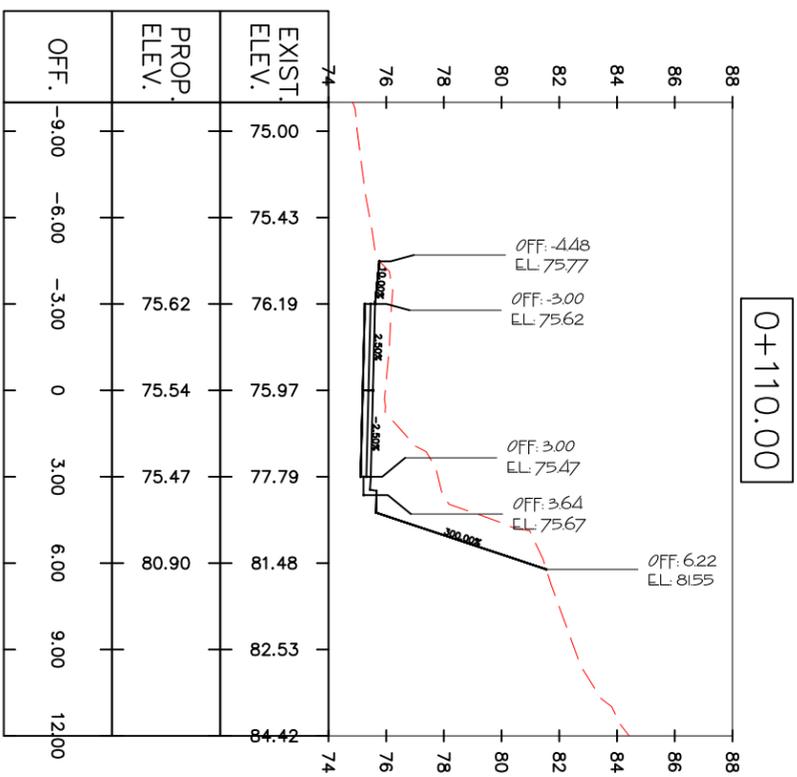
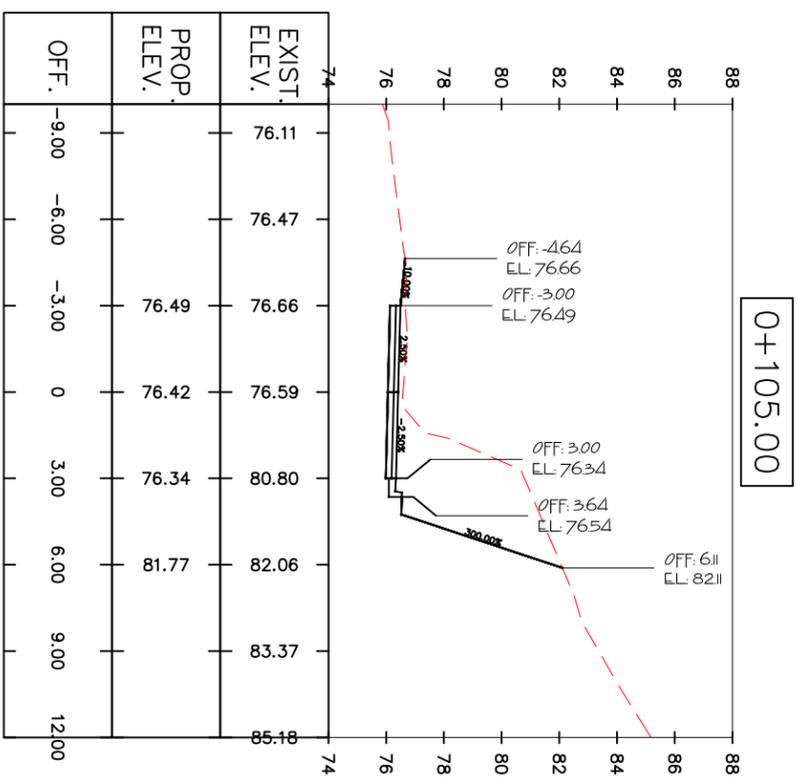
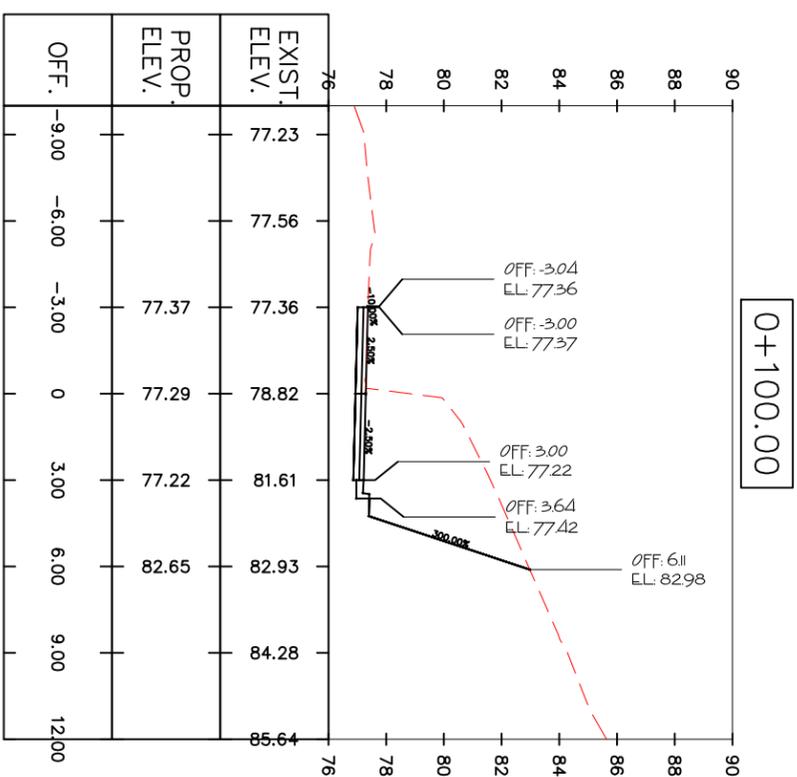
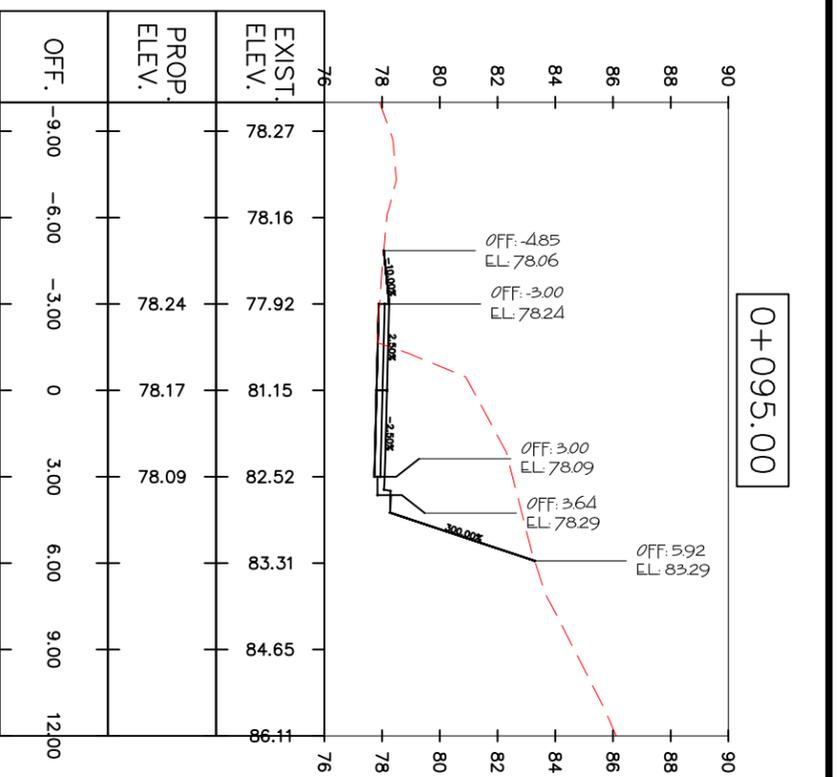
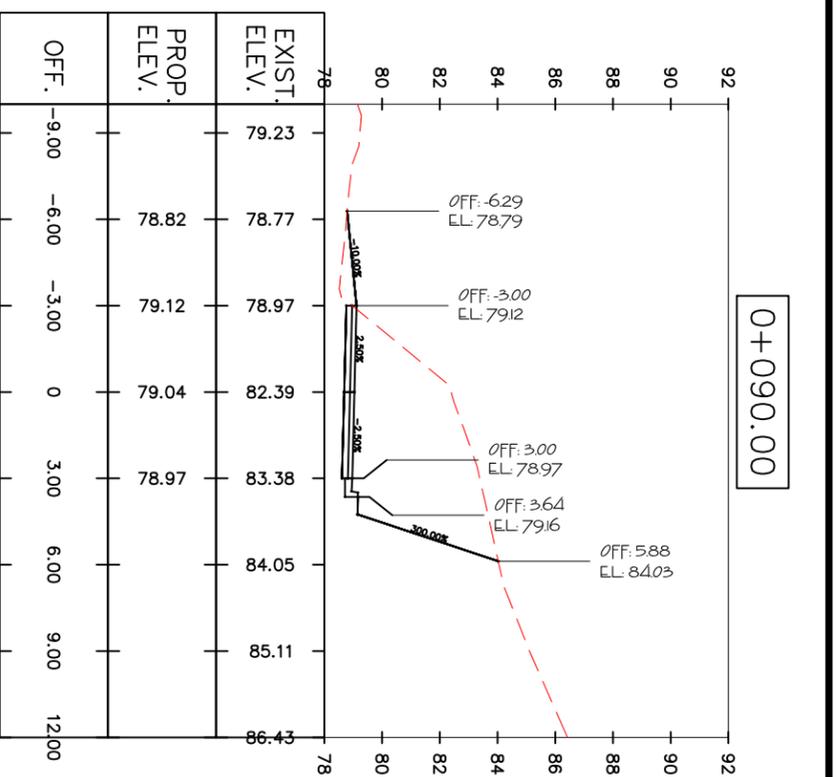
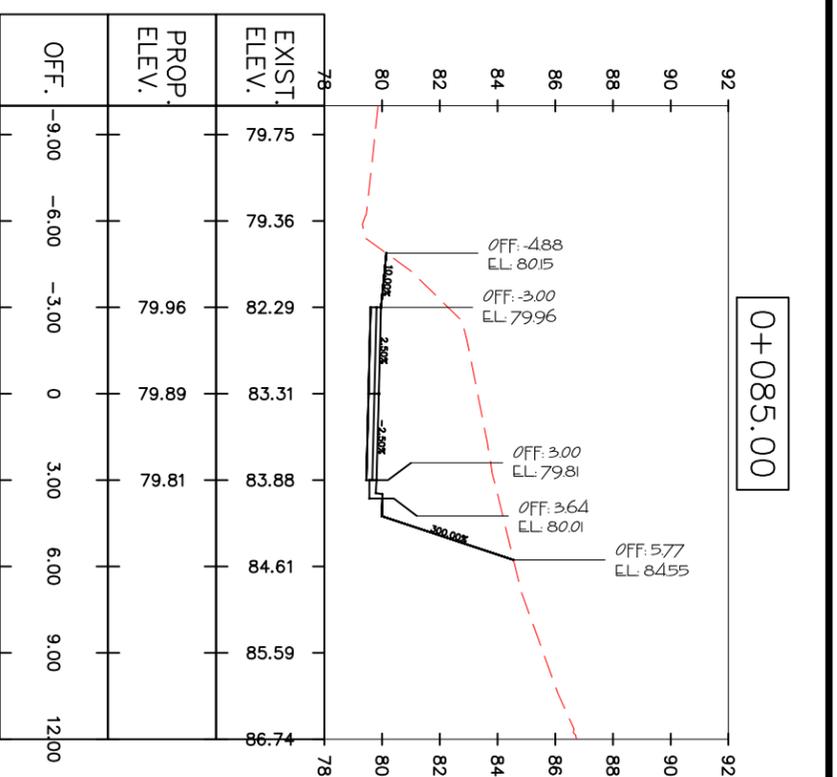
General Notes

1. Drawings are not to be scaled
2. This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

No	Date	Description

PROJECT
REHABILITATION
OF A SECTION OF
CAVALLA HILL TO
BARZEY'S BY-PASS
ROAD
DRAWING
ROAD ALIGNMENT
CROSS SECTIONS

PROJECT NO:
RCHBPR-2018
DATE
12 July 2019
SCALE
1 : 250
DRAWN BY:
John P
CHECKED BY:
C201
DRAWING NO.



Revisions

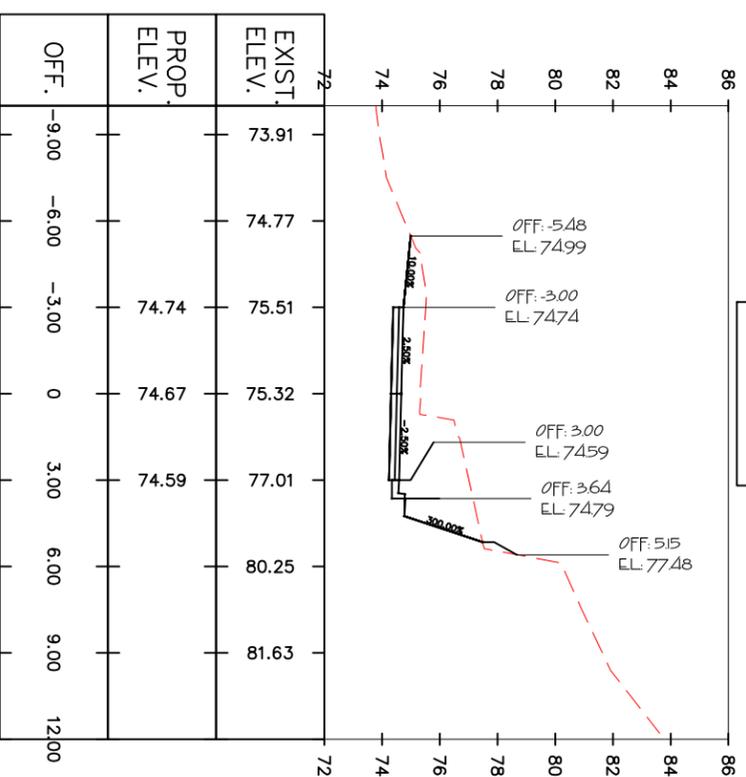
Δ	Date	Description

- General Notes
1. Drawings are not to be scaled
 2. This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

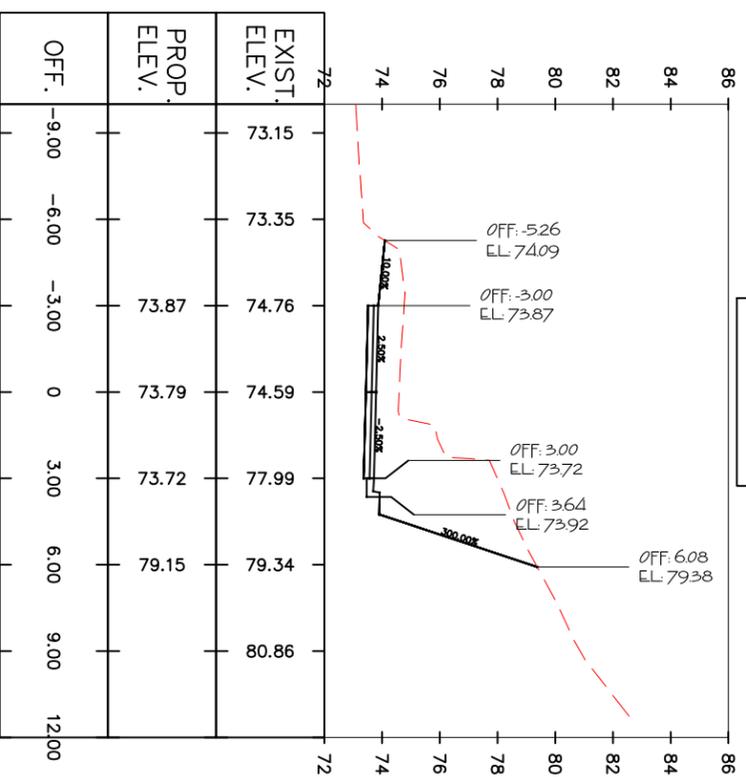
PROJECT
REHABILITATION
OF A SECTION OF
CAVALLA HILL TO
BARZEY'S BY-PASS
ROAD
DRAWING
ROAD ALIGNMENT
CROSS SECTIONS

PROJECT NO.: RCHBPR-2018
DATE: 12 July 2019
SCALE: 1 : 250
DRAWN BY: John P.
CHECKED BY: **C202**
DRAWING NO.

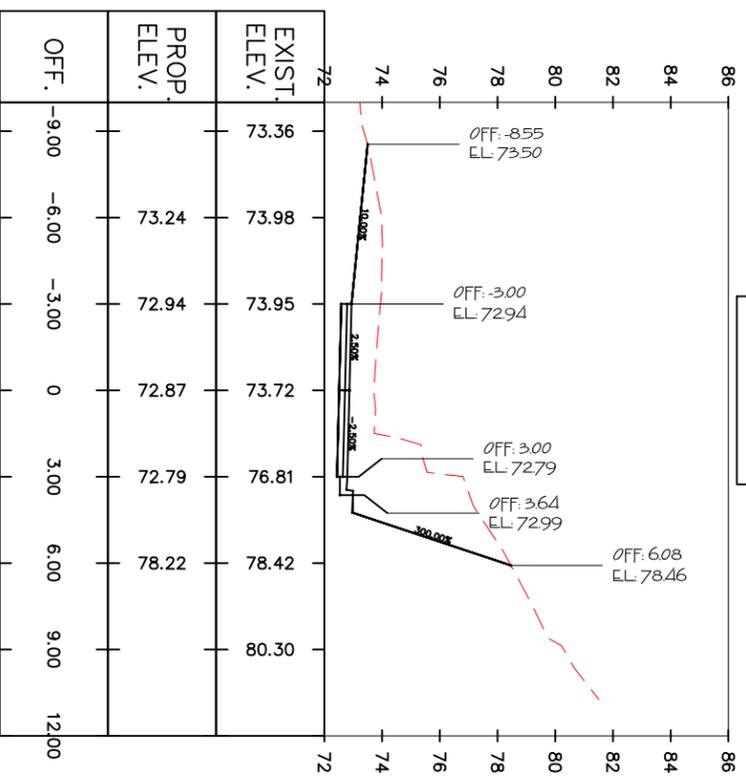
0+115.00



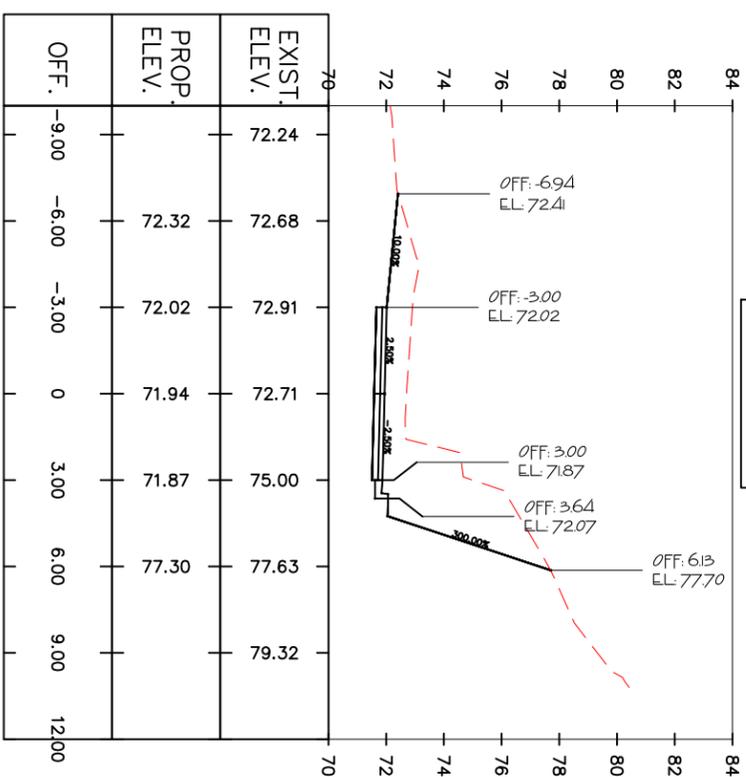
0+120.00



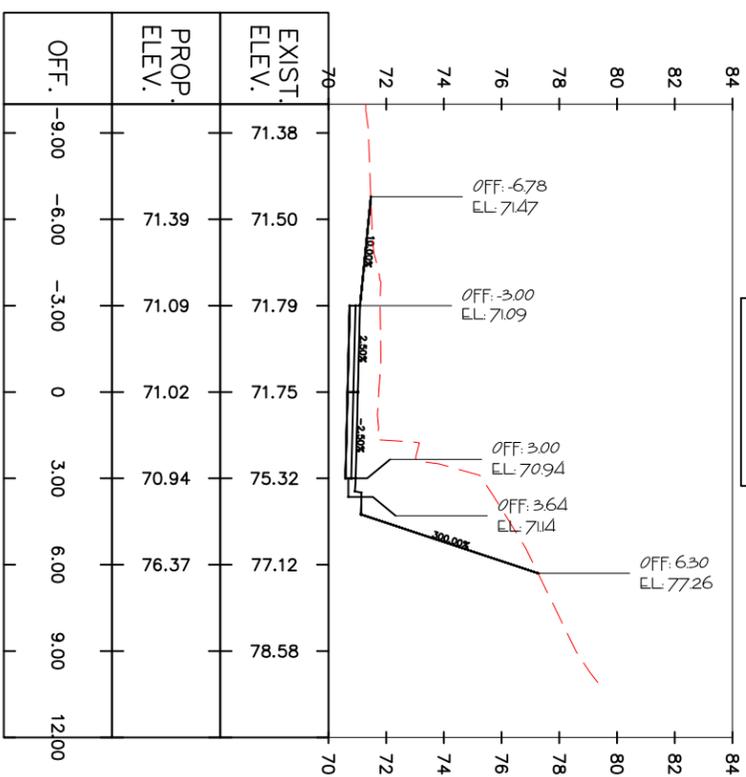
0+125.00



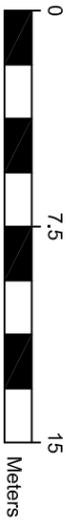
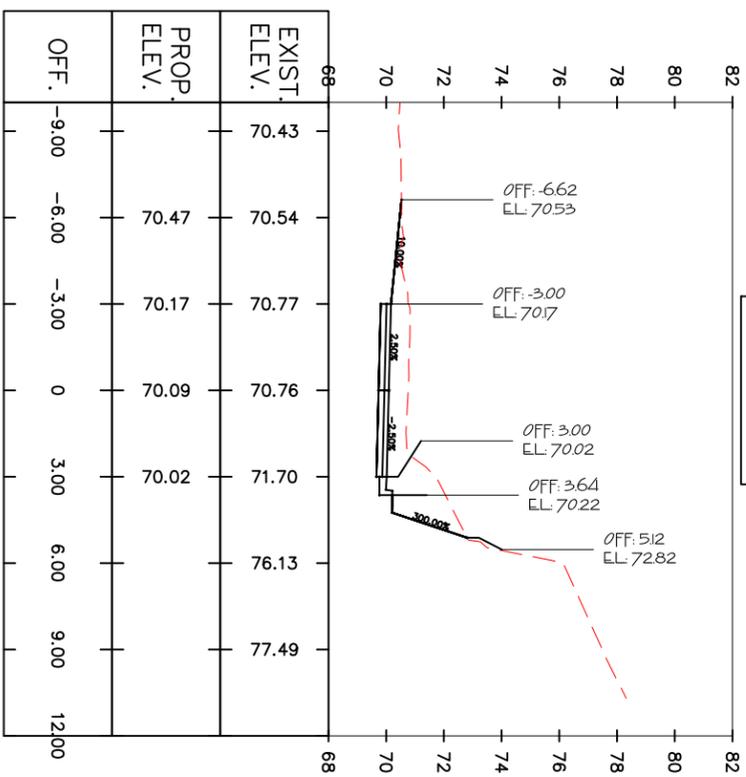
0+130.00



0+135.00



0+140.00



Engineering Solutions
 P.O. Box 474
 Banks
 Montserrat
 West Indies
 T: (664) 491-7826
 F: (664) 491-7827
 E: en_sol@hotmail.com

Revisions

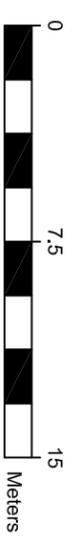
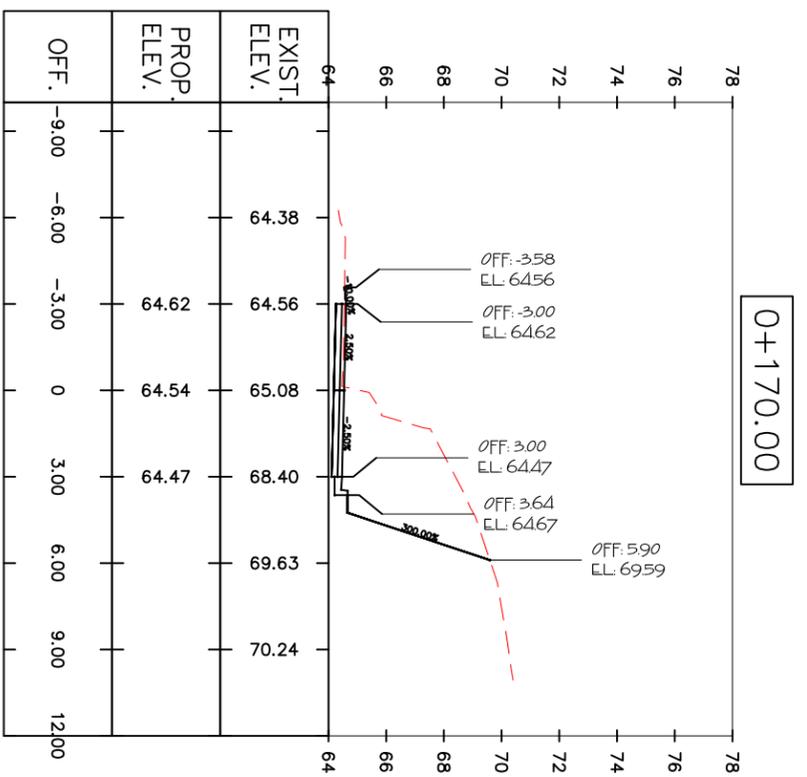
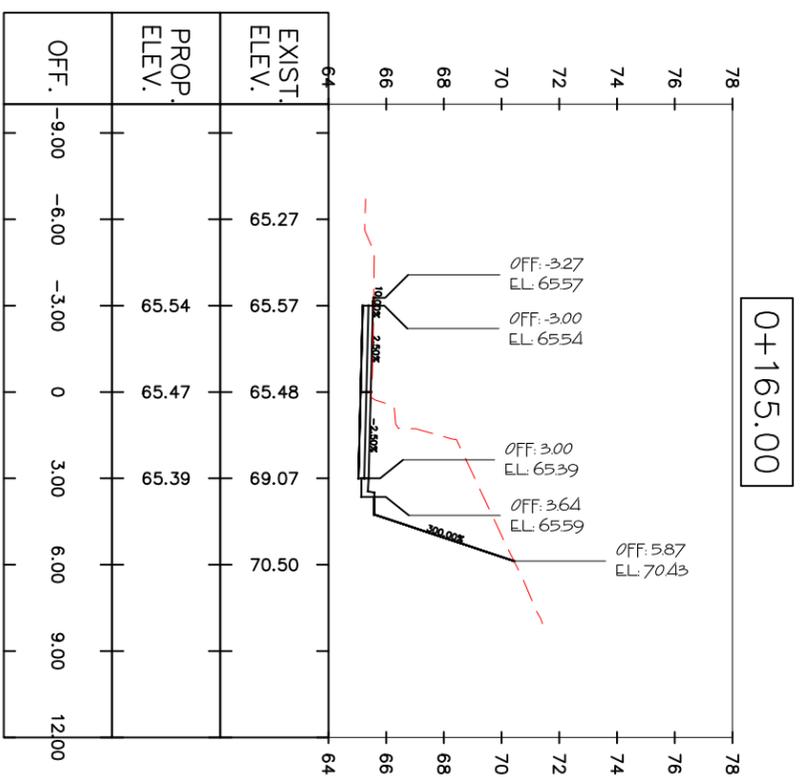
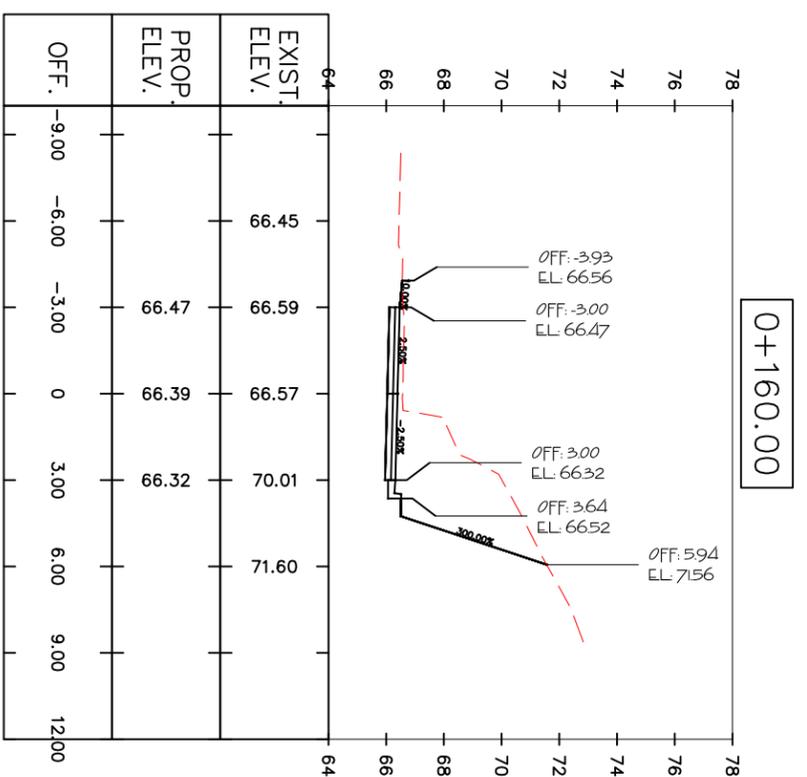
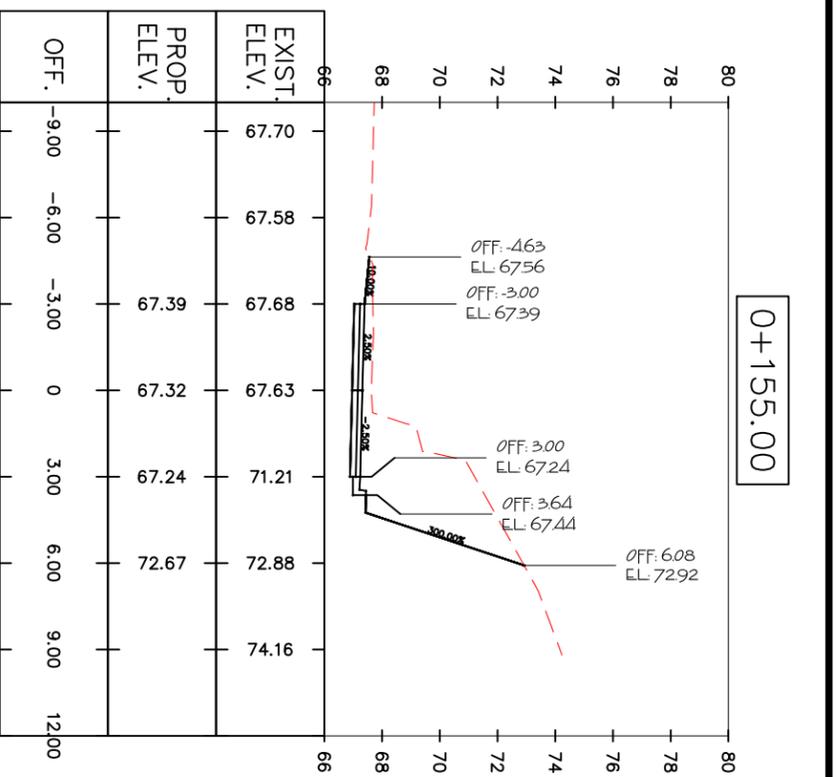
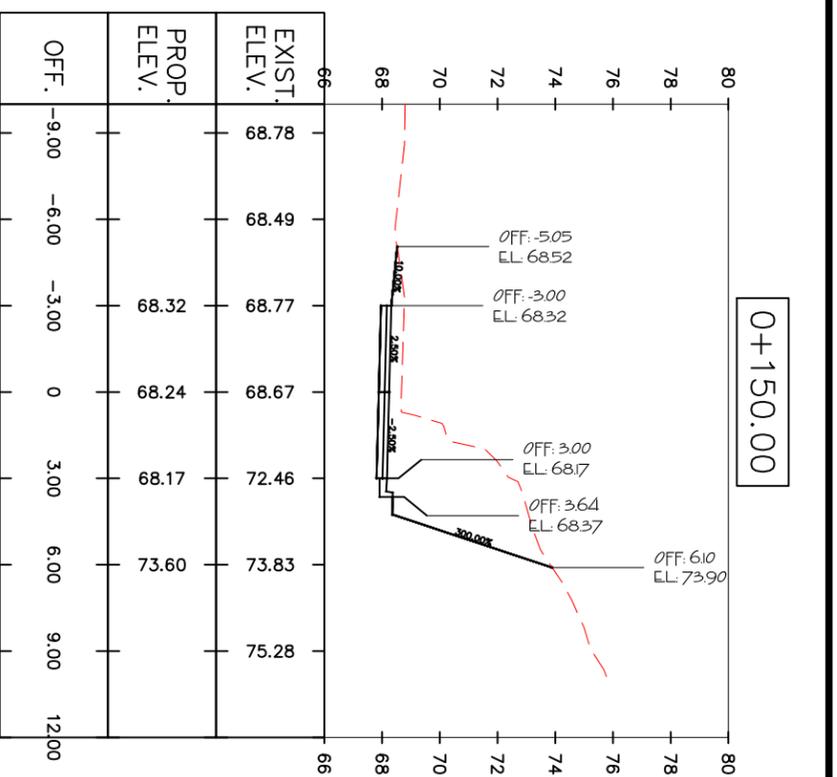
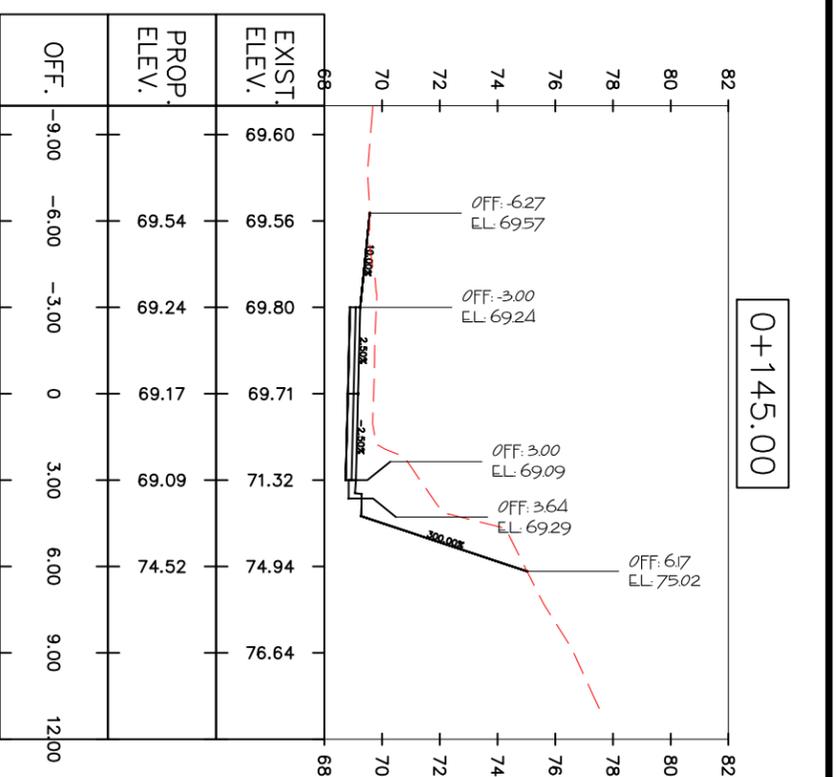
No	Date	Description

General Notes

No	Date	Description
1		Drawings are not to be scaled
2		This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

PROJECT
 REHABILITATION
 OF A SECTION OF
 CAVALLA HILL TO
 BARZEY'S BY-PASS
 ROAD
 DRAWING
 ROAD ALIGNMENT
 CROSS SECTIONS

PROJECT NO: RCHBPR-2018
 DATE: 12 July 2019
 SCALE: 1:250
 DRAWN BY: John P
 CHECKED BY: **C203**
 DRAWING NO.



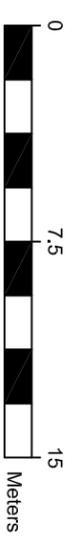
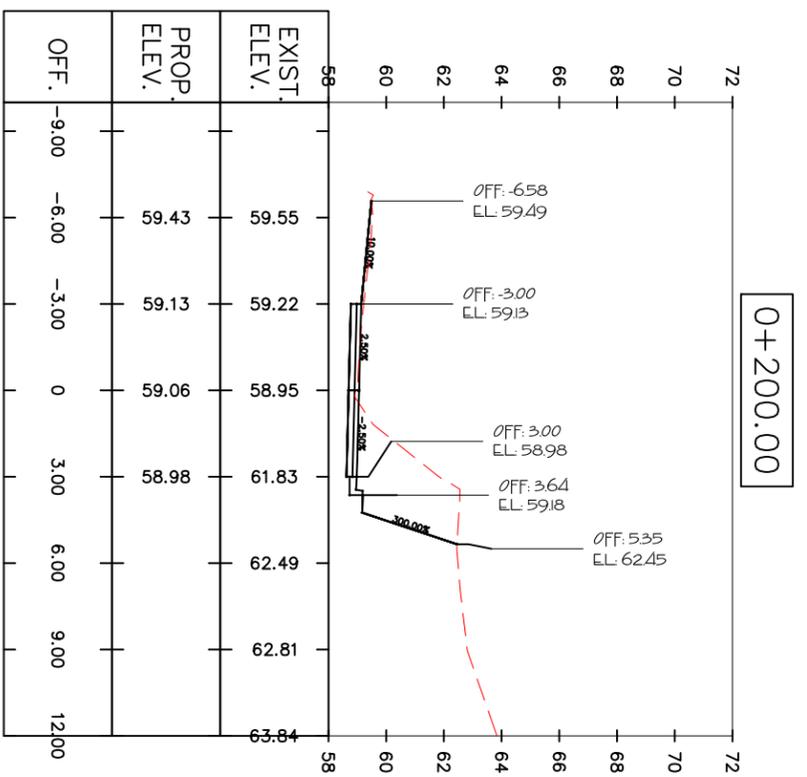
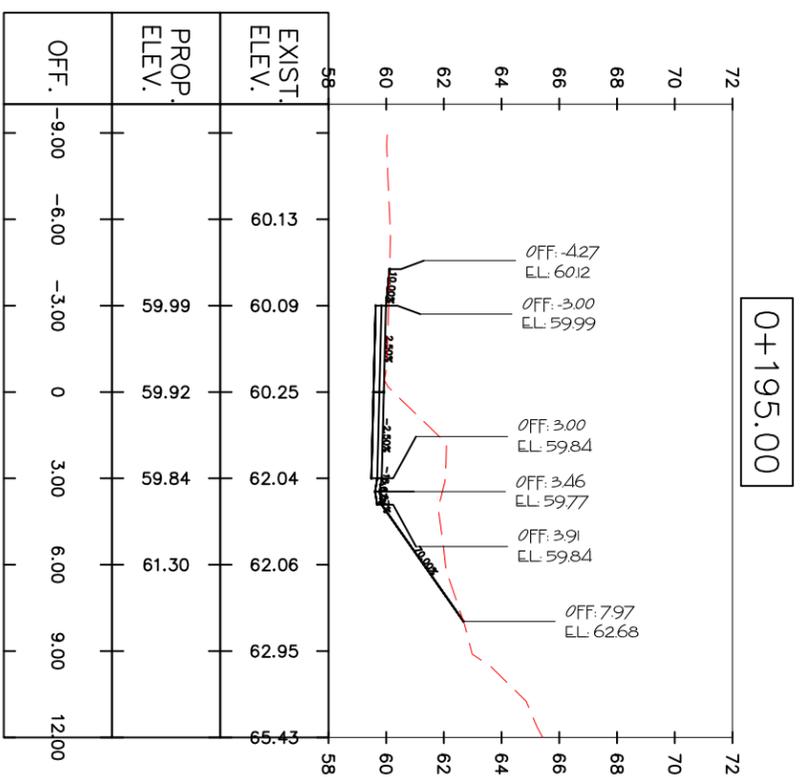
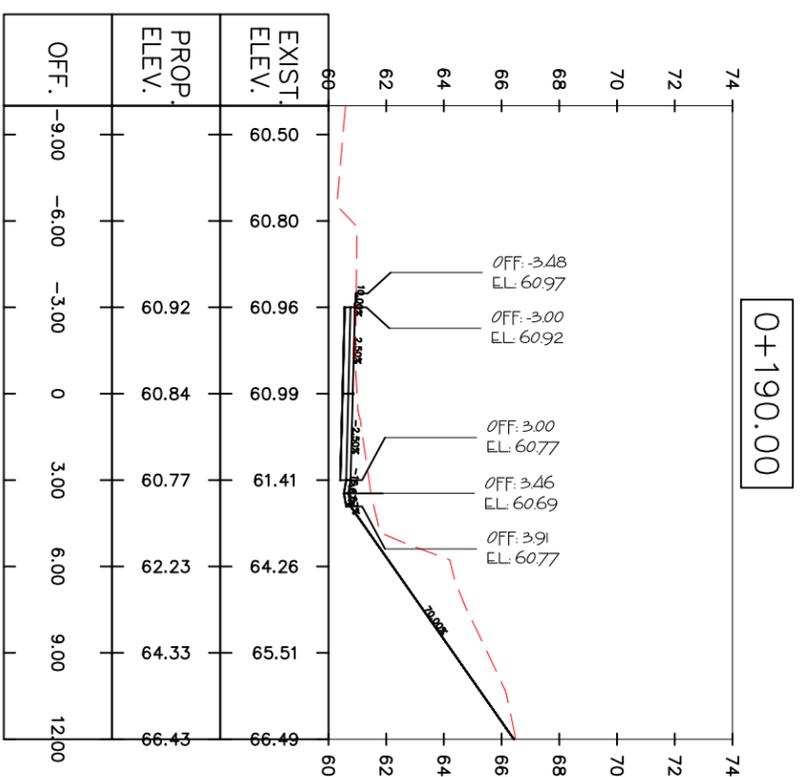
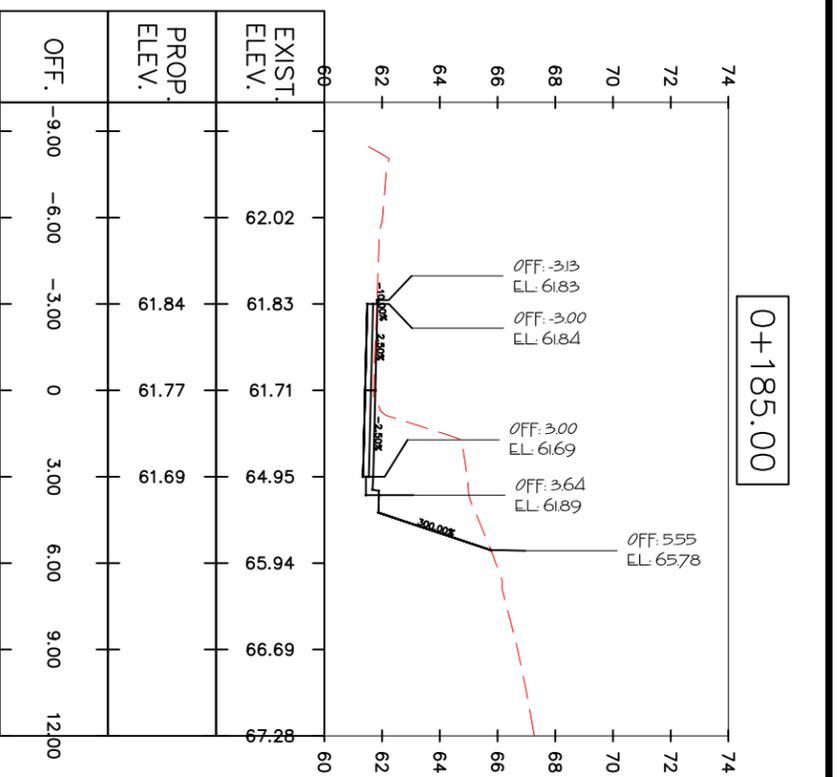
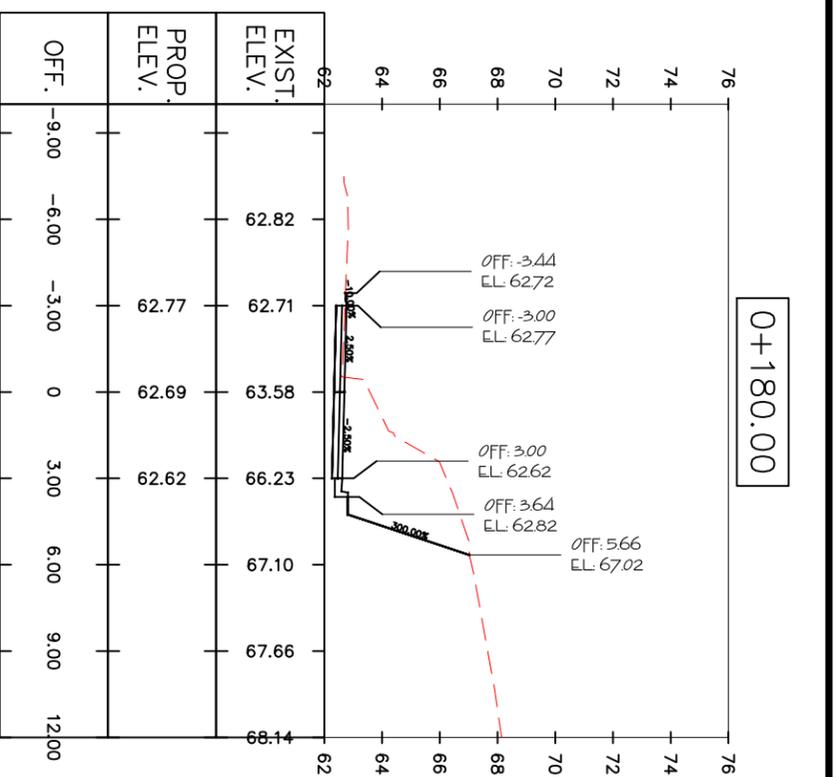
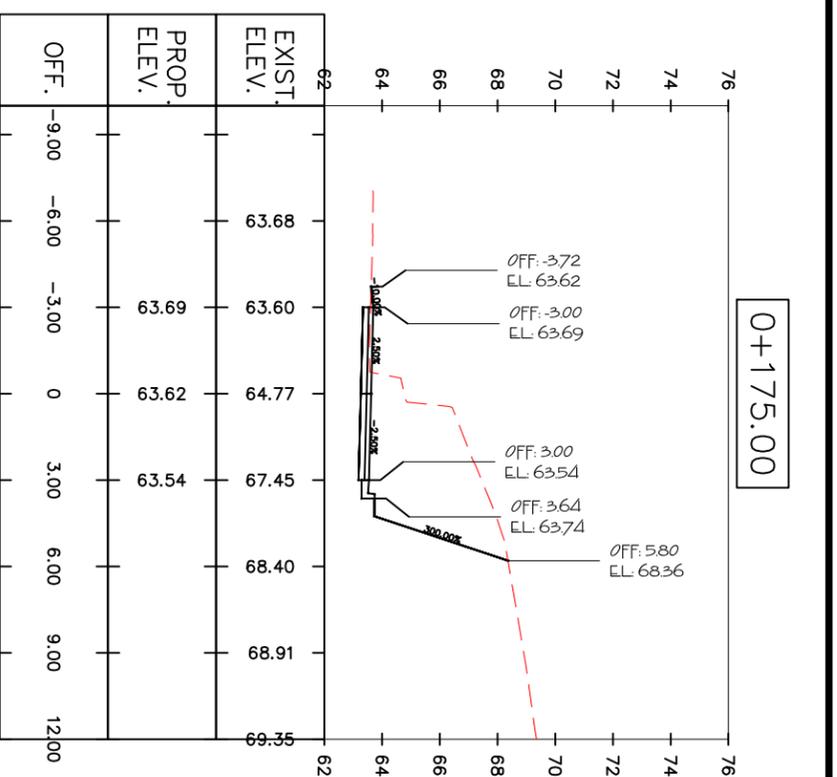
Revisions

A	Date	Description

- General Notes
1. Drawings are not to be scaled
 2. This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

PROJECT
 REHABILITATION
 OF A SECTION OF
 CAVALLA HILL TO
 BARZEY'S BY-PASS
 ROAD
 DRAWING
 ROAD ALIGNMENT
 CROSS SECTIONS

PROJECT NO: RCHBPR-2018
 DATE: 12 July 2019
 SCALE: 1:250
 DRAWN BY: John P
 CHECKED BY: **C204**



Engineering Solutions
 P.O. Box 474
 Banks
 Montserrat
 West Indies
 T: (664) 491-7826
 F: (664) 491-7827
 E: en_sol@hotmail.com

Revisions

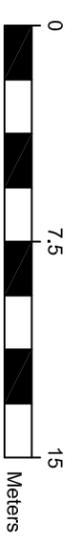
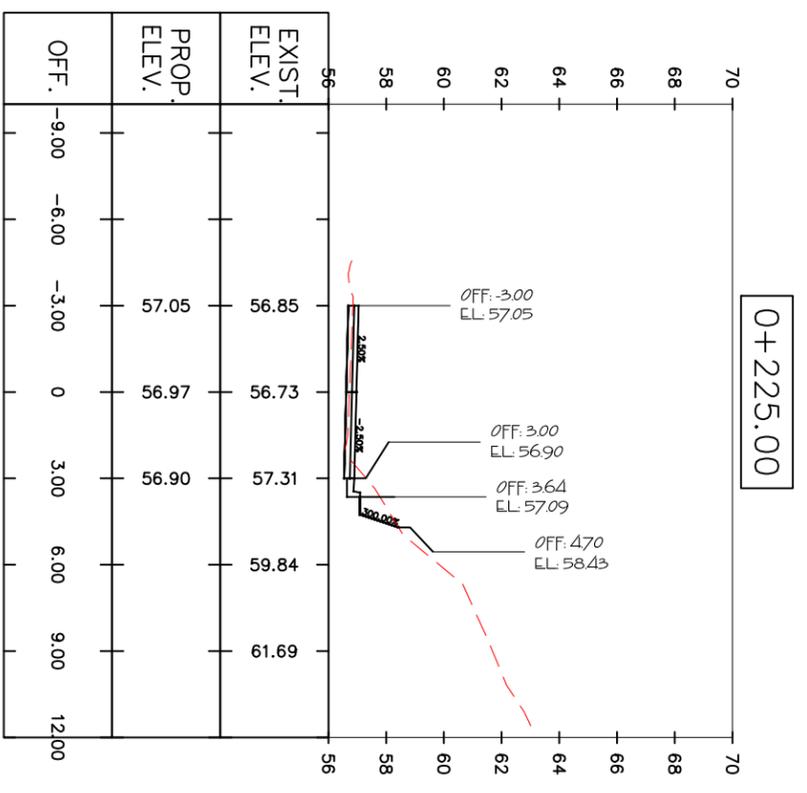
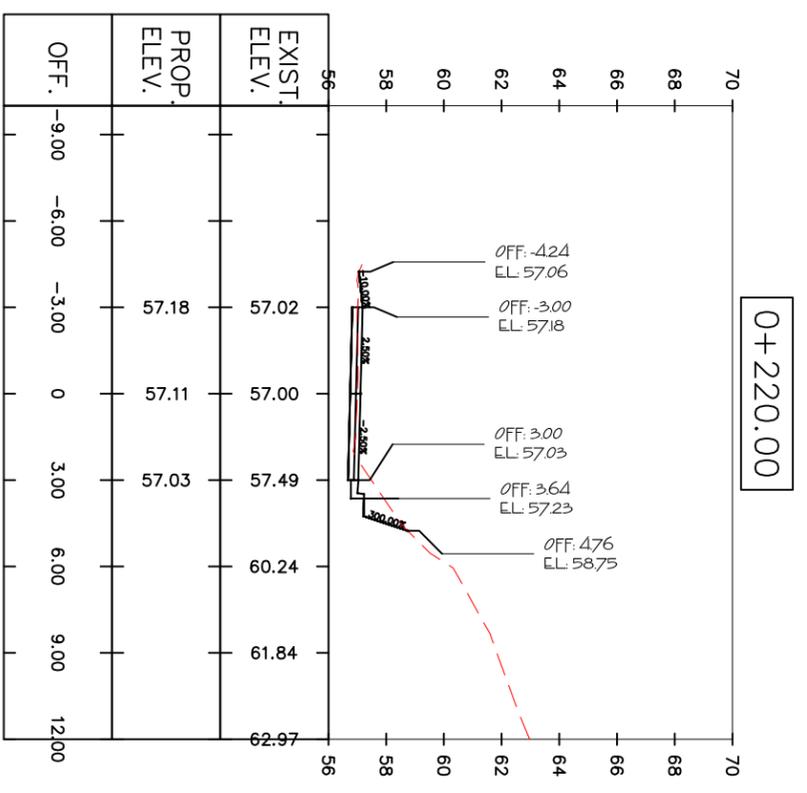
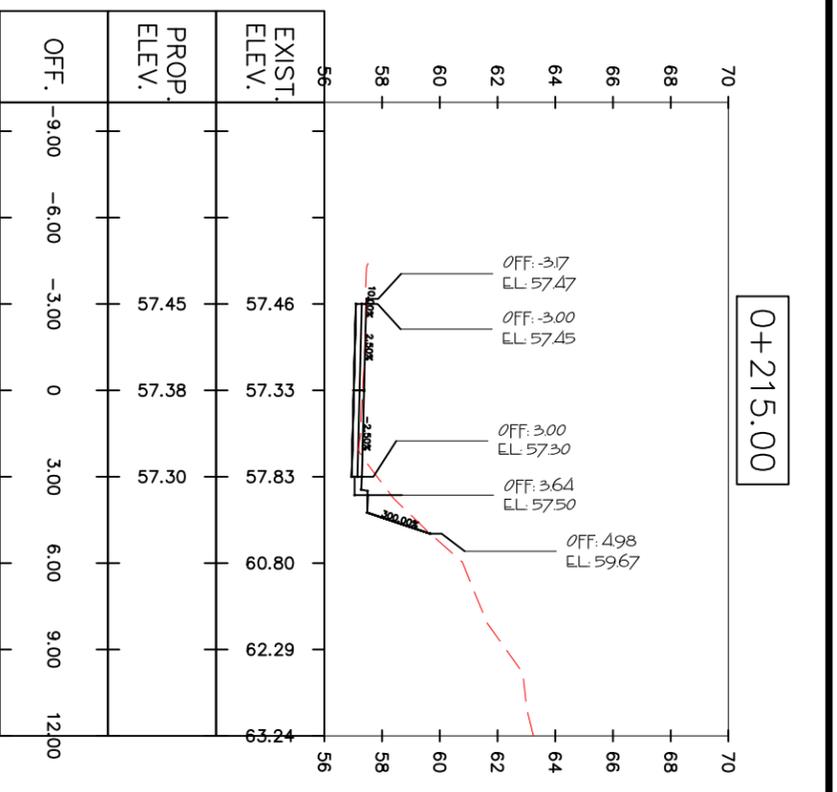
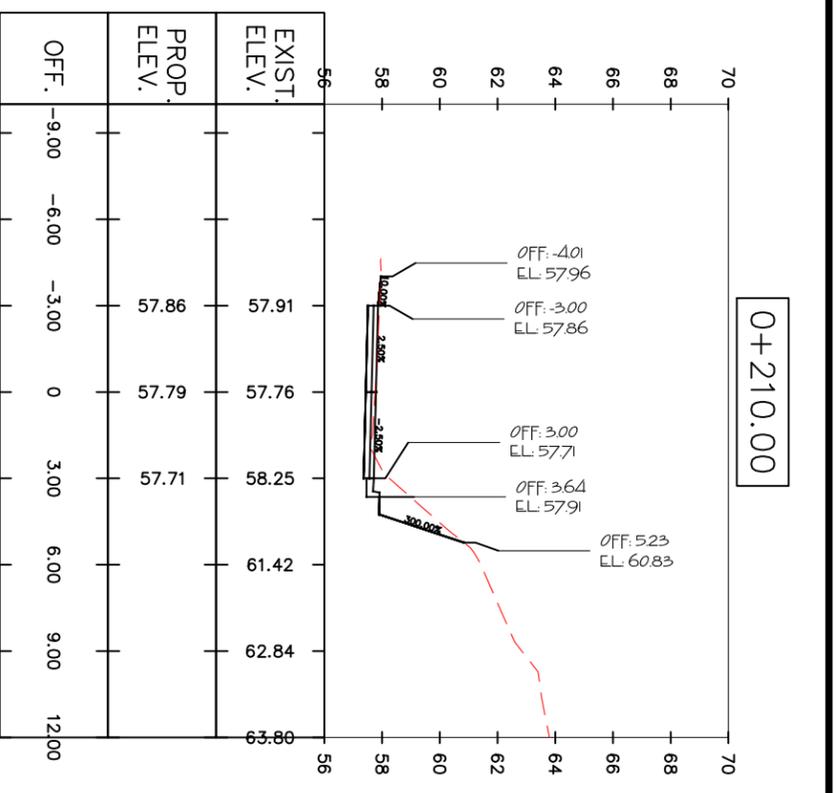
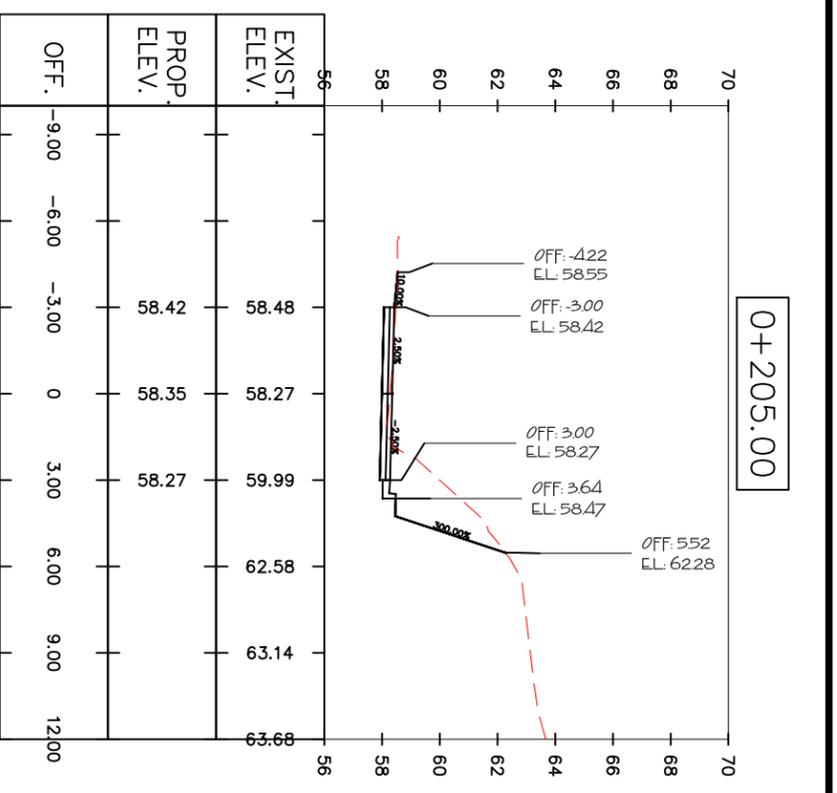
No.	Date	Description

General Notes

No.	Date	Description
1.		Drawings are not to be scaled
2.		This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

PROJECT
 REHABILITATION
 OF A SECTION OF
 CAVALLA HILL TO
 BARZEY'S BY-PASS
 ROAD
 DRAWING
 ROAD ALIGNMENT
 CROSS SECTIONS

PROJECT NO.:
 RCHBPR-2018
 DATE:
 12 July 2019
 SCALE:
 1 : 250
 DRAWN BY:
 John P
 CHECKED BY:
 C205
 DRAWING NO.



Revisions

Δ	Rev/No/By	Date	Description

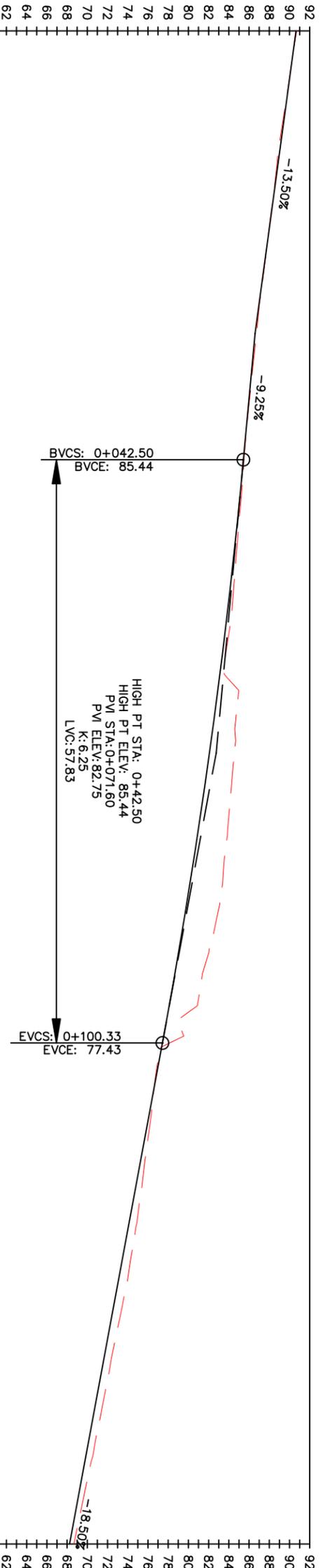
General Notes
 1. Drawings are not to be scaled
 2. This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

PROJECT
 REHABILITATION
 OF A SECTION OF
 CAVALLA HILL TO
 BARZEY'S BY-PASS
 ROAD
 DRAWING
 ROAD ALIGNMENT
 CROSS SECTIONS

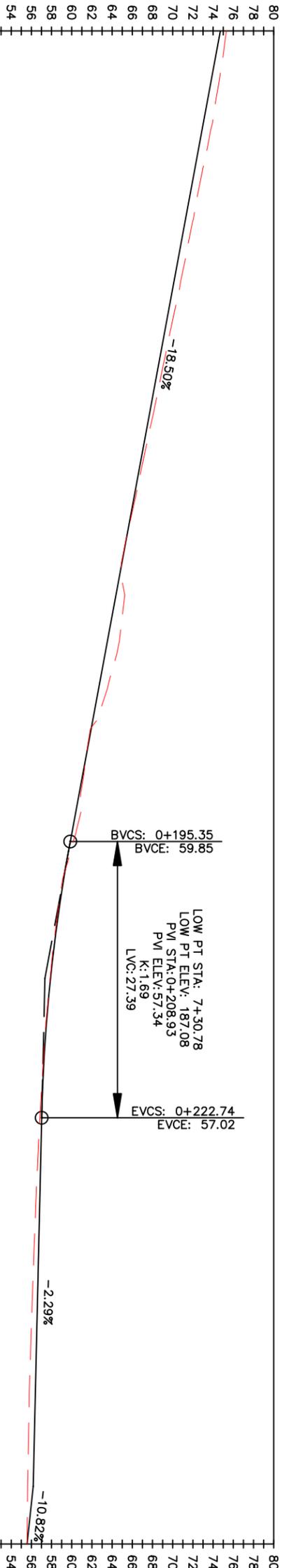
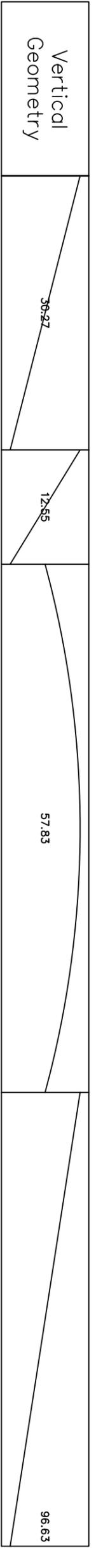
PROJECT NO: RCHBPR-2018
 DATE: 12 July 2019
 SCALE: 1:250
 DRAWN BY: John P
 CHECKED BY: **C206**
 DRAWING NO.



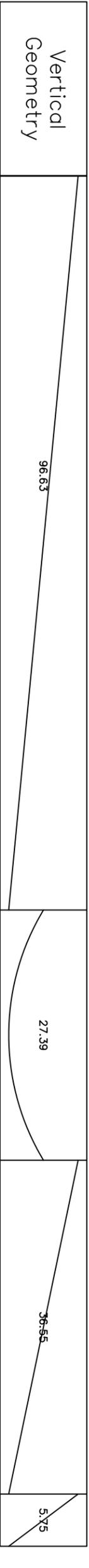
Engineering Solutions
 P.O. Box 474
 Banks
 Montserrat
 West Indies
 T: (664) 491-7826
 F: (664) 491-7827
 E: en_sol@hotmail.com



Station	Elevation
0+000	90.71
0+005	90.645
0+010	89.94
0+015	89.970
0+020	89.18
0+025	89.295
0+030	88.56
0+035	88.620
0+040	87.92
0+045	87.945
0+050	87.31
0+055	87.270
0+060	86.73
0+065	86.595
0+070	86.21
0+075	86.133
0+080	85.70
0+085	85.670
0+090	85.33
0+095	85.203
0+100	84.89
0+105	84.701
0+110	84.50
0+115	84.159
0+120	83.96
0+125	83.578
0+130	84.65
0+135	82.958
0+140	84.65
0+145	82.298
0+150	84.25
0+155	81.597
0+160	83.82
0+165	80.857
0+170	83.31
0+175	80.077
0+180	82.40
0+185	79.256
0+190	81.15
0+195	78.395
0+200	78.82
0+205	77.493
0+210	76.59
0+215	76.568
0+220	75.97
0+225	75.643
0+230	75.32
0+235	74.718
0+240	74.59
0+245	73.793
0+250	73.72
0+255	72.868
0+260	72.71
0+265	71.943
0+270	71.75
0+275	71.018
0+280	70.76
0+285	70.093
0+290	69.71
0+295	69.168
0+300	68.67
0+305	68.243



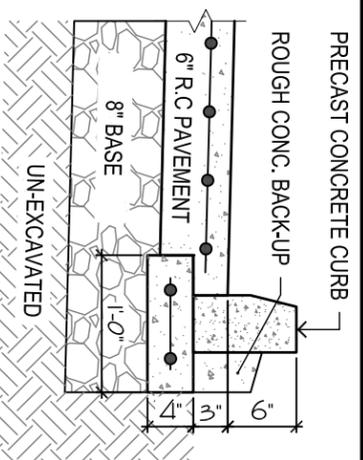
Station	Elevation
0+115	75.32
0+120	74.718
0+125	74.59
0+130	73.793
0+135	73.72
0+140	72.868
0+145	72.71
0+150	71.943
0+155	71.75
0+160	71.018
0+165	70.76
0+170	70.093
0+175	69.71
0+180	69.168
0+185	68.67
0+190	68.243
0+195	67.63
0+200	67.318
0+205	66.57
0+210	66.393
0+215	65.48
0+220	65.468
0+225	65.08
0+230	64.543
0+235	64.77
0+240	63.618
0+245	63.58
0+250	62.693
0+255	61.71
0+260	61.768
0+265	60.99
0+270	60.843
0+275	60.26
0+280	59.918
0+285	58.95
0+290	59.058
0+295	58.27
0+300	58.349
0+305	57.76
0+310	57.789
0+315	57.33
0+320	57.375
0+325	57.00
0+330	57.108
0+335	56.73
0+340	56.972
0+345	56.50
0+350	56.857
0+355	56.30
0+360	56.743
0+365	56.12
0+370	56.628
0+375	55.95
0+380	56.513
0+385	55.79
0+390	56.399
0+395	55.70
0+400	56.284
0+405	55.62
0+410	56.109
0+415	55.57
0+420	55.568



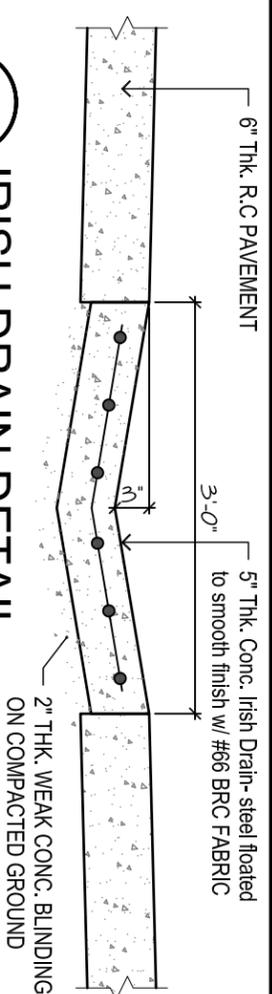
Station	Elevation
0+115	75.32
0+120	74.718
0+125	74.59
0+130	73.793
0+135	73.72
0+140	72.868
0+145	72.71
0+150	71.943
0+155	71.75
0+160	71.018
0+165	70.76
0+170	70.093
0+175	69.71
0+180	69.168
0+185	68.67
0+190	68.243
0+195	67.63
0+200	67.318
0+205	66.57
0+210	66.393
0+215	65.48
0+220	65.468
0+225	65.08
0+230	64.543
0+235	64.77
0+240	63.618
0+245	63.58
0+250	62.693
0+255	61.71
0+260	61.768
0+265	60.99
0+270	60.843
0+275	60.26
0+280	59.918
0+285	58.95
0+290	59.058
0+295	58.27
0+300	58.349
0+305	57.76
0+310	57.789
0+315	57.33
0+320	57.375
0+325	57.00
0+330	57.108
0+335	56.73
0+340	56.972
0+345	56.50
0+350	56.857
0+355	56.30
0+360	56.743
0+365	56.12
0+370	56.628
0+375	55.95
0+380	56.513
0+385	55.79
0+390	56.399
0+395	55.70
0+400	56.284
0+405	55.62
0+410	56.109
0+415	55.57
0+420	55.568

1. Drawings are not to be scaled
 2. This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

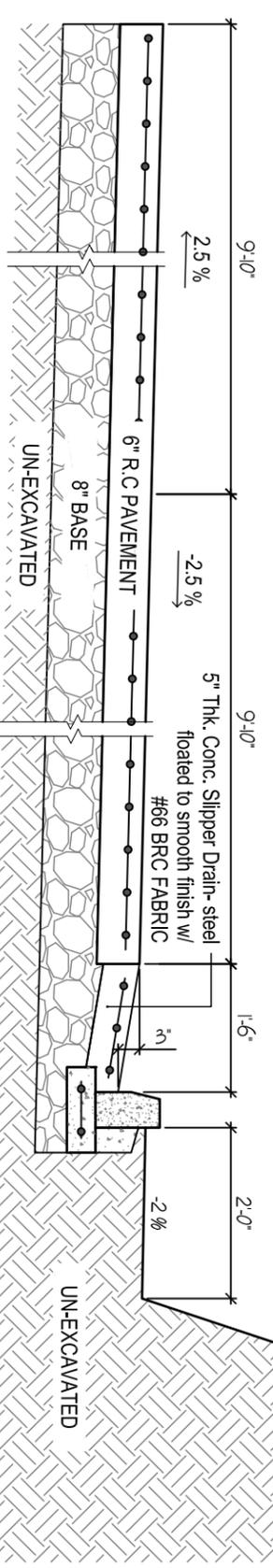
PROJECT
 REHABILITATION OF A SECTION OF CAVALLA HILL TO BARZEY'S BY-PASS ROAD
DRAWING
 VERTICAL ALIGNMENT
PROJECT NO.: RCHBPR-2018
DATE: 12 July 2019
SCALE: 1 : 500
DRAWN BY: John P
CHECKED BY:
DRAWING NO.: C300



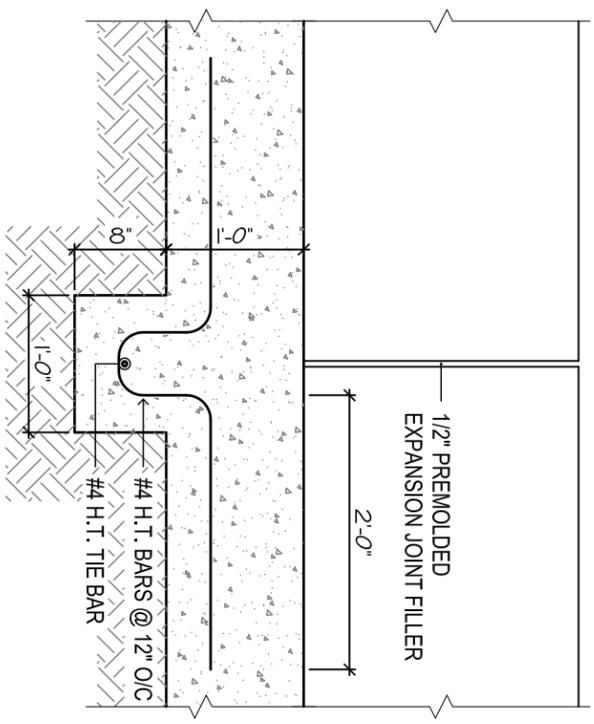
2 PAVEMENT @ CURB
3/4" = 1'-0"



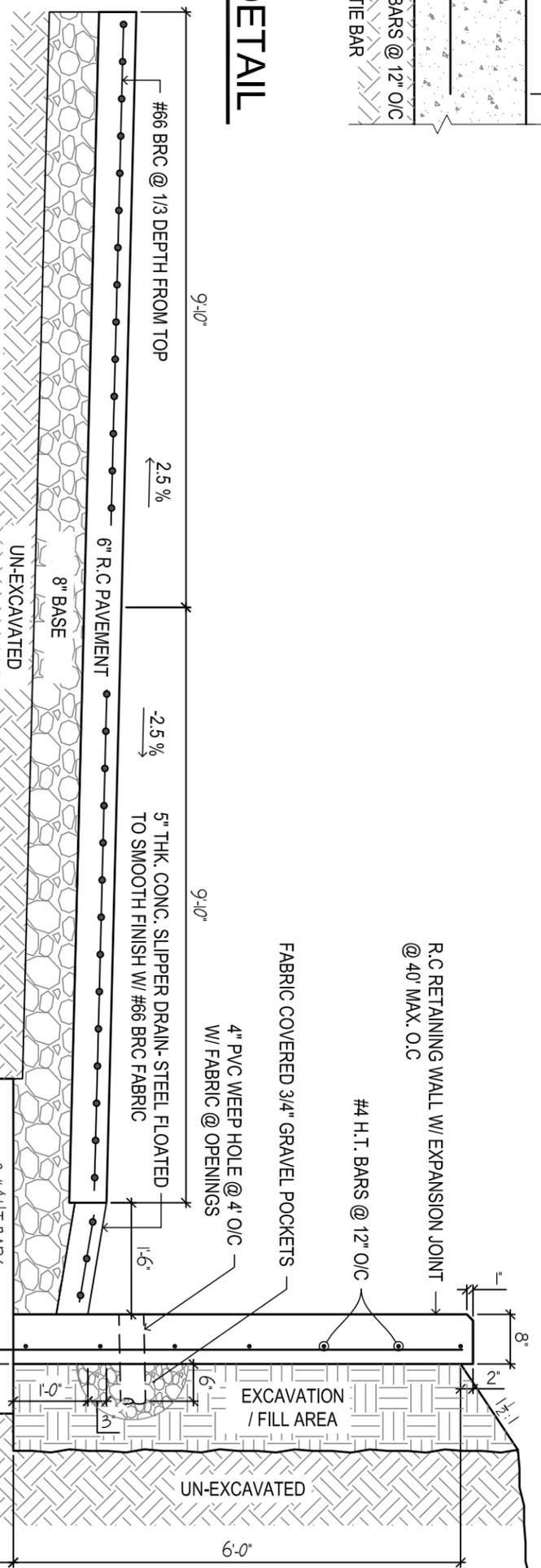
4 IRISH DRAIN DETAIL
3/4" = 1'-0"



3 TYPICAL SECTION AT STABLE EMBANKMENT
1/2" = 1'-0"



1 FOUNDATION KEY DETAIL
3/4" = 1'-0"



5 TYPICAL SECTION AT UNSTABLE EMBANKMENT
1/2" = 1'-0"

Engineering Solutions
P.O. Box 474
Banks
Montserrat
West Indies
T: (664) 491-7826
F: (664) 491-7827
E: en_sol@hotmail.com

Revisions

No.	Date	Description

General Notes

- Drawings are not to be scaled
- This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

No.	Date	Description

PROJECT
REHABILITATION
OF A SECTION OF
CAVALLA HILL TO
BARZEY'S BY-PASS
ROAD

DRAWING
PAVEMENT CROSS
SECTION DETAILS

PROJECT NO.:
RCHBPR-2018

DATE:
12 July 2019

SCALE:
AS SHOWN

DRAWN BY:
John P

CHECKED BY:

DRAWING NO.
G500

Supplementary Information

Corridor Section Points Report

Client:
Government of Montserrat

Prepared by:
John P
Engineering Solutions Inc.
P.O. Box 474

Station Range: Start: 0+025.00, End: 0+225.00

CHAINAGE 0+025.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,158.0198	14,700.7781	87.3789	-3.339m	Daylight
2	8,157.8958	14,700.4628	87.3450	-3.000m	Hinge_Cut
3	8,155.7000	14,694.8790	87.1950	3.000m	ETW
4	8,155.5353	14,694.4602	87.1680	3.450m	Flowline_Gutter
5	8,155.4652	14,694.2818	87.3930	3.642m	Back_Curb
6	8,155.2421	14,693.7145	87.3808	4.251m	Hinge_Cut
7	8,155.1800	14,693.5565	87.8900	4.421m	Daylight

CHAINAGE 0+030.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,162.6016	14,698.7956	86.6870	-3.170m	Daylight
2	8,162.5399	14,698.6371	86.6700	-3.000m	Hinge_Cut
3	8,160.3627	14,693.0461	86.5200	3.000m	ETW
4	8,160.1994	14,692.6268	86.4930	3.450m	Flowline_Gutter
5	8,160.1298	14,692.4481	86.7180	3.642m	Back_Curb
6	8,159.9086	14,691.8801	86.7058	4.251m	Hinge_Cut
7	8,159.8237	14,691.6621	87.4076	4.485m	Daylight

CHAINAGE 0+035.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,167.1043	14,696.9861	86.2075	-3.000m	ETW
2	8,165.2010	14,691.2960	86.0575	3.000m	ETW
3	8,165.0583	14,690.8692	86.0305	3.450m	Flowline_Gutter
4	8,164.9974	14,690.6874	86.2555	3.642m	Back_Curb
5	8,164.8041	14,690.1093	86.2433	4.251m	Hinge_Cut
6	8,164.7310	14,689.8908	86.9347	4.482m	Daylight

CHAINAGE 0+040.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,171.7435	14,695.5585	85.7450	-3.000m	ETW
2	8,170.1186	14,689.7828	85.5950	3.000m	ETW
3	8,169.9947	14,689.3426	85.5188	3.457m	ETW
4	8,169.8709	14,688.9025	85.5950	3.914m	ETW
5	8,169.5126	14,687.6288	86.5212	5.238m	Daylight

CHAINAGE 0+045.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,176.4466	14,694.3577	85.2626	-3.000m	ETW
2	8,175.1038	14,688.5099	85.1126	3.000m	ETW
3	8,175.0031	14,688.0713	85.0856	3.450m	Flowline_Gutter
4	8,174.9602	14,687.8845	85.3106	3.642m	Back_Curb
5	8,174.8237	14,687.2904	85.2984	4.251m	Hinge_Cut
6	8,174.7375	14,686.9148	86.4544	4.637m	Daylight

CHAINAGE 0+050.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,181.2553	14,693.6827	84.7705	-3.301m	Daylight
2	8,181.2023	14,693.3866	84.7405	-3.000m	Hinge_Cut
3	8,180.1449	14,687.4805	84.5905	3.000m	ETW
4	8,180.0655	14,687.0375	84.5635	3.450m	Flowline_Gutter
5	8,180.0318	14,686.8488	84.7885	3.642m	Back_Curb
6	8,179.9243	14,686.2488	84.7763	4.251m	Hinge_Cut
7	8,179.8112	14,685.6168	86.7022	4.893m	Daylight

CHAINAGE 0+055.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,186.3429	14,693.7920	84.3076	-4.292m	Daylight
2	8,186.1185	14,692.5194	84.1784	-3.000m	Hinge_Cut
3	8,185.0766	14,686.6105	84.0284	3.000m	ETW
4	8,184.9985	14,686.1674	84.0014	3.450m	Flowline_Gutter
5	8,184.9652	14,685.9786	84.2264	3.642m	Back_Curb
6	8,184.8593	14,685.3782	84.2142	4.251m	Hinge_Cut
7	8,184.7379	14,684.6897	86.3115	4.950m	Daylight

CHAINAGE 0+060.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,191.8792	14,693.2177	83.7702	-4.939m	Daylight
2	8,191.3280	14,691.3583	83.5763	-3.000m	Hinge_Cut
3	8,189.6226	14,685.6058	83.4263	3.000m	ETW
4	8,189.4947	14,685.1743	83.3993	3.450m	Flowline_Gutter
5	8,189.4402	14,684.9905	83.6243	3.642m	Back_Curb
6	8,189.2669	14,684.4061	83.6121	4.251m	Hinge_Cut
7	8,188.9691	14,683.4014	86.7558	5.299m	Daylight

CHAINAGE 0+065.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,197.1039	14,690.9214	83.0981	-4.640m	Daylight
2	8,196.4125	14,689.4344	82.9341	-3.000m	Hinge_Cut
3	8,193.8825	14,683.9939	82.7841	3.000m	ETW
4	8,193.6928	14,683.5858	82.7571	3.450m	Flowline_Gutter
5	8,193.6120	14,683.4120	82.9821	3.642m	Back_Curb
6	8,193.3549	14,682.8592	82.9699	4.251m	Hinge_Cut
7	8,192.8426	14,681.7575	86.6151	5.466m	Daylight

CHAINAGE 0+070.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,202.1914	14,688.3523	82.4391	-4.875m	Daylight
2	8,201.1601	14,686.7863	82.2516	-3.000m	Hinge_Cut
3	8,197.8603	14,681.7752	82.1016	3.000m	ETW
4	8,197.6128	14,681.3993	82.0746	3.450m	Flowline_Gutter
5	8,197.5074	14,681.2392	82.2996	3.642m	Back_Curb
6	8,197.1722	14,680.7301	82.2874	4.251m	Hinge_Cut
7	8,196.5551	14,679.7930	85.6533	5.373m	Daylight

CHAINAGE 0+075.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,207.7280	14,685.9990	81.8678	-6.391m	Daylight
2	8,205.4685	14,683.4710	81.5288	-3.000m	Hinge_Cut
3	8,201.4701	14,678.9975	81.3788	3.000m	ETW
4	8,201.1702	14,678.6620	81.3518	3.450m	Flowline_Gutter

5	8,201.0424	14,678.5191	81.5768	3.642m	Back_Curb
6	8,200.6362	14,678.0646	81.5646	4.251m	Hinge_Cut
7	8,199.8218	14,677.1534	85.2307	5.473m	Daylight

CHAINAGE 0+080.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,212.1085	14,681.9449	81.1381	-6.727m	Daylight
2	8,209.2446	14,679.5603	80.7654	-3.000m	Hinge_Cut
3	8,204.6338	14,675.7209	80.6154	3.000m	ETW
4	8,204.2880	14,675.4330	80.5884	3.450m	Flowline_Gutter
5	8,204.1407	14,675.3103	80.8134	3.642m	Back_Curb
6	8,203.6723	14,674.9202	80.8012	4.251m	Hinge_Cut
7	8,202.6129	14,674.0381	84.9369	5.630m	Daylight

CHAINAGE 0+085.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,214.0126	14,676.1169	80.1494	-4.880m	Daylight
2	8,212.4070	14,675.1384	79.9614	-3.000m	Hinge_Cut
3	8,207.2833	14,672.0161	79.8114	3.000m	ETW
4	8,206.8991	14,671.7820	79.7844	3.450m	Flowline_Gutter
5	8,206.7354	14,671.6822	80.0094	3.642m	Back_Curb
6	8,206.2148	14,671.3650	79.9972	4.251m	Hinge_Cut
7	8,204.9179	14,670.5746	84.5536	5.770m	Daylight

CHAINAGE 0+090.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,217.9134	14,671.5812	78.7880	-6.286m	Daylight
2	8,214.8872	14,670.3009	79.1166	-3.000m	ETW
3	8,209.3614	14,667.9631	78.9666	3.000m	ETW
4	8,208.9470	14,667.7878	78.9396	3.450m	Flowline_Gutter
5	8,208.7704	14,667.7131	79.1646	3.642m	Back_Curb
6	8,208.2090	14,667.4755	79.1524	4.251m	Hinge_Cut
7	8,206.7131	14,666.8427	84.0252	5.876m	Daylight

CHAINAGE 0+095.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,218.4038	14,665.9485	78.0577	-4.850m	Daylight

2	8,216.6477	14,665.3666	78.2427	-3.000m	ETW
3	8,210.9523	14,663.4794	78.0927	3.000m	ETW
4	8,210.5251	14,663.3378	78.0657	3.450m	Flowline_Gutter
5	8,210.3431	14,663.2775	78.2907	3.642m	Back_Curb
6	8,209.7645	14,663.0858	78.2785	4.251m	Hinge_Cut
7	8,208.1797	14,662.5606	83.2870	5.921m	Daylight

CHAINAGE 0+100.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,218.2569	14,660.6325	77.3639	-3.038m	Daylight
2	8,218.2204	14,660.6204	77.3677	-3.000m	ETW
3	8,212.5250	14,658.7331	77.2177	3.000m	ETW
4	8,212.0978	14,658.5916	77.1907	3.450m	Flowline_Gutter
5	8,211.9159	14,658.5313	77.4157	3.642m	Back_Curb
6	8,211.3372	14,658.3396	77.4035	4.251m	Hinge_Cut
7	8,209.5727	14,657.7549	82.9802	6.110m	Daylight

CHAINAGE 0+105.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,221.3490	14,656.3897	76.6566	-4.639m	Daylight
2	8,219.7932	14,655.8742	76.4927	-3.000m	Hinge_Cut
3	8,214.0977	14,653.9869	76.3427	3.000m	ETW
4	8,213.6705	14,653.8454	76.3157	3.450m	Flowline_Gutter
5	8,213.4886	14,653.7851	76.5407	3.642m	Back_Curb
6	8,212.9099	14,653.5933	76.5285	4.251m	Hinge_Cut
7	8,211.1443	14,653.0083	82.1086	6.111m	Daylight

CHAINAGE 0+110.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,222.7699	14,651.5932	75.7656	-4.479m	Daylight
2	8,221.3659	14,651.1280	75.6177	-3.000m	Hinge_Cut
3	8,215.6704	14,649.2407	75.4677	3.000m	ETW
4	8,215.2433	14,649.0992	75.4407	3.450m	Flowline_Gutter
5	8,215.0613	14,649.0389	75.6657	3.642m	Back_Curb
6	8,214.4826	14,648.8471	75.6535	4.251m	Hinge_Cut
7	8,212.6180	14,648.2293	81.5466	6.216m	Daylight

CHAINAGE 0+115.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,225.2916	14,647.1615	74.9906	-5.479m	Daylight
2	8,222.9386	14,646.3818	74.7427	-3.000m	Hinge_Cut
3	8,217.2432	14,644.4945	74.5927	3.000m	ETW
4	8,216.8160	14,644.3530	74.5657	3.450m	Flowline_Gutter
5	8,216.6340	14,644.2927	74.7907	3.642m	Back_Curb
6	8,216.0554	14,644.1009	74.7785	4.251m	Hinge_Cut
7	8,215.1996	14,643.8174	77.4830	5.153m	Daylight

CHAINAGE 0+120.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,226.6569	14,642.3465	74.0938	-5.260m	Daylight
2	8,224.5113	14,641.6356	73.8677	-3.000m	Hinge_Cut
3	8,218.8159	14,639.7483	73.7177	3.000m	ETW
4	8,218.3887	14,639.6067	73.6907	3.450m	Flowline_Gutter
5	8,218.2067	14,639.5464	73.9157	3.642m	Back_Curb
6	8,217.6281	14,639.3547	73.9035	4.251m	Hinge_Cut
7	8,215.8962	14,638.7808	79.3771	6.076m	Daylight

CHAINAGE 0+125.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,231.3494	14,638.6341	73.4974	-8.547m	Daylight
2	8,226.0841	14,636.8893	72.9427	-3.000m	Hinge_Cut
3	8,220.3886	14,635.0021	72.7927	3.000m	ETW
4	8,219.9614	14,634.8605	72.7657	3.450m	Flowline_Gutter
5	8,219.7795	14,634.8002	72.9907	3.642m	Back_Curb
6	8,219.2008	14,634.6085	72.9785	4.251m	Hinge_Cut
7	8,217.4652	14,634.0334	78.4638	6.080m	Daylight

CHAINAGE 0+130.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,231.3710	14,633.4853	72.4121	-6.944m	Daylight
2	8,227.6464	14,632.1878	72.0177	-3.000m	Hinge_Cut
3	8,221.9803	14,630.2141	71.8677	3.000m	ETW
4	8,221.5554	14,630.0660	71.8407	3.450m	Flowline_Gutter

5	8,221.3743	14,630.0030	72.0657	3.642m	Back_Curb
6	8,220.7987	14,629.8024	72.0535	4.251m	Hinge_Cut
7	8,219.0211	14,629.1832	77.7005	6.134m	Daylight

CHAINAGE 0+135.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,232.8216	14,629.6285	71.4708	-6.781m	Daylight
2	8,229.4395	14,627.9384	71.0927	-3.000m	Hinge_Cut
3	8,224.0723	14,625.2564	70.9427	3.000m	ETW
4	8,223.6698	14,625.0553	70.9157	3.450m	Flowline_Gutter
5	8,223.4983	14,624.9696	71.1407	3.642m	Back_Curb
6	8,222.9530	14,624.6971	71.1285	4.251m	Hinge_Cut
7	8,221.1238	14,623.7831	77.2630	6.296m	Daylight

CHAINAGE 0+140.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,234.7635	14,625.9704	70.5294	-6.617m	Daylight
2	8,231.7612	14,623.9532	70.1677	-3.000m	Hinge_Cut
3	8,226.7810	14,620.6070	70.0177	3.000m	ETW
4	8,226.4075	14,620.3560	69.9907	3.450m	Flowline_Gutter
5	8,226.2483	14,620.2491	70.2157	3.642m	Back_Curb
6	8,225.7424	14,619.9091	70.2035	4.251m	Hinge_Cut
7	8,225.0198	14,619.4237	72.8150	5.122m	Daylight

CHAINAGE 0+145.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,237.0313	14,622.4524	69.5696	-6.269m	Daylight
2	8,234.5734	14,620.2975	69.2427	-3.000m	Hinge_Cut
3	8,230.0619	14,616.3420	69.0927	3.000m	ETW
4	8,229.7235	14,616.0453	69.0657	3.450m	Flowline_Gutter
5	8,229.5794	14,615.9190	69.2907	3.642m	Back_Curb
6	8,229.1210	14,615.5171	69.2785	4.251m	Hinge_Cut
7	8,227.6811	14,614.2546	75.0236	6.166m	Daylight

CHAINAGE 0+150.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,239.1858	14,618.5687	68.5227	-5.050m	Daylight

2	8,237.8300	14,617.0314	68.3177	-3.000m	Hinge_Cut
3	8,233.8612	14,612.5315	68.1677	3.000m	ETW
4	8,233.5635	14,612.1940	68.1407	3.450m	Flowline_Gutter
5	8,233.4367	14,612.0502	68.3657	3.642m	Back_Curb
6	8,233.0335	14,611.5931	68.3535	4.251m	Hinge_Cut
7	8,231.8111	14,610.2072	73.8973	6.099m	Daylight

CHAINAGE 0+155.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,242.6169	14,615.2334	67.5559	-4.632m	Daylight
2	8,241.5958	14,613.9604	67.3927	-3.000m	Hinge_Cut
3	8,237.8417	14,609.2799	67.2427	3.000m	ETW
4	8,237.5601	14,608.9289	67.2157	3.450m	Flowline_Gutter
5	8,237.4401	14,608.7794	67.4407	3.642m	Back_Curb
6	8,237.0587	14,608.3038	67.4285	4.251m	Hinge_Cut
7	8,235.9128	14,606.8752	72.9227	6.083m	Daylight

CHAINAGE 0+160.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,246.0773	14,611.5564	66.5606	-3.929m	Daylight
2	8,245.4962	14,610.8319	66.4677	-3.000m	Hinge_Cut
3	8,241.7420	14,606.1515	66.3177	3.000m	ETW
4	8,241.4604	14,605.8004	66.2907	3.450m	Flowline_Gutter
5	8,241.3405	14,605.6509	66.5157	3.642m	Back_Curb
6	8,240.9591	14,605.1754	66.5035	4.251m	Hinge_Cut
7	8,239.9039	14,603.8598	71.5628	5.938m	Daylight

CHAINAGE 0+165.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,249.5684	14,607.9178	65.5702	-3.275m	Daylight
2	8,249.3965	14,607.7034	65.5427	-3.000m	Hinge_Cut
3	8,245.6424	14,603.0230	65.3927	3.000m	ETW
4	8,245.3608	14,602.6720	65.3657	3.450m	Flowline_Gutter
5	8,245.2409	14,602.5224	65.5907	3.642m	Back_Curb
6	8,244.8594	14,602.0469	65.5785	4.251m	Hinge_Cut
7	8,243.8476	14,600.7855	70.4298	5.868m	Daylight

CHAINAGE 0+170.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,253.6590	14,605.0265	64.5599	-3.579m	Daylight
2	8,253.2969	14,604.5750	64.6177	-3.000m	ETW
3	8,249.5427	14,599.8946	64.4677	3.000m	ETW
4	8,249.2612	14,599.5435	64.4407	3.450m	Flowline_Gutter
5	8,249.1412	14,599.3940	64.6657	3.642m	Back_Curb
6	8,248.7598	14,598.9185	64.6535	4.251m	Hinge_Cut
7	8,247.7297	14,597.6342	69.5924	5.898m	Daylight

CHAINAGE 0+175.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,257.6471	14,602.0074	63.6208	-3.719m	Daylight
2	8,257.1972	14,601.4465	63.6927	-3.000m	ETW
3	8,253.4431	14,596.7661	63.5427	3.000m	ETW
4	8,253.1615	14,596.4151	63.5157	3.450m	Flowline_Gutter
5	8,253.0416	14,596.2655	63.7407	3.642m	Back_Curb
6	8,252.6601	14,595.7900	63.7285	4.251m	Hinge_Cut
7	8,251.6934	14,594.5848	68.3636	5.796m	Daylight

CHAINAGE 0+180.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,261.4490	14,598.5637	62.7239	-3.438m	Daylight
2	8,261.1629	14,598.2316	62.7677	-3.000m	ETW
3	8,257.2467	14,593.6859	62.6177	3.000m	ETW
4	8,256.9530	14,593.3450	62.5907	3.450m	Flowline_Gutter
5	8,256.8279	14,593.1998	62.8157	3.642m	Back_Curb
6	8,256.4300	14,592.7379	62.8035	4.251m	Hinge_Cut
7	8,255.5117	14,591.6720	67.0243	5.658m	Daylight

CHAINAGE 0+185.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,265.1027	14,594.5661	61.8296	-3.131m	Daylight
2	8,265.0056	14,594.4783	61.8427	-3.000m	ETW
3	8,260.5532	14,590.4564	61.6927	3.000m	ETW
4	8,260.2193	14,590.1547	61.6657	3.450m	Flowline_Gutter

5	8,260.0770	14,590.0262	61.8907	3.642m	Back_Curb
6	8,259.6246	14,589.6176	61.8785	4.251m	Hinge_Cut
7	8,258.6606	14,588.7467	65.7760	5.550m	Daylight

CHAINAGE 0+190.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,268.7451	14,590.5511	60.9659	-3.482m	Daylight
2	8,268.3503	14,590.2753	60.9177	-3.000m	ETW
3	8,263.4312	14,586.8397	60.7677	3.000m	ETW
4	8,263.0564	14,586.5780	60.6915	3.457m	ETW
5	8,262.6815	14,586.3162	60.7677	3.914m	Hinge_Cut
6	8,255.9481	14,581.6135	66.5169	12.127m	Daylight

CHAINAGE 0+195.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,272.2653	14,586.2779	60.1194	-4.266m	Daylight
2	8,271.1448	14,585.6880	59.9927	-3.000m	ETW
3	8,265.8358	14,582.8925	59.8427	3.000m	ETW
4	8,265.4313	14,582.6795	59.7665	3.457m	ETW
5	8,265.0267	14,582.4665	59.8427	3.914m	Hinge_Cut
6	8,261.4407	14,580.5783	62.6797	7.967m	Daylight

CHAINAGE 0+200.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,276.6957	14,582.0477	59.4912	-6.579m	Daylight
2	8,273.3457	14,580.7880	59.1333	-3.000m	Hinge_Cut
3	8,267.7296	14,578.6763	58.9833	3.000m	ETW
4	8,267.3084	14,578.5179	58.9563	3.450m	Flowline_Gutter
5	8,267.1290	14,578.4505	59.1813	3.642m	Back_Curb
6	8,266.5584	14,578.2359	59.1692	4.251m	Hinge_Cut
7	8,265.5333	14,577.8505	62.4546	5.346m	Daylight

CHAINAGE 0+205.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,276.1054	14,575.9357	58.5462	-4.220m	Daylight
2	8,274.9185	14,575.6520	58.4241	-3.000m	Hinge_Cut
3	8,269.0829	14,574.2569	58.2741	3.000m	ETW

4	8,268.6453	14,574.1523	58.2471	3.450m	Flowline_Gutter
5	8,268.4588	14,574.1077	58.4721	3.642m	Back_Curb
6	8,267.8659	14,573.9660	58.4599	4.251m	Hinge_Cut
7	8,266.6288	14,573.6702	62.2759	5.523m	Daylight

CHAINAGE 0+210.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,276.8450	14,570.4707	57.9649	-4.012m	Daylight
2	8,275.8387	14,570.3599	57.8636	-3.000m	Hinge_Cut
3	8,269.8747	14,569.7032	57.7136	3.000m	ETW
4	8,269.4274	14,569.6540	57.6866	3.450m	Flowline_Gutter
5	8,269.2369	14,569.6330	57.9116	3.642m	Back_Curb
6	8,268.6309	14,569.5663	57.8994	4.251m	Hinge_Cut
7	8,267.6584	14,569.4592	60.8345	5.230m	Daylight

CHAINAGE 0+215.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,276.2653	14,564.9917	57.4677	-3.173m	Daylight
2	8,276.0919	14,564.9943	57.4503	-3.000m	Hinge_Cut
3	8,270.0926	14,565.0864	57.3003	3.000m	ETW
4	8,269.6426	14,565.0933	57.2733	3.450m	Flowline_Gutter
5	8,269.4510	14,565.0962	57.4983	3.642m	Back_Curb
6	8,268.8414	14,565.1056	57.4861	4.251m	Hinge_Cut
7	8,268.1139	14,565.1167	59.6690	4.979m	Daylight

CHAINAGE 0+220.00

POINT	X	Y	Z	OFFSET	STRING CUT
1	8,277.2477	14,559.9710	57.0593	-4.239m	Daylight
2	8,276.0092	14,559.9914	57.1832	-3.000m	ETW
3	8,270.0100	14,560.0906	57.0332	3.000m	ETW
4	8,269.5601	14,560.0981	57.0062	3.450m	Flowline_Gutter
5	8,269.3684	14,560.1012	57.2312	3.642m	Back_Curb
6	8,268.7589	14,560.1113	57.2190	4.251m	Hinge_Cut
7	8,268.2496	14,560.1197	58.7469	4.761m	Daylight

Environmental Management Plan

1. INTRODUCTION

- 1.1 The Cavalla Hill Road to Barzey's By-pass Road Environmental Management Plan (EMP) was developed to ensure that any potential adverse impact on the environment by the road works will be minimized. The Contractor must familiarize themselves with this EMP and be guided accordingly.
- 1.2 The overarching environmental and planning laws of Montserrat (Conservation and Environmental Management Act, Physical Planning Act, Public Health Act) along with this complementary EMP would ensure that the project is conducted in an environmentally responsible and conscientious manner in accordance with best practice. This EMP is premised on the fact that no Strategic Environmental Assessment (SEA) or Environmental Impact Assessment (EIA) was conducted for the project.
- 1.3 An effective tool to complement the EMP is a work method procedure for each significant aspect of the construction. These procedures clearly outline the processes to be followed from start to completion of each significant construction operation so that all concerned are clear on the sequence of activities to be carried out to achieve a particular objective.
- 1.4 The purpose of the EMP is to address, where applicable, the various aspects that can potentially be impacted upon by the project while prescribing mitigation and corrective actions. These aspects include:
- Prevention of damage to sensitive and protected areas (archaeological, etc)
 - Chemical spills and vehicle leakages
 - Soil erosion impacts on watercourses and coastal areas
 - Disposal of solid and liquid construction wastes
 - Construction noise and vibration
 - Construction dust and air pollution

- The preservation of roadside vegetation to prevent soil erosion
- Construction traffic management

1.5 This EMP is the only environmental management tool developed specifically for this project and so will also contain EM procedures for the PWD and other Contractors to follow. This plan also sets out the monitoring and reporting arrangements required. The Department of the Environment, Environmental Health Department and the Physical Planning Unit are the main Government entities that have the expertise to provide guidance on environmental matters.

2. RESPONSIBILITIES

2.1 The Contractor will be responsible for ensuring compliance with all relevant legislation and with environmental controls and mitigation measures as set out in this plan. GOM/BNTF and Consultant are responsible for monitoring the activities of the contractors and have the authority to stop works in the event of environmental damage, negligence or failure to comply with the legislation.

2.2 It is vitally important for the community to be kept informed of project activities that may impact their daily routines, whether in a positive or negative manner. The Contractor and BNTF representative should notify all residents and business owners of the following:

- The purpose of the project;
- The nature and duration of the works;
- The possible nuisances and inconveniences;
- Working hours;
- Key contact persons.

2.3 Community meetings should be used as a means to disseminate information although individual notification and personal meetings will have to be periodically conducted, especially in cases where single properties will be impacted by specific works. All formal enquiries and complaints are to be investigated in a timely manner and a formal response given. A log is to be maintained by BNTF to record all formal complaints.

3. LEGISLATION, REGULATIONS, CONSENTS & PERMITS

3.1 Legislation

3.1.1 The Contractor shall comply with all relevant legislation and regulations, including environmental legislation by firstly, being familiar with the relevant sections of the legislation and recognizing the importance and benefits of conforming:

- Conservation and Environmental Management Act
- Physical Planning Act 2002
- Forestry, Wildlife, National Parks and Protected Areas Act 2002
- Public Health Act
- Any other relevant legislation

3.2 Organization and Responsibilities

3.2.1 All incidences potentially having an environmental impact shall be reported promptly to the BNTF manager by the Contractor. Corrective measures shall be prescribed by the BNTF and actioned by the contractor.

3.2.2 The Contractor will work closely with the local environmental authorities to be aware of their concerns and expertise. In the event of complex matters; debris disposal; tree and vegetation removal; impact on watercourses, historic and archaeological sites, private property and other such matters, the following authorities should be consulted:

- Department of the Environment – The Director of the Environment
- Environmental Health Department – Principal Environment Health Officer
- Physical Planning Unit – The Chief physical Planner
- Montserrat National Trust – The Managing Director
- Public Works Department – The Director of Public Works

4.0 RISK REGISTER

Aspect	Cause	Probability w/o mitigation	Pathway	Receptor	Consequences	Potential for Mitigation
Sediment Transport	Earthworks	2	Surface runoff	Ghaults & Coastline	3	B
Stone Transport	Base/ Subbase Wk	2	Vehicle raveling, runoff	Carriageway Property	2	B
Hydrocarbon Spills	Equipment	2	Pavement Matrix	Pavement	3	A
Air pollution	Earthworks	3	Local atmosphere	Property People	3	A
Noise Pollution	General works	3	Atmosphere	People	2	C
Vibration	Earth Asphalt wk	3	Pavement ground	Structures People	3	C
Water runoff	Drainage Carriageway	2	Pavement	Property	2	A
Gridlock Traffic mgt	General works	3	Roadway	People	3	C
Site Erosion	Earthworks Carriageway	2	Slopes Roadway	Property Ghaults	2	A

Probability 1 to 3 – High to Low; Consequences 1 to 3 – Severe to Minimal; A to C – High to Low

5. ENVIRONMENTAL MANAGEMENT PROCEDURES

5.1 Purpose

5.1.1 It is a project requirement that these procedures be followed by contractors responsible for the execution of the various aspects of the project. These procedures have been developed to enable the effective mitigation of all risks, with procedures addressing each of the following environmental aspects:

- Prevention of damage to sensitive and protected areas (archaeological, etc);
- Prevention of damage to utilities;
- Chemical spills and vehicle leakages;
- Soil erosion impacts on slopes, watercourses and coastal areas;
- Disposal of solid waste;
- Construction noise and vibration;
- Construction dust and air pollution;
- Ecology;
- Construction traffic management

5.2 Prevention of damage to sensitive and protected areas (archaeological, etc)

5.2.1 The designated project Environmental Managers (EMs) are to liaise with the relevant environmental authorities to ascertain all the sensitivities (natural or archaeological) of the environment that can be potentially impacted by the project and what to be vigilant for. Although it may be that no significant concerns may be raised by the authorities, it is important that a watching brief be maintained by the EMs to document any unexpected or suspect areas, structures, formations or artefacts. All such matters are to follow the protocol in section 3.2.

5.3 Prevention of damage to utilities

5.3.1 Very close collaboration must be held with all key managers of the utility companies. The existing utility plan for the entire project area must be clear and known by all contractors.

5.3.2 Due care and attention must be taken during excavation works with small test, carefully excavated test trenches dug in areas that are confined, suspect or do not have a known utility plan. Areas with road crossings are to be observed and treated with care so as not to disturb customers' supply. When operating in areas with overhead lines, the site supervisor and workers must ensure that these lines are not impacted on by any heavy equipment by being watchful and directive.

5.3.3 In the event that a utility service is impacted on or broken, the relevant utility is to be contacted immediately. No site worker is to attend to broken power or other utility cables.

5.4 Chemical spills and vehicle leakages

5.4.1 All vehicles and equipment employed for the project are to be in excellent serviced condition free from leaks, faulty, worn or old seals and in good operating condition. A regular maintenance program supported by daily inspection of each piece of machinery is to be implemented and followed.

5.4.2. Deliberate care must be taken to handle all construction related chemicals and fuels in designated safe areas or distances away from the immediate construction site unless those materials are for direct application and part of the construction specification. No vehicle or equipment shall be refuelled, lubricated or hydraulic system filled on the construction site except in cases of real emergencies and breakdown where such action is absolutely necessary.

5.4.3 The spraying or application of asphaltic materials is to be conducted by the relevant trained personnel in accordance with the specifications pertaining to that activity. Over application is to be avoided.

5.4.4 The PWD must have the necessary, adequate hazardous materials collection vessels, absorbent mats/materials and fine sand for addressing leaks, spills and over application. The cleaning of asphalt and related material from equipment and machinery and the disposal of these hazardous materials must be conducted in a manner and location that is in accordance with national laws and policies and as

directed by the environmental authorities.

5.4.5 All chemical spills and leaks are to be reported immediately to BNTF.

5.5 Soil and deposited material erosion impacts on slopes, watercourses and coastal areas

5.5.1 As much as is reasonably possible, the road alignment, profile, drainage structures, shoulder, embankment and slope alterations must be engineered and constructed in such a way as to prevent the incidence of erosion in any area (proximal or remote) by water, wind, traffic or any other agent that would not have caused erosion prior to the execution of the project. Daily, close monitoring of the weather is a prudent undertaking.

5.5.2 The deposition and stockpiling of materials should be done in accordance with best practices by implementing the necessary confinement and compaction techniques. Deposited and disturbed materials should not be allowed to interfere with drainage structures and features so as to cause blockage or flow restrictions.

5.5.3 Excavation works should be done in manageable tranches that allow closing, securing or completion by the end of the work period.

5.6 Disposal of solid waste

5.6.1 Having paid all diligence to the reduction of construction waste, the possibility may arise where some solid waste is still generated. In such cases, the disposal of the waste is to be conducted in an environmentally responsible manner. The waste is to be classified and disposed of in accordance with guidelines from the environmental authorities and in such areas designated beforehand to receive such waste. New disposal areas are to meet with the approval of the environmental authorities after careful consultation. Soil and other material contaminated by chemicals, fuel or other hazardous material are to be disposed of in a way and location that meets the approval of the relevant environmental authorities. No waste should be dumped or left in the vicinity of the roadway, neighbouring property or ghauts and water courses.

5.7 Construction noise and vibration

5.7.1 The working hours should be chosen with consideration given to the impact that construction noise has on the proper functioning, rest, study and sleep periods of residents in the dissemination path of the noise. Noise sensitive areas should be identified and where possible the impact of noise to those residents kept to a minimum. Where deemed necessary and possible within the financial and material scope of the project, noise reduction screening could be erected for such areas. Noise generating, construction activities should be restricted to peak working and ambient noise periods during the day. All equipment are to have the necessary, effectively functioning, noise muffling attachments where is practically applicable. Loud chatter, shouting and profane speech by site workers are also forms of nuisance, noise and pollution that must not be practiced.

5.7.2 Where vibration is necessary along the construction route to obtain necessary compaction of materials, the best practice of monitoring and measuring should be employed so as not to unnecessarily prolong the vibration operation. Optimum gradation and moisture content of materials to be vibrated should be used in order to reach desired compaction levels in as efficient a time as possible.

5.7.3 It is important to record and photograph the condition of nearby structures to properly address damage complaints and ascertain the impact the vibration may have had. The execution of work involving strong vibration must be conducted with the knowledge that that some form of cosmetic, superficial or structural damage may occur and thus caution and due regard must be exercised.

5.8 Construction dust and air pollution (including fumes)

5.8.1 The public and project workers are very sensitive to the appearance of air pollution even more so in Montserrat where the heightened awareness of the effects of air contaminants (especially ash) prevails.

5.8.2 Dust abatement measures such as dampening, compacting, covering, rapid utilization of stockpiles, stockpile location and size control, must be employed with regularity in all applicable situations. Where dampening is used, the rate of application of the water should allow for penetration and minimizing the risk of runoff and erosion. The weather forecast, times of day, traffic frequency and property occupation are all factors that should be considered when trying to control the dust levels. Traffic speed control education and mechanisms should be implemented, especially in areas that are unpaved. Where possible, unpaved, trafficked areas should receive some asphalt surface treatment or scarified, wet, re-graded and compacted as a minimum treatment. This not only reduces dust levels but increases motorist satisfaction.

5.8.3 Project workers should be protected against the carcinogenic asphalt fumes by being supplied with and using the appropriate air filtering respirators. The engines of project vehicles and equipment should be well tuned and serviced so as to minimize the amount and toxicity of their exhaust emissions.

5.9 Ecology

5.9.1 The project management team should seek to be made aware of any sensitive ecological systems that lie along the construction route, by consulting with the applicable environmental authorities. If such systems are identified then impact assessment monitoring systems should be put in place to record the baseline conditions and changes, if any, introduced as a result of the project and inform on what actions need to be taken. Care must be taken not to impact remote ecologies as a result of erosion, sedimentation and increasing turbidity levels of coastlines and ghauts.

5.10 Construction and other traffic management

5.1.1 A robust Traffic Management Plan should be prepared to guide the handling of all traffic for the duration of the project and for various segments of roadway. Timing of the different aspects of works; alternate routes and diversions; traffic lights, signals and signal personnel; restricted flow areas; police expertise; communication radios;

location of construction vehicles and equipment all have to be taken into consideration. The objective should be to afford the road user the most comfortable, safe and expeditious travel experience possible considering the circumstances accompanying road construction. Proper scheduling of traffic disrupting works, signals, signage and efficient guides are necessary especially where alternative routes are not possible.

- 5.2.2 Where culverts and bridges are impacted and the effective road width is reduced, adequate, temporary water channelling structures, shoring up, guardrails, cones, reflective tape and hazard lights may all have to be utilized to ensure safety and maintain proper water flow in the ghauts, especially during the hurricane season.

6.0 RECORDING AND REPORTING

6.1 Recording of environmental management during the project life will be conducted by the Consultant. The recording will entail documenting of the following:

- Complaints related to noise and vibrations and inspections and observations
- Complaints related to dust and visual inspections and observations
- Evidence of erosion or water related matters
- All other environmental related incidents and complaints as per this EMP
- Supporting photographs of matters related to the essentials of this EMP

6.2 An environmental management section will form part of the Consultant's monthly reports

7.0 REVIEW OF PERFORMANCE OF ENVIRONMENTAL MANAGEMENT PROCEDURES

- 7.1 Where deemed necessary due to peculiar site experiences and observed deficiencies, the Consultant may update the procedures to promote better environmental protection and responsibility. This may be done after discussions with BNTF. A monthly review of the procedures is useful to make the document as current and relevant as is possible, for the project.

8. EMERGENCY PREPAREDNESS AND RESPONSE

- 8.1 The basis of emergency response planning is firstly incident prevention, and secondly rendering any incidents harmless. Incident containment or clean-up is a last resort. In responding to any emergency situation, the objective will be to protect the following, in priority order:
- (i) Human life and health
 - (ii) The environment
 - (iii) Assets belonging to the Employer
 - (iv) Maintenance of normal construction operations on the site
- 8.2 Any incident resulting in, or is likely to result in, injury or threat to human health or life, either on- or off-site, is to be reported to the emergency services immediately.
- 8.3 Any emergency or incident that has caused, or may give rise to pollution of water, air or land, is to be reported immediately in accordance with section 3.2 of this EMP.
- 8.4 All reasonable measures shall be taken to prevent contamination of water, air or land as a result of any incident, to reduce such contamination if it is unavoidable, and to remedy any contamination which has occurred. The PWD shall co-operate with the emergency services \ and statutory authorities to warn the public of any danger to health or safety arising from activities on the site.
- 8.5 The PWD should prepare a Pollution Incident Control Plan that includes:
- a) Guidance on the storage and use of hazardous materials;
 - b) Guidelines on the degree of containment required dependent on the nature of the materials involved;
 - c) Procedures and measures to be adopted in the event of a pollution incident, to contain and limit any adverse effects;
 - d) Procedures with regard to the spillage or release of any hazardous materials.

9. ENVIRONMENTAL MANAGEMENT AUDIT

- 9.1 The BNTF may periodically authorize an independent check of the robustness and effectiveness of the EMP. The audit will entail the examination of the monthly reports; complaints; incidences; site conditions; work procedures; thoroughness and accuracy of documentation; response to complaints and incidents; interviews; reporting process, and consultation with the environmental authorities, project management team and other stakeholders.
- 9.2 The Auditor will produce an Environmental Inspection Report to the client including observed areas of compliance, noncompliance and recommendations for possible inclusion in the existing EMP.

PART 3 – Conditions of Contract and Contract Forms

Section VII. General Conditions of Contract

These General Conditions of Contract (GCC), read in conjunction with the Particular Conditions of Contract (PCC) and other documents listed therein, should be a complete document expressing fairly the rights and obligations of both parties.

These General Conditions of Contract have been developed on the basis of considerable international experience in the drafting and management of contracts, bearing in mind a trend in the construction industry towards simpler, more straightforward language.

The GCC can be used for both smaller admeasurement contracts and lump sum contracts.

Table of Clauses

A.	General.....	6
	1. Definitions.....	6
	2. Interpretation.....	8
	3. Language and Law.....	9
	4. Project Manager’s Decisions.....	9
	5. Delegation.....	9
	6. Communications.....	9
	7. Subcontracting.....	9
	8. Other Contractors.....	9
	9. Personnel and Equipment.....	10
	10. Employer’s and Contractor’s Risks.....	10
	11. Employer’s Risks.....	10
	12. Contractor’s Risks.....	11
	13. Insurance.....	11
	14. Site Data.....	11
	15. Contractor to Construct the Works.....	12
	16. The Works to be Completed by the Intended Completion Date.....	12
	17. Approval by the Project Manager.....	12
	18. Safety.....	12
	19. Discoveries.....	12
	20. Possession of the Site.....	12
	21. Access to the Site.....	12
	22. Instructions, Inspections and Audits.....	13
	23. Appointment of the Adjudicator.....	13
	24. Procedure for Disputes.....	13
B.	Time Control.....	14
	25. Program.....	14
	26. Extension of the Intended Completion Date.....	14
	27. Acceleration.....	15
	28. Delays Ordered by the Project Manager.....	15
	29. Management Meetings.....	15
	30. Early Warnings.....	15
C.	Quality Control.....	16
	31. Identifying Defects.....	16
	32. Tests.....	16
	33. Correction of Defects.....	16
	34. Uncorrected Defects.....	16

D. Cost Control.....16

35. Contract Price.....	16
36. Changes in the Contract Price.....	17
37. Variations,.....	17
38. Cash Flow Forecasts.....	18
39. Payment Certificates.....	18
40. Payments.....	19
41. Compensation Events.....	19
42. Tax.....	20
43. Currencies.....	21
44. Price Adjustment.....	21
45. Retention.....	21
46. Liquidated Damages.....	22
47. Bonus.....	22
48. Advance Payment.....	22
49. Securities.....	23
50. Dayworks.....	23
51. Cost of Repairs.....	23

E. Finishing the Contract.....23

52. Completion.....	23
53. Taking Over.....	23
54. Final Account.....	24
55. Operating and Maintenance Manuals.....	24
56. Termination.....	24
57. Fraud and Corruption.....	25
58. Payment Upon Termination.....	26
59. Property.....	26
60. Release from Performance.....	26
61. Suspension of Bank Loan or Grant.....	27
62. Eligibility.....	27

General Conditions of Contract

A. General

1. Definitions

- 1.1 Boldface type is used to identify defined terms.
- (a) The Accepted Contract Amount means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.
 - (b) The Activity Schedule is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump sum contract. It includes a lump sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events.
 - (c) The Adjudicator is the person appointed jointly by the *Employer* and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.
 - (d) Bank means the financing institution **named in the PCC**.
 - (e) Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid.
 - (f) Compensation Events are those defined in GCC Clause 41 hereunder.
 - (g) The Completion Date is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 52.1.
 - (h) The Contract is the Contract between the *Employer* and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.
 - (i) The Contractor is the party whose Bid to carry out the Works has been accepted by the *Employer*.
 - (j) The Contractor's Bid is the completed bidding document submitted by the Contractor to the *Employer*.
 - (k) The Contract Price is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.
 - (l) Days are calendar days; months are calendar months.
 - (m) Dayworks are varied work inputs subject to payment on a

time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.

- (n) A Defect is any part of the Works not completed in accordance with the Contract.
- (o) The Defects Liability Certificate is the certificate issued by Project Manager upon correction of defects by the Contractor.
- (p) The Defects Liability Period is the period **named in the PCC** pursuant to Sub-Clause 33.1 and calculated from the Completion Date.
- (q) Adjudicator means the single person appointed under Clause 23.
- (r) Drawings means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the *Employer* in accordance with the Contract, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.
- (s) The *Employer* is the party who employs the Contractor to carry out the Works, **as specified in the PCC**.
- (t) Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.
- (u) "In writing" or "written" means hand-written, type-written, printed or electronically made, and resulting in a permanent record;
- (v) The Initial Contract Price is the Contract Price listed in the *Employer's* Letter of Acceptance.
- (w) The Intended Completion Date is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is **specified in the PCC**. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.
- (x) Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.
- (y) Plant is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.
- (z) The Project Manager is the person **named in the PCC**

(or any other competent person appointed by the *Employer* and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract.

- (aa) PCC means Particular Conditions of Contract
- (bb) The Site is the area **defined as such in the PCC**.
- (cc) Site Investigation Reports are those that were included in the bidding documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.
- (dd) Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.
- (ee) The Start Date is **given in the PCC**. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.
- (ff) A Subcontractor is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.
- (gg) Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.
- (hh) A Variation is an instruction given by the Project Manager which varies the Works.
- (ii) The Works are what the Contract requires the Contractor to construct, install, and turn over to the *Employer*, **as defined in the PCC**.

- 2. Interpretation**
- 2.1 In interpreting these GCC, words indicating one gender include all genders. Words indicating the singular also include the plural and words indicating the plural also include the singular. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC.
 - 2.2 If sectional completion is **specified in the PCC**, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion

Date for the whole of the Works).

- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:
- (a) Agreement,
 - (b) Letter of Acceptance,
 - (c) Contractor's Bid,
 - (d) Particular Conditions of Contract,
 - (e) General Conditions of Contract,
 - (f) Specifications,
 - (g) Drawings,
 - (h) Bill of Quantities, and
 - (i) any other document **listed in the PCC** as forming part of the Contract.
- 3. Language and Law** 3.1 The language of the Contract and the law governing the Contract are **stated in the PCC**.
- 4. Project Manager's Decisions** 4.1 Except where otherwise specifically stated, the Project Manager shall decide contractual matters between the *Employer* and the Contractor in the role representing the *Employer*.
- 5. Delegation** 5.1 Otherwise specified in the PCC, the Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may revoke any delegation after notifying the Contractor.
- 6. Communications** 6.1 Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.
- 7. Subcontracting** 7.1 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the *Employer* in writing. Subcontracting shall not alter the Contractor's obligations.
- 8. Other Contractors** 8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the *Employer* between the dates given in the Schedule of Other Contractors, as **referred to in the PCC**. The Contractor shall also provide facilities and services for them as described in the Schedule. The *Employer* may modify the Schedule of Other Contractors, and

shall notify the Contractor of any such modification.

- 9. Personnel and Equipment**
- 9.1 The Contractor shall employ the key personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of key personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.
- 9.2 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.
- 10. Employer's and Contractor's Risks**
- 10.1 The *Employer* carries the risks which this Contract states are *Employer's* risks, and the Contractor carries the risks which this Contract states are Contractor's risks.
- 11. Employer's Risks**
- 11.1 From the Start Date until the Defects Liability Certificate has been issued, the following are *Employer's* risks:
- (a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to
 - (i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or
 - (ii) negligence, breach of statutory duty, or interference with any legal right by the *Employer* or by any person employed by or contracted to him except the Contractor.
 - (b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the *Employer* or in the *Employer's* design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.
- 11.2 From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is an *Employer's* risk except loss or damage due to
- (a) a Defect which existed on the Completion Date,

- (b) an event occurring before the Completion Date, which was not itself an *Employer's* risk, or
- (c) the activities of the Contractor on the Site after the Completion Date.

12. Contractor's Risks

12.1 From the Starting Date until the Defects Liability Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not *Employer's* risks are Contractor's risks.

13. Insurance

13.1 The Contractor shall provide, in the joint names of the *Employer* and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles **stated in the PCC** for the following events which are due to the Contractor's risks:

- (a) loss of or damage to the Works, Plant, and Materials;
- (b) loss of or damage to Equipment;
- (c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
- (d) personal injury or death.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

13.3 If the Contractor does not provide any of the policies and certificates required, the *Employer* may effect the insurance which the Contractor should have provided and recover the premiums the *Employer* has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

13.4 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager.

13.5 Both parties shall comply with any conditions of the insurance policies.

14. Site Data

14.1 The Contractor shall be deemed to have examined any Site Data **referred to in the PCC**, supplemented by any information

available to the Contractor.

- 15. Contractor to Construct the Works** 15.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.
- 16. The Works to Be Completed by the Intended Completion Date** 16.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.
- 17. Approval by the Project Manager** 17.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.
- 17.2 The Contractor shall be responsible for design of Temporary Works.
- 17.3 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary Works.
- 17.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.
- 17.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Project Manager before this use.
- 18. Safety** 18.1 The Contractor shall be responsible for the safety of all activities on the Site.
- 19. Discoveries** 19.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the *Employer*. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.
- 20. Possession of the Site** 20.1 The *Employer* shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date **stated in the PCC**, the *Employer* shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.
- 21. Access to the Site** 21.1 The Contractor shall allow the Project Manager and any person authorized by the Project Manager access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

- 22. Instructions, Inspections and Audits**
- 22.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.
- 22.2 The Contractor shall permit the Bank to inspect the Contractor's accounts, records and other documents relating to the submission of bids and contract performance and to have them audited by auditors appointed by the Bank. The Contractor shall maintain all documents and records related to the Contract for a period of *three (3)* years after completion of the Works. The Contractor shall *provide* any documents necessary for the investigation of allegations of fraud, *collusion*, *coercion*, or corruption and require its employees or agents with knowledge of the Contract to respond to questions from the Bank.
- 23. Appointment of the Adjudicator**
- 23.1 The Adjudicator shall be appointed jointly by the *Employer* and the Contractor, at the time of the *Employer's* issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the *Employer* does not agree on the appointment of the Adjudicator, the *Employer* will request the Appointing Authority **designated in the PCC**, to appoint the Adjudicator within 14 days of receipt of such request.
- 23.2 Should the Adjudicator resign or die, or should the *Employer* and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator shall be jointly appointed by the *Employer* and the Contractor. In case of disagreement between the *Employer* and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority **designated in the PCC** at the request of either party, within 14 days of receipt of such request.
- 24. Procedure for Disputes**
- 24.1 If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within 14 days of the notification of the Project Manager's decision.
- 24.2 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.
- 24.3 The Adjudicator shall be paid by the hour at the **rate specified in the PCC**, together with reimbursable expenses of the types **specified in the PCC**, and the cost shall be divided equally between the *Employer* and the Contractor, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the

Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision shall be final and binding.

- 24.4 The arbitration shall be conducted in accordance with the arbitration procedures published by the institution named and in the place specified **in the PCC**.

B. Time Control

25. Program

- 25.1 Within the time **stated in the PCC**, after the date of the Letter of Acceptance, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works. In the case of a lump sum contract, the activities in the Program shall be consistent with those in the Activity Schedule.
- 25.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.
- 25.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period **stated in the PCC**. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount **stated in the PCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted. In the case of a lump sum contract, the Contractor shall provide an updated Activity Schedule within 14 days of being instructed to by the Project Manager.
- 25.4 The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.

26. Extension of the Intended Completion Date

- 26.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.
- 26.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the

Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

- 27. Acceleration**
- 27.1 When the *Employer* wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the *Employer* accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the *Employer* and the Contractor.
- 27.2 If the Contractor's priced proposals for an acceleration are accepted by the *Employer*, they are incorporated in the Contract Price and treated as a Variation.
- 28. Delays Ordered by the Project Manager**
- 28.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.
- 29. Management Meetings**
- 29.1 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.
- 29.2 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the *Employer*. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.
- 30. Early Warning**
- 30.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.
- 30.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone

involved in the work and in carrying out any resulting instruction of the Project Manager.

C. Quality Control

- 31. Identifying Defects** 31.1 The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.
- 32. Tests** 32.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.
- 33. Correction of Defects** 33.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is **defined in the PCC**. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 33.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.
- 34. Uncorrected Defects** 34.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

D. Cost Control

- 35. Contract Price** 35.1 In the case of an admeasurement contract, the Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.
- 35.2 In the case of a lump sum contract, the Activity Schedule shall contain the priced activities for the Works to be performed by the Contractor. The Activity Schedule is used to monitor and control the performance of activities on which basis the Contractor will be paid. *If payment for Materials on Site shall be made separately, the Contractor shall show delivery of Materials to the*

Site separately on the Activity Schedule.

36. Changes in the Contract Price

36.1 In the case of an admeasurement contract:

- (a) If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change.
- (b) The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the *Employer*.
- (c) If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.

36.2 In the case of a lump sum contract, the Activity Schedule shall be amended by the Contractor to accommodate changes of Program or method of working made at the Contractor's own discretion. Prices in the Activity Schedule shall not be altered when the Contractor makes such changes to the Activity Schedule.

37. Variations

37.1 All Variations shall be included in updated Programs, and, in the case of a lump sum contract, also in the Activity Schedule, produced by the Contractor.

37.2 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.

37.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.

37.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

37.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.

37.6 In the case of an admeasurement contract, if the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in Sub-Clause 38.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work.

**38. Cash Flow
Forecasts**

38.1 When the Program, or, in the case of a lump sum contract, the Activity Schedule, is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

**39. Payment
Certificates**

39.1 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.

39.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

39.3 The value of work executed shall be determined by the Project Manager.

39.4 The value of work executed shall comprise:

(a) In the case of an admeasurement contract, the value of the quantities of work in the Bill of Quantities that have been completed; or

(b) In the case of a lump sum contract, the value of work executed shall comprise the value of completed activities in the Activity Schedule.

39.5 The value of work executed shall include the valuation of Variations and Compensation Events.

39.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

40. Payments

40.1 Payments shall be adjusted for deductions for advance payments and retention. The *Employer* shall pay the Contractor the

amounts certified by the Project Manager within 28 days of the date of each certificate. If the *Employer* makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.

- 40.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 40.3 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.
- 40.4 Items of the Works for which no rate or price has been entered shall not be paid for by the *Employer* and shall be deemed covered by other rates and prices in the Contract.

**41. Compensation
Events**

- 41.1 The following shall be Compensation Events:
- (a) The *Employer* does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.
 - (b) The *Employer* modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.
 - (c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.
 - (d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.
 - (e) The Project Manager unreasonably does not approve a subcontract to be let.
 - (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information

available publicly and from a visual inspection of the Site.

- (g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the *Employer*, or additional work required for safety or other reasons.
- (h) Other contractors, public authorities, utilities, or the *Employer* does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
- (i) The advance payment is delayed.
- (j) The effects on the Contractor of any of the *Employer's* Risks.
- (k) The Project Manager unreasonably delays issuing a Certificate of Completion.

41.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

41.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager shall assume that the Contractor shall react competently and promptly to the event.

41.4 The Contractor shall not be entitled to compensation to the extent that the *Employer's* interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

42. Tax

42.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 28 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a

result of GCC Clause 44.

43. Currencies 43.1 Where payments are made in currencies other than the currency of the *Employer's* country **specified in the PCC**, the exchange rates used for calculating the amounts to be paid shall be the exchange rates stated in the Contractor's Bid.

44. Price Adjustment 44.1 Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the PCC**. If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type indicated below applies to each Contract currency:

$$P_c = A_c + B_c \text{ Imc/Ioc}$$

where:

P_c is the adjustment factor for the portion of the Contract Price payable in a specific currency "c."

A_c and B_c are coefficients³ **specified in the PCC**, representing the nonadjustable and adjustable portions, respectively, of the Contract Price payable in that specific currency "c;" and

Imc is the index prevailing at the end of the month being invoiced and Ioc is the index prevailing 28 days before Bid opening for inputs payable; both in the specific currency "c."

44.2 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

45. Retention 45.1 The *Employer* shall retain from each payment due to the Contractor the proportion **stated in the PCC** until Completion of the whole of the Works.

45.2 Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC 51.1, half the total amount retained shall be repaid to the Contractor and half when

³ *The sum of the two coefficients A_c and B_c should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the nonadjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other nonadjustable components. The sum of the adjustments for each currency are added to the Contract Price. [To be transferred to the User Guide]*

the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected. The Contractor may substitute retention money with an “on demand” Bank guarantee.

46. Liquidated Damages

- 46.1 The Contractor shall pay liquidated damages to the *Employer* at the rate per day **stated in the PCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount **defined in the PCC**. The *Employer* may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor’s liabilities.
- 46.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Sub-Clause 40.1.

47. Bonus

- 47.1 The Contractor shall be paid a Bonus calculated at the rate per calendar day **stated in the PCC** for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are complete, although they may not be due to be complete.

48. Advance Payment

- 48.1 The *Employer* shall make advance payment to the Contractor of the amounts **stated in the PCC** by the date **stated in the PCC**, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the *Employer* in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.
- 48.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.
- 48.3 The advance payment shall be repaid by deducting proportionate

amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

- 49. Securities** 49.1 The Performance Security shall be provided to the *Employer* no later than the date specified in the Letter of Acceptance and shall be issued in an amount **specified in the PCC**, by a bank or surety acceptable to the *Employer*, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 days from the date of issue of the Certificate of Completion in the case of a Bank Guarantee, and until one year from the date of issue of the Completion Certificate in the case of a Performance Bond.
- 50. Dayworks** 50.1 If applicable, the Dayworks rates in the Contractor's Bid shall be used only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.
- 50.2 All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the work being done.
- 50.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.
- 51. Cost of Repairs** 51.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

- 52. Completion** 52.1 The Contractor shall request the Project Manager to issue a Certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the whole of the Works is completed.
- 53. Taking Over** 53.1 The *Employer* shall take over the Site and the Works within seven days of the Project Manager's issuing a certificate of Completion.
- 54. Final Account** 54.1 The Contractor shall supply the Project Manager with a detailed

account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

55. Operating and Maintenance Manuals

55.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates **stated in the PCC**.

55.2 If the Contractor does not supply the Drawings and/or manuals by the dates **stated in the PCC** pursuant to GCC Sub-Clause 55.1, or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the PCC** from payments due to the Contractor.

56. Termination

56.1 The *Employer* or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

56.2 Fundamental breaches of Contract shall include, but shall not be limited to, the following:

- (a) the Contractor stops work for 28 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project Manager;
- (b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 28 days;
- (c) the *Employer* or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- (d) a payment certified by the Project Manager is not paid by the *Employer* to the Contractor within 84 days of the date of the Project Manager's certificate;
- (e) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;
- (f) the Contractor does not maintain a Security, which is required;

- (g) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as **defined in the PCC**; or
- (h) if the Contractor, in the judgment of the *Employer*, has engaged in corrupt or fraudulent practices in competing for or in executing the Contract, pursuant to GCC Clause 57.1.

56.3 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC Sub-Clause 56.2 above, the Project Manager shall decide whether the breach is fundamental or not.

56.4 Notwithstanding the above, the *Employer* may terminate the Contract for convenience.

56.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

57. Fraud and Corruption

57.1 The Bank requires that Recipients (including beneficiaries of Bank loans), as well as Contractors, Subcontractors, manufacturers, and Consultants under Bank-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of this policy, the Bank:

- (a) defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) “corrupt practice” means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution;
 - (ii) “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract;
 - (iii) “collusive practice” means a scheme or arrangement between two or more bidders, with or without the knowledge of the Recipient, designed to establish bid prices at artificial, noncompetitive levels; and
 - (iv) “coercive practice” means harming or threatening to

harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

- (b) will cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Recipient or of a beneficiary of the loan engaged in corrupt, fraudulent, collusive or coercive practices during the procurement or the execution of that contract, without the Recipient having taken timely and appropriate action satisfactory to the Bank to remedy the situation; and
- (c) will sanction a firm or individual, including declaring them ineligible, either indefinitely or for a stated period of time, to be awarded a Bank-financed contract if it at any time determines that they have, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, a Bank-financed contract.

58. Payment upon Termination

58.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as **indicated in the PCC**. Additional Liquidated Damages shall not apply. If the total amount due to the *Employer* exceeds any payment due to the Contractor, the difference shall be a debt payable to the *Employer*.

58.2 If the Contract is terminated for the *Employer's* convenience or because of a fundamental breach of Contract by the *Employer*, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

59. Property

59.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the *Employer* if the Contract is terminated because of the Contractor's default.

60. Release from Performance

60.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the *Employer* or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall

be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

61. Suspension of Bank Loan or Grant

61.1 In the event that the Bank suspends the Loan or Grant to the *Employer*, from which part of the payments to the Contractor are being made:

- (a) The *Employer* is obligated to notify the Contractor of such suspension within 7 days of having received the Bank's suspension notice.
- (b) If the Contractor has not received sums due it within the 28 days for payment provided for in Sub-Clause 40.1, the Contractor may immediately issue a 14-day termination notice.

62. Eligibility

62.1 The Contractor shall have the nationality of an eligible country. The Contractor shall be deemed to have the nationality of a country if the Contractor is a citizen or is constituted, or incorporated, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including related services.

62.2 The materials, equipment and services to be supplied under the Contract shall have their origin in eligible source countries and all expenditures under the Contract will be limited to such materials, equipment, and services. At the Employer's request, the Contractor may be required to provide evidence of the origin of materials, equipment and services.

62.3 For purposes of GCC 62.2, "origin" means the place where the materials and equipment are mined, grown, produced or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that differs substantially in its basic characteristics or in purpose or utility from its components.

Section VIII. *Particular Conditions of Contract*

Except where otherwise indicated, all PCC should be filled in by the Employer prior to issuance of the Bidding Documents. Schedules and reports to be provided by the Employer should be annexed.

A. General	
GCC 1.1 (d)	The financing institution is: Caribbean Development Bank
GCC 1.1 (s)	The <i>Employer</i> is <i>Government of Montserrat, Government Headquarters, Brades, Montserrat.</i>
GCC 1.1 (w)	The Intended Completion Date for the whole of the Works shall be within 21 calendar days
GCC 1.1 (z)	The Project Manager is <i>Mervin Browne, Basic Needs trust Fund, Little Bay, Montserrat.</i>
GCC 1.1 (bb)	The Site is located in the vicinity of the Cavalla Hill Church, Cavalla Hill, Montserrat
GCC 1.1 (ee)	The Start Date shall be no later than 5 day after contract execution
GCC 1.1 (ii)	The Works consist of construction of 200m reinforced concrete pavement wit curb and slipper.
GCC 2.2	Sectional Completions are: <i>N/A</i>
GCC 2.3(i)	The following documents also form part of the Contract: <i>as listed in clause GCC 2.3</i>
GCC 3.1	The language of the contract is <i>English</i> . The law that applies to the Contract is the law of Montserrat.
GCC 5.1	The Project manager may delegate any of his duties and responsibilities.
GCC 8.1	Schedule of other contractors: <i>N/A</i>
GCC 13.1	The minimum insurance amounts and deductibles shall be: <ul style="list-style-type: none"> (a) for loss or damage to the Works, Plant and Materials: the full reinstatement value of the Works. (b) for loss or damage to Equipment: <i>\$50,000.00.</i> (c) for loss or damage to property (except the Works, Plant, Materials, and

	Equipment) in connection with Contract \$75,000.00. (d) for personal injury or death: (i) of the Contractor's employees: \$1,000,000.00. (ii) of other people: \$1,000,000,00.
GCC 14.1	Site Data are: <i>as per drawing</i>
GCC 20.1	The Site Possession Date(s) shall be: <i>no later than 5 days after contract execution</i>
GCC 23.1 & GCC 23.2	Appointing Authority for the Adjudicator: Montserrat Bar Association.
GCC 24.3	Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: Shall be as agreed between parties.
GCC 24.4	The arbitration laws of Montserrat All disputes arising in connection with the present Contract shall be finally settled under the Arbitration Laws of Montserrat by one or more arbitrators appointed in accordance with said laws.
B. Time Control	
GCC 25.1	The Contractor shall submit for approval a Program for the Works within [7] days from the date of the Letter of Acceptance.
GCC 25.3	The period between Program updates is 7 days. The amount to be withheld for late submission of an updated Program is \$500.00.
C. Quality Control	
GCC 33.1	The Defects Liability Period is: 365 days.
D. Cost Control	
GCC 43.1	The currency of the <i>Employer's</i> country is: Eastern Caribbean Dollars (XCD).
GCC 44.1	The Contract <i>is</i> not subject to price adjustment in accordance with GCC Clause 44, and the following information regarding coefficients does not apply.
GCC 45.1	The proportion of payments retained is: <i>3 percent</i> .
GCC 46.1	The liquidated damages for the whole of the Works are 0.10 percent per day.

	The maximum amount of liquidated damages for the whole of the Works is 10 percent of the final Contract Price.
GCC 48.1	The Advance Payments shall be: 20 % and shall be paid to the Contractor.
GCC 49.1	The Performance Security amount is 10 % of the Contract Price <i>denominated in the types and proportions of the currencies in which the Contract Price is payable, or in a freely convertible currency acceptable to the Employer</i> (a) Bank Guarantee: 5 % of the Contract Price. (b) Performance Bond: 10 % of the Contract Price.
E. Finishing the Contract	
GCC 55.1	The date by which operating and maintenance manuals are required is prior to the issuance of the practical completion certificate.
GCC 55.2	The amount to be withheld for failing to produce operating and maintenance manuals by the date required in GCC 58.1 is 0.5 % of the Contract Price.
GCC 58.1	The percentage to apply to the value of the work not completed, representing the <i>Employer's</i> additional cost for completing the Works, is 10 percent.

Section IX - Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

Table of Forms

Letter of Acceptance	44
Contract Agreement	46
Performance Security	48
Advance Payment Security	50

Letter of Acceptance

[on letterhead paper of the Employer]

..... *[date]*

To: *[name and address of the Contractor]*

Subject: *[Notification of Award Contract No.]*

This is to notify you that your Bid dated *[insert date]* for execution of the
. . . . *[insert name of the contract and identification number, as given in the Appendix to Bid]*
. . . . for the Accepted Contract Amount of the equivalent of *[insert amount in numbers and words and name of currency]*, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the of the Performance Security Form included in Section IX (Contract Forms) of the Bidding Document.

[Choose one of the following statements:]

We accept that _____ *[insert the name of Adjudicator proposed by the Bidder]* be appointed as the Adjudicator.

[or]

We do not accept that _____ *[insert the name of the Adjudicator proposed by the Bidder]* be appointed as the Adjudicator, and by sending a copy of this Letter of Acceptance to _____ *[insert name of the Appointing Authority]*, the Appointing Authority, we are hereby requesting such Authority to appoint the Adjudicator in accordance with ITB 42.1 and GCC 23.1.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made theday of,, between
 (hereinafter “the *Employer*”), of the one part, and
 (hereinafter “the *Contractor*”), of the other part:

WHEREAS the *Employer* desires that the Works known as [*name of the Contract*]. . . .
 should be executed by the *Contractor*, and has accepted a Bid by the *Contractor* for the
 execution and completion of these Works and the remedying of any defects therein,

The *Employer* and the *Contractor* agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
 - (a) the Letter of Acceptance
 - (b) the Bid
 - (c) the Addenda Nos 1 and 2
 - (d) the Particular Conditions
 - (e) the General Conditions;
 - (f) the Specification
 - (g) the Drawings; and
 - (h) the completed Schedules,
3. In consideration of the payments to be made by the *Employer* to the *Contractor* as indicated in this Agreement, the *Contractor* hereby covenants with the *Employer* to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The *Employer* hereby covenants to pay the *Contractor* in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of on the day, month and year indicated above.

Signed by:
for and on behalf of the *Employer*

Signed by:
for and on behalf the Contractor

in the
presence of:
Witness, Name, Signature, Address, Date

in the
presence of:
Witness, Name, Signature, Address, Date

Performance Security

[Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: *[Name and Address of Employer]*

Date:

Performance Guarantee No.:

We have been informed that *[name of the Contractor]*. (hereinafter called "the Contractor") has entered into Contract No. *[reference number of the Contract]*. dated with you, for the execution of *[name of contract and brief description of Works]*. (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we *[name of the Bank]*. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[name of the currency and amount in figures]* ¹. (. *[amount in words]*.) such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the Day of , ², and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458, except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.

.....
[Seal of Bank and Signature(s)]

Note –

All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.

¹ *The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract and denominated either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Employer.*

² *Insert the date twenty-eight days after the expected completion date. The Employer should note that in the event of an extension of the time for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the*

expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Advance Payment Security

[Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: *[Name and Address of Employer]*

Date:

Advance Payment Guarantee No.:

We have been informed that *[name of the Contractor]*. (hereinafter called "the Contractor") has entered into Contract No. *[reference number of the Contract]*. dated with you, for the execution of *[name of contract and brief description of Works]*. (hereinafter called "the Contract").

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum *[name of the currency and amount in figures]*¹. (. *[amount in words]*.) is to be made against an advance payment guarantee.

At the request of the Contractor, we *[name of the Bank]*. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[name of the currency and amount in figures]**. (. *[amount in words]*.) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the advance payment for purposes other than the costs of mobilization in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Contractor on its account number *[Contractor's account number]*. at *[name and address of the Bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that eighty (80) percent of the Contract Price has been certified for payment, or on the . . . day of ,², whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

..... *[Seal of Bank and Signature(s)]*.

Note -

All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.

1 The Guarantor shall insert an amount representing the amount of the advance payment denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Employer.

2 *Insert the expected expiration date of the Time for Completion. The Employer should note that in the event of an extension of the time for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.*